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The Relationship Between Professional Quality Life, Coping Mechanisms, and Mental Fortitude

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Nancy Lynn Sarcia

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Walden University
2020

Abstract

The Relationship Between Professional Quality Life, Coping Mechanisms, and Mental

Fortitude

by

Nancy Lynn Sarcia

MA, Southern Connecticut State University, 2012

MBA, Post University, 2009

BA, University of South Carolina, 2005

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Policy & Administration

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Abstract

The health and mental fortitude of individuals enforcing policy and law is important to communities, agencies, and families. This helping profession is plagued by high suicide rates, maladaptive coping, and other negative health-related ailments. The present study used the DRS 15-R, ProQOL, RS-14, and BriefCOPE scales across 315 participants in order to investigate coping mechanisms and professional quality of life facets among individuals enforcing policy and law. It revealed multiple statistically significant relationships using multiple linear regression, hierarchical linear regression, and binary logistic regression. Emotion-focused coping techniques and compassion satisfaction both possessed statistically significant direct relationships with resilience and hardiness. Less productive coping techniques and burnout both exhibited statistically significant indirect relationships with hardiness. Burnout and less productive coping practices showed statistically significant indirect relationships with resilience. Compassion satisfaction exhibited a statistically significant direct relationship with rigid control, and burnout showed a statistically significant indirect relationship. Secondary traumatic stress symptoms were found to have a statistically significant indirect relationship with rigid control. The results may be used by law enforcement to manage stress in healthier ways which can benefit families, as well as decrease sick time, maladaptive patterns escalating into self-harm, and the intangible and tangible costs of workforce turnover rates.

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Dedication

This dissertation is dedicated first and foremost to God, as we can do all things through His strength (Philippians 4:13) and His purposes for our lives (Romans 8:28). It is also dedicated to the people who chose, and continue to choose every day, to dedicate their lives to the safety and protection of Americans at home and abroad, in spite of the personal costs and sacrifices.

Acknowledgments

I would like to thank my friends and colleagues who have stood by me through this process, especially those who offered their help and expertise. I would like to thank my parents, friends' parents, and mentors for their pride in my accomplishments, endeavors, and adventures. It is an honor to be so highly esteemed, and it was your faith in my abilities that helped to push me along.

Table of Contents

List of Tables

Chapter 1: Introduction to the Study

Introduction

The challenges posed by recent terrorist events, natural and human-made disasters, the acceleration of homicides, violent protests, and deaths of individuals who enforce policy and law dominate today's headlines. Government workers who enforce policy and law are being propelled into extreme situations, which are difficult to prepare for and challenge their agility, skills, character, and pragmatism. These challenges have forced a more integrated response from policing agencies on federal, state, and local levels. The legal integration in response and sharing of information by federal, state, and local levels (Cole & Dempsey, 2016, pp. 73–124) is raising organizational policy questions beyond responsibility and sharing of information, causing a broader focus on training and retention. With these new collaborative efforts and the dynamic environment of public safety, perhaps policing departments should be rethinking organizational policies and procedures to safeguard mental health and increase professional quality of life. This study serves as a first step in exploring the relationship between coping behaviors and professional quality of life (i.e., compassion satisfaction or compassion fatigue, composed of burnout and secondary traumatic stress) among government workers who enforce policy and law with high levels of resiliency and hardiness.

Several developments in the past 15 years have raised issues as to the suitability of existing theories and methods regarding job roles and safeguarding the mental health of people serving in roles that enforce policy and law at the federal, state, and local

levels. The devastating attacks on September 11, 2001, in the United States, and the increasing number of natural disasters—such as Hurricane Katrina and Hurricane Sandy—have altered the modern concept of police response. More common terrorist events home and abroad on "soft targets"—such as in San Bernardino, Orlando, Paris, Nice, Las Vegas, New York City, and others—have heightened the level of policing response to maintain public safety (Klausen, Campion, Needle, Nguyen, & Libretti, 2016). The radicalism associated with the Black Lives Matter movement (McClain, 2016) and crimes committed by undocumented immigrants has increased the scrutiny experienced by government workers enforcing policy and law when responding to incidents involving minorities. The struggle for positive recognition, as seen in movements such as Blue Lives Matter (Elinson, 2016), showcases the additional personal and professional pressure these agents undergo attempting to earn and maintain public approval. There is also an increase in the burdens associated with the shrinkage of the U.S. military that is causing extended and more frequent deployments for the Reserves and National Guard, both of which contain members who often serve in policing roles in their civilian jobs (Hannan, Gallagher, & Perrin, 2015).

In 2011, Rutkow, Gable, and Links stated that current organizational practices have inefficient and insufficient mental health offerings and resources for professional responders. Since that time, significant strides have yet to rectify the deficit of knowledge related to preserving and strengthening the mental health and resolve of professional responders. Numerous studies have revealed substantial evidence about positive and

negative mental health outcomes for victims, not responders. Few studies focus on the psychological health of government workers who enforce policy and law in the presence of associated work-related stressors. The majority of the literature reports on negative mental health states for policing populations and samples. This study serves to fill that gap by exploring the relationship between positive characteristics of psychological fortitude associated with coping behaviors and professional quality of life.

Background

Multiple studies investigate traits associated with the building and weakening of mental fortitude. A large body of research exists that examines the characteristics of hardiness, resiliency, posttraumatic stress disorder (PTSD), and secondary traumatic stress disorder (STSD), but a better understanding of the causes, consequences, treatments, strengthening, and prevention of these concepts remain, especially among certain populations. Specifically, focused research concerning professional quality of life and guarding mental health of government employees working to enforce law and policy is lacking (Gist, 2007; McKoy, 2013; Pulido, 2007; Waite & Richardson, 2004; Butler, Morland, & Leskin, 2007). Many helping professions can benefit from understanding these elements better. Gaining an understanding of the personal and professional factors that contribute to engagement in maladaptive coping practices can generate awareness about the causes of these behaviors. The consequences of coping behaviors also need more investigation to determine which actions can positively and negatively impact health and to what degree. As for treatments, there are a variety of plans available with

some methods given before stressful incidents to build resiliency and hardiness and other strategies employed after stressful episodes. Nonetheless, a limited number of studies exist in which researchers have examined how to be more successful with these traits.

Causes

A variety of studies include attempts to answer questions about the origins of maladaptive coping responses. Brauser's (2011) research showed a relationship between genetics and environment to the susceptibility of acquiring PTSD. People can have a natural predisposition toward maladaptive responses to stressors and trauma in specific settings. Stellman et al. (2008) focused on those responsible for cleaning up the aftermath of 9/11 at the World Trade Center as a participant group and found that the sights, sounds, smells, and participants' stories associated with that cleanup period negatively impacted mental health. From a broader perspective, this implies that individuals with immense trauma or chronic stress can form harmful psychological and physical connections to sights, sounds, and smells associated with stressful and traumatic times. Without proper training on managing trauma and stressors, individuals can unknowingly put their mental and physical health at risk in damaging ways, retraumatizing themselves frequently and escalating maladaptive coping states (Cerney, 1995; Conrad & Kellar-Guenther, 2006; Papazoglou, 2013).

Consequences

Mental health deficiencies can affect a person's ability to make decisions, subsequently impacting their performance of work-related functions. According to

Creamer and Liddle (2005), those exposed to trauma as part of their regular professional roles are susceptible to STSD. Collins and Long (2003) validated the occurrence of STSD from the vicarious traumatization theory (based on constructivist self-development theory, developmental theory, and interpersonal theory), traumatic countertransference theory, compassion fatigue theory, and burnout theory. Many of the principles in these theories overlap with one another. As Figley (1995) and Stamm (2002, 2016) pointed out, compassion fatigue—comprised of burnout and secondary traumatic stress—can escalate into more serious mental health conditions. As Conrad and Kellar-Guenther (2006) attested, compassion fatigue is concerning because of its relationship to the development of burnout, posttraumatic stress, and depression, which can inhibit an individual's ability to perform work-related tasks. This idea supports Cerney's (1995) assessment that burnout can cause an individual to lose objectivity and the ability to be helpful in a professional environment (p. 138).

Anderson and Papazoglou (2015) discussed a need for more studies that address the mental health of people enforcing law and policy, especially concerning the occurrence and impact of compassion fatigue and compassion satisfaction. Mental health ailments that persist among this group can be detrimental to their personal safety and the safety of others. Covey, Shucard, Violanti, and Schucard (2013) attested that enforcers of law and policy who experience chronic work-related incidents involving trauma may have an inability to make decisions during critical moments of stress. Individuals in this group can exist in hyperaroused states that make it difficult to filter out unimportant

information or stimuli, inhibiting the ability to deliver quick, decisive, and appropriate responses during critical incidents. This can impact these people's ability to serve and protect, while also damaging their mental and physical health.

The initiation of more research is also required to understand the relationship between particular organizational environments and responses to stress and trauma among workers. Unlike many corporate and state agency cultures, the organizational culture in policing organizations can make it unacceptable to express fear or show emotion (Papazoglou, 2013). Stigma that surrounds mental health in responder organizations can cause workers to ignore or hide signs and symptoms of psychological issues. Temporary ailments can grow into more extensive and damaging long-term illnesses when a supportive organizational environment for mental health concerns is absent (Bergeron, Biziak, & Krause, 2005). Expressiveness can begin to characteristically be seen as a weakness, further deterring employees from seeking mental health support outside of work as well (Papazoglou, 2013, p. 198).

If left unchecked, compassion fatigue can increase to the point of desperation for some, leading to suicide or other harmful coping practices. Reports show that the most significant risk to the safety of people enforcing law and policy can be themselves. According to Miller (2005), three times as many police officers commit suicide than are killed by criminals. Miller contends that this number is underreported, with many deaths misclassified as "undetermined cause" instead of suicide (p. 101). Similarly, harmful coping practices, including the misuse of alcohol or drugs, can be extremely damaging to

law enforcement personnel. Abuse of this nature can have detrimental professional, personal, organizational, and community costs.

To serve communities efficiently, government employees enforcing policy and law need to maintain job satisfaction. Little research identifies how to create and manage this outcome in a policing environment (Miller, Mire, & Kim, 2009, p. 419). According to Cerney (1995), a universally accepted definition of what constitutes *job satisfaction* does not even exist. Still, the stereotypical organizational culture of policing agencies does not support job satisfaction as a goal. Instead, because the top priority is maintaining public safety, concerns regarding job satisfaction become secondary to rigid structure and order (Miller et al., 2009). Nonetheless, many individuals in such environments exhibit compassion satisfaction and thrive, especially while others are displaying signs of compassion fatigue. According to Stamm (2002, 2016), this is not unusual; some individuals experiencing trauma and stress in a work environment can experience compassion satisfaction whereas others experience compassion fatigue.

Treatments

Questions remain on the best method to treat individuals and strengthen hardiness and resiliency. Many studies show redemption and a positive mental health outlooks for those exposed to chronic trauma or extreme stress, more research needs to be done to reach standardized response methods for treatment. Benedek, Fullerton, and Ursano (2007) expanded the collection of mental health data in meaningful ways by providing simple solutions for strengthening psychological fortitude. Looking at public health and

public safety workers who respond to human-made and natural disasters, these researchers call for the use of psychological first aid, and clinical incident needs assessment teams to increase resilience. Postulating that individuals can strengthen psychological fortitude by mindfully growing stronger after exposure to hardships, Chopko and Schwartz (2009) used exposure theory, posttraumatic growth theory (PTG), and mindfulness theories to explore factors for PTG among Midwestern police officers. Figley (1995) and Stamm (2002) found evidence that job satisfaction in the form of compassion satisfaction can cause mental fortitude among people in helping professions.

Knowledge gained from exploring predictors of hardiness and resilience among government policy and law enforcers could help to promote appropriate training to safeguard and strengthen mental fortitude. The relationship that hardiness profiles and resilience have with compassion satisfaction and compassion fatigue are not entirely clear; nor is it clear how the way people cope and exhibit compassion can affect levels of resilience and hardiness profiles. From an organizational and community standpoint, these studies on resiliency and hardiness profiles are incredibly valuable not only for the knowledge they can provide about mental health but also as a method for attrition and conserving resources allotted for the recruitment and training of new personnel. Considering the mounting stressors associated with policing, understanding the maintenance and building of mental fortitude among government agents who enforce policy and law is critical.

Problem Statement

Many studies have increased awareness of the effects of PTSD and STSD, aliments both associated with compassion fatigue (Stamm, 2002, 2016; Figley, 1995), but none has examined traits associated with high levels of resiliency and hardiness profiles. These studies also do not explain why some individuals experience compassion satisfaction when faced with work-related stress and trauma, whereas others respond more negatively to similar experiences. Thus, research that addresses the susceptibility of mental health deficiencies as a cumulative body of scientific literature is mostly incomplete.

Traumatic events individuals encounter throughout life and work can be damaging to their mental health and ability to cope, but they are not necessarily always indicators for an inability of this practice (Stamm, 2002, 2016). Often, work and life trauma can lead to opportunities to acquire more resiliency and hardiness in these areas. Resiliency research has shown that the ability to reframe and flexibly apply coping styles to situations and experiences is an asset to mental health (Chopko & Schwartz, 2009; Luthans, Vogelgesang, & Lester, 2006). When a person experiences trauma and hardship and overcomes it positively, they create a personal higher baseline for the onset of adverse mental health ailments (Ruzek, Marguen, & Litz, 2007; Butler et al., 2007). Misunderstandings of this principle support psychological health stigmas in responder and policing fields and organizations, rather than diminishing it (Paton & Violanti, 2007; Bergeron et al., 2005).

The present pool of quantitative studies regarding the relationship between professional quality of life and mental fortitude has limitations. The impact of exposure to human-made disasters on mental health is difficult to understand. For example, Chopko and Schwartz (2009) admitted that their results do not reflect causation and that their samples were based on convenience (p. 372). Creamer and Liddle (2003) acknowledged that their findings did not correspond with previous studies and wondered if this had to do with deficiencies in the tool used to investigate and how much time elapsed after the event and their study (pp. 94–95). Other studies do not address the specific populations in question and human-made disasters in urban areas, which are the exact circumstances that numerous government agents enforcing policy and law find themselves responding to.

To build on previous resilience, hardiness, compassion, and coping studies, my research will examine active and separated government agents who enforce policy and law for the state, local, and federal forces (i.e., military, corrections, uniformed policing divisions of federal agencies, special agents, investigators, etc.). The pool of participants was from the United States, with a probable convenience sample from the Eastern portion of the nation and the New England area. I sought to understand what combinations of compassion and coping styles are statistically substantial for producing certain levels of resiliency and hardiness. In turn, the preliminary knowledge gained from these results can help practitioners and experts create future studies that focus on increasing mental fortitude among the helping profession field. Future studies of this nature can create more

efficient services and training for employees and help organizations recruit and retain employees. Increased retention can lower community costs associated with turnover rates and intangible community costs associated with the deterioration of this population's mental and physical health.

Purpose of the Study

The purpose of this study was to better understand the relationship between professional quality of life and mental fortitude. In this study I sought to determine whether a relationship exists between professional quality of life and coping behaviors and the rates of resiliency and hardiness among government agents who enforce policy and law. Professionals in this study included active and separated government employees serving in this role from state, local, and federal forces (i.e., military, corrections, uniformed policing divisions of federal agencies, special agents, investigators, etc.). These individuals were from the United States with a probable convenience sample from the Eastern portion of the nation and the New England area. According to Waite and Richardson (2004),

1. [the premise behind] resiliency embraces building mind, body, and spirit to promote optimal health among patients and consumers… Rather than just treating or diagnosing physical symptoms, professionals would be able to treat the whole person and focus on the healing power of individual strengths. (p. 178).

By identifying the coping styles and compassion type that promote resiliency and specific hardiness profiles, future studies can be more informed about mental health. Through better-focused studies regarding psychological fortitude, policing agencies can gain insight on how to attract, retain, develop, and support their workforce through suitable training and mental health offerings. These organizations could then build a workforce less susceptible to psychological health abnormalities caused by compassion fatigue and coping deficiencies from job-related stressors, such as burnout, drug and alcohol abuse, PTSD, STSD, and suicide.

Research Questions and Hypotheses

Many previous researchers have used quantitative studies to examine the mental health, hardiness, and resiliency of government agents who enforce policy and law. A significant portion of this prior research focused on identifying negative attributes associated with work-related stressors, compassion fatigue, and maladaptive coping (Marmar et al., 2006; Galatzer-Levy et al., 2014; Bacharach, Bamberger, & Doveh, 2008; Gill et al., 2014; Pietrzak, Pullman, Cotea, & Nasveld, 2012; Brouneus, 2014; Engel et al., 2014; Nash et al., 2014; Possemato et al., 2014; Schultz, Glickman, & Eisen, 2014; Cukor et al., 2011). This study aims to use quantitative methods to determine the relationships between compassion and coping styles and levels of resiliency and associated hardiness profiles in participants using concrete and measurable values from scales in an unobtrusive and minimally invasive manner. The goal of this study was to create results to guide future studies and further assist organizations in crafting training

and mental health services to safeguard and protect the physical and psychological health of workers. The research questions that guided this study sought to assess coping styles through Carver's coping orientation to problems experienced inventory scale (COPE), hardiness profiles through Bartone's dispositional resilience scale (DRS 15-R), resilience through Wagnild and Young's resilience scale, and compassion through Stamm's professional quality of life scale (ProQOL).

The hypotheses surrounding the associations between resilience and hardiness were derived from the notion that a direct relationship exists between resilience, hardiness, and sensation seekers for hardiness (low control and commitment and high challenge). There is also an assumption that resilience and rigid control for hardiness (high control and commitment and low challenge) have an indirect relationship. Previous research supports these assumptions.

Hardiness (commitment, challenge, control), resilience, and sensation seekers for hardiness (low control and commitment with high levels of challenge) have a direct relationship with one another. High levels of resilience have an association with high morale, psychological well-being, satisfaction with life, and feelings of purposefulness (Wagnild & Young, 1993; Wagnild & Young, 2009). Similarly, high hardy persons believe they can influence the events in their lives. Such persons are deeply involved in or committed to activities, viewing changes as exciting challenges that cause personal development (Kobasa, 1979). The concepts found in high hardy and high resilient individuals align with those that Johnsen, Hystad, Bartone, Laberg, and Eid (2014) found

for sensation seekers, who have low psychological distress and a high quality of life. The favorable characteristics of these traits shift when levels become low. Low levels of resilience have an association with depression, low morale, dissatisfaction with life, and feelings of purposelessness (Wagnild & Young, 1993; Wagnild & Young, 2009). Likewise, individuals with low hardiness tend to become ill more often and respond poorly to stress (Kobasa, 1979).

Rigid control for hardiness (medium to high control and commitment with low levels of challenge) has an indirect relationship with resilience. As Johnsen et al. (2014) found, individuals with these hardiness facets have high psychological distress and low quality of life. Likewise, individuals with low resilience tend to have more negative feelings and a pessimistic outlook toward life (Wagnild & Young, 1993; Wagnild & Young, 2009).

Using the premises set out by the above relationships, I designed two research questions to determine the interactions between the independent variable (coping mechanisms and professional quality of life) and dependent variables (resilience and hardiness). Multiple hypotheses for each research question are listed. Explanations that support the alternative hypotheses based on previous research results are included.

RQ1: How do coping mechanisms affect resilience and hardiness facets among those that enforce policy and law?

$H_0$1: Coping mechanisms have no statistically significant relationships with resilience and hardiness facets among people who enforce policy and law.

$H_1$1: Problem-focused coping has a direct relationship with resilience, hardiness, and sensation seekers for hardiness (low control and commitment with high levels of challenge).

$H_2$1: Problem-focused coping has an indirect relationship with rigid control for hardiness (medium to high control and commitment with low levels of challenge).

$H_3$1: Emotional-focused coping has an indirect relationship with hardiness and resilience, and a direct connection with rigid control for hardiness (medium to high control and commitment with low levels of challenge).

$H_4$1: Emotion-focused coping has an indirect relationship with sensation seekers for hardiness (low control and commitment and high challenge).

$H_5$1: Less productive coping practices have an indirect relationship with sensation seekers for hardiness (low control and commitment and high challenge).

$H_6$1: Less productive coping practices have an indirect relationship with hardiness and resilience while having a direct link with rigid control for hardiness (medium to high in control and commitment and low in challenge).

The hypotheses surrounding coping mechanisms and resilience and hardiness facets derive from the results found in the body of scientific literature. Problem-focused coping has a direct relationship with resilience, hardiness, and with sensation seekers for hardiness (low control and commitment with high levels of challenge). Problem-focused coping is a preferred health management strategy used by those in law and policy enforcement to decrease stress and anxiety. It has shown to be more effective than

emotion-focused tactics in this professional environment (Rao & Singh, 2017; Wassermann, Meiring, & Becker, 2018). Those with the sensation seeker hardiness profile, those with a high hardy profile, and those showing high resilience are found to have better qualities of life, low psychological distress, high morale, and more feelings of purposefulness and life fulfillment (Wagnild & Young, 1993; Wagnild & Young, 2009; Johnsen et al., 2014).

Problem-focused coping has an indirect relationship with rigid control for hardiness (medium to high control and commitment with low levels of challenge). Rigid control individuals typically show worse general health profiles than people classified as low hardy (i.e., low control, commitment, and challenge) (Sandvik et al., 2013; Johnsen et al., 2014). Problem-focused coping methods in a law and policy enforcement environment tend to be preferred by professionals, as such tactics tend to be more successful than other strategies at improving general health (Wassermann et al., 2018; Rao & Singh, 2017).

Emotional-focused coping has an indirect relationship with hardiness and resilience and has a direct link with rigid control for hardiness (medium to high control and commitment with low levels of challenge). Low hardiness has an association with an inability to manage stress (Kobasa, 1979). Win and Ho (2017) found that the more individuals employ emotion-focused coping methods to handle stressful situations, the lower their life satisfaction and the higher their depression, anxiety, and stress. Low levels of resilience have an association with depression, hopelessness, anxiety, and

purposelessness (Wagnild & Young, 1993; Wagnild & Young, 2009). Sandvik et al. (2013) and Johnsen et al. (2014) found that persons exhibiting rigid control hardiness facets were psychologically distressed and experienced lower quality of life.

Emotion-focused coping has an indirect relationship sensation seekers for hardiness (low control and commitment and high challenge). Emotion-focused coping strategies are beneficial for stressors that cannot be changed or managed through actions in an environment (Lazarus & Folkman, 1984; Probst & Jiang, 2016; Rahnama, Shahdadi, Bagheri, Moghadam, & Absalan, 2017). Policing work as a professional environment is more task-oriented, with individuals working in the field found to better manage stress and anxiety with problem-focused coping strategies than emotion-focused strategies. Data have shown that people in a law and policy enforcement environment do not prefer to use emotion-focused coping strategies, as they are not as useful for decreasing stress and anxiety as problem-focused strategies (Rao & Singh, 2017; Wassermann et al., 2018). Thus, those classified as sensation seekers would not be able to maintain their high quality of life using emotion-focused coping as a health management tactic.

Less productive coping practices have an indirect relationship with sensation seekers for hardiness (low control and commitment and high challenge). Sensation seekers typically experience higher quality of life and better general health than individuals classified as high hardy (i.e., high commitment, high control, and high challenge) (Johnsen et al., 2014). Avoidance coping practices are primarily considered

maladaptive and are associated with behaviors that lower general health and quality of life, as well as serve as a reliable predictor for PTSD (Bartone, Hystad, Eid, & Brevik, 2012; Bartone, Eid, Hystad, Jocoy, Laberg, & Johnsen, 2015; Nash et al., 2014; Folkman & Lazarus, 1988).

Less productive coping practices have an indirect relationship with hardiness and resilience, while having a direct link with rigid control for hardiness (medium to high in control and commitment and low in challenge). Research shows that people using avoidance coping practices tend to have lower quality of life and general health than those employing other tactics to manage stress and anxiety; as such, avoidance coping behaviors have a propensity to serve as predictors for PTSD (Bartone et al., 2012; Bartone et al., 2015; Nash et al., 2014; Folkman & Lazarus, 1988). Low levels of resilience has a relationship with stress, depression, hopelessness, anxiety, and loneliness (Wagnild & Young, 2009; Wagnild & Young, 1993). Low levels of hardiness has an association with maladaptive coping behaviors, which serve as predictors for PTSD (Bartone et al., 2012; Bartone et al., 2015). Individuals exhibiting rigid control for hardiness have lower levels of general health and quality of life than those classified as low hardy (i.e., low commitment, low control, low challenge) (Sandvik et al., 2013; Johnsen et al., 2014).

RQ2: How do professional quality of life factors (compassion satisfaction and compassion fatigue) affect resilience and hardiness profiles among those that enforce policy and law?

$H_0 2$: There is no relationship between professional quality of life (compassion satisfaction and compassion fatigue) factors and resilience and hardiness profiles.

$H_1 2$: Burnout and secondary traumatic stress have an indirect relationship with resiliency, hardiness, and sensation seekers for hardiness (low control and commitment and high challenge).

$H_2 2$: Burnout and secondary traumatic stress have a direct relationship with rigid control for hardiness (medium to high control and commitment and low challenge).

$H_3 2$: Compassion satisfaction has a direct relationship with resiliency, hardiness, and sensation seekers for hardiness (low control and commitment and high challenge).

$H_4 2$: Compassion satisfaction has an indirect relationship with rigid control for hardiness (medium to high control and commitment and low challenge).

There is substantial support for the hypotheses surrounding professional quality of life factors (compassion satisfaction/compassion fatigue) and resilience and hardiness levels. Burnout and secondary traumatic stress have an indirect relationship with resiliency, hardiness, and sensation seekers for hardiness (low control and commitment and high challenge). Compassion fatigue has a relationship with burnout and secondary traumatic stress (Figley, 1995; Stamm, 2002, 2010). Burnout is less likely to occur among persons who possess hardy personalities (Garrosa, Rainho, Moreno-Jimenez, & Monteiro, 2010). Low levels of hardiness has an association with inadequate responses to

stress (Kobasa, 1979). Feelings of dissatisfaction, depression, hopelessness, stress, and anxiety are present among people showing compassion fatigue and low levels of resiliency (Wagnild & Young, 1993; Wagnild & Young, 2009; Stamm, 2002; Radey & Figley, 2007; Figley, 1995). Sensation seekers exhibit the highest quality of life and health, scoring better than even those classified as high hardy (i.e., high commitment, high control, high challenge; Johnsen et al., 2014).

Burnout and secondary traumatic stress have a direct relationship with rigid control for hardiness (medium to high control and commitment and low challenge). Compassion fatigue has an association with burnout and secondary traumatic stress (Figley 1995; Stamm, 2002, 2010). Sandvik et al. (2013) and Johnsen et al. (2014) found that individuals exhibiting rigid control for hardiness are the most psychologically distressed and have the lowest quality of life. Compassion fatigue has an association with a lower quality of life and stress (Stamm, 2002; Radey & Figley, 2007; Figley, 1995).

Compassion satisfaction has a direct relationship with resiliency, hardiness, and sensation seekers for hardiness (low control and commitment and high challenge). Compassion satisfaction has an association with a high quality of life (Stamm, 2002; Radey & Figley, 2007; Figley, 1995). Feelings of joy, purpose, well-being, and morale are present in both high resiliency and compassion satisfaction (Wagnild & Young, 1993; Wagnild & Young, 2009; Stamm, 2002; Radey & Figley, 2007; Figley, 1995). Burnout is less likely to occur among individuals who are hardy (Garrosa et al., 2010). Individuals possessing control, commitment, and challenge are healthier than individuals who do not

show such traits. High levels of hardiness has an association with deep involvement and commitment to activities and the perception that changes are exciting challenges that aid in personal development (Kobasa, 1979). How a person perceives the seriousness of a stressor impacts their ability to manage that stressor successfully (Folkman, Lazarus, Dunkel-Schetter, DeLongis, & Gruen, 1986).

Compassion satisfaction has an indirect relationship with rigid control for hardiness (medium to high control and commitment and low challenge). Persons possessing compassion satisfaction are joyful and fulfilled (Stamm, 2002; Radey & Figley, 2007). Compassion satisfaction can lead to mental fortitude, as positive perceptions improve psychological and physical health (Flarity, Nash, Jones, & Steinbruner, 2016; Folkman et al., 1986). Individuals exhibiting rigid control for hardiness have worse health and quality of life than those classified as low hardy (Sandvik et al., 2013; Johnsen et al., 2014). Persons lacking hardiness respond poorly to stress and frequently become ill (Kobasa, 1979).

Theoretical Study Framework

The application of the proper framework for a study is incredibility important when crafting a research design using quantitative methods (Creswell, 2013). This study explored statistically significant professional quality of life facets and coping styles for resilience and hardiness profiles. Different scales were used to garner these measures from respondents. For resiliency, the true resilience scale designed by Wagnild and Young was used to identify the level of resiliency individuals possess by measuring core

characteristics of resilience, such as authenticity, purpose, perseverance, equanimity, and self-reliance. To complement this scale and better understand the factors that compose resiliency, I used Bartone's DRS 15-R. The longer version of the DRS breaks down the three elements that comprise hardiness, measuring commitment, control, and challenge with 15 items for each, making the assessment a total of 45 questions (Bartone, 2008). I used the shorter version of this scale comprised of 15 questions.

In the spirit of Adams, Figley, and Boscarino (2008), I used Stamm's (2008) ProQOL to determine respondents' levels of compassion fatigue, compassion satisfaction, burnout, and secondary traumatic stress. The ProQOL contains three interval scales: compassion satisfaction and compassion fatigue (split into two categories with separate ones for burnout and secondary traumatic stress). To administer the ProQOL, respondents answer 30 questions using a Likert scale that ranges from 1–5 for at *never* to *very often*.

To assess coping ability, I used a shortened version of Carver's COPE inventory scale. Similar to the complexity of previous scales, the COPE uses 13 different scales to categorize coping patterns for individuals under stress. Five separate scales containing four items to represent each behavior measure problem-focused coping, which consists of (a) active coping, (b) planning, (c) suppression of competing activities, (d) restraint coping, and (e) seeking of instrumental social support. There are also five distinct scales containing four elements that constitute each action to assess aspects of emotion-focused coping, which consists of (a) emotional social support, (b) positive reinterpretation, (c)

acceptance, (d) denial, and (e) religious worship. Lastly, to address what Carver terms as less productive forms of coping, there are three different scales to represent emotional venting, behavioral disengagement, and mental disengagement.

Due to the lengthiness of the COPE inventory in conjunction with the other necessary scales, I used the BriefCOPE to assess respondents' behavioral patterns for coping with stress. COPE poses 60 statements in a mixed order that coincides with one of the behavioral patterns from the 13 different scales. Using a Likert scale that ranges from 1 to 4 (i.e., *I don't do this at all* to *I do this a lot*), respondents assign a value to each statement that describes how often they typically engage in that particular coping pattern. The BriefCOPE uses 28 statements measured in a Likert fashion (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*). The specific statements carry the same essence as the original tool. The focal points of the shorter version also do not change, with similar behaviors measured without reverse coding via the following itemized statements: (a) self-distraction, items 1 and 19; (b) active coping, items 2 and 7; (c) denial, items 3 and 8; (d) substance use, items 4 and 11; (e) use of emotional support, items 5 and 15; (f) use of instrumental support, items 10 and 23; (g) behavioral disengagement, items 6 and 16; (h) venting, items 9 and 21; (i) positive reframing, items 12 and 17; (j) planning, items 14 and 25; (k) humor, items 18 and 28; (l) acceptance, items 20 and 24; (m) religion, items 22 and 27; and (n) self-blame, items 13 and 26.

Nature of the Study

Social scientists examine real-world scenarios that are often incredibly complex (Frankfort-Nachmias & Nachmias, 2008, p. 50). The results of this study might help agencies gain more insight into the relationship between job satisfaction and mental fortitude. In this study I sought to identify coping and compassion attributes associated with resilience and hardiness profiles. No intervention was applied to respondents, prestudy or poststudy, as the goal was to assess relationships with respondents' current hardiness and resiliency levels. The research aims to help practitioners create appropriate training and inspire studies to support, maintain, and build mental fortitude among government agents who enforce policy and law.

The research design and interpretation of data maintained the integrity and reliability of results. In the study I used trusted scales as analytical instruments and complex reasoning skills on the part of participants. The relationship between multiple independent variables was assessed on the criterion (dependent variables) to determine the weight these factors have on eliciting it. As previously discussed, I was interested in viewing the following factors as independent variables: (a) compassion fatigue (comprised of burnout and secondary traumatic stress); (b) compassion satisfaction; and (c) coping behaviors (emotion-focused coping, problem-focused coping, and actions associated with less productive forms of coping). Thus, hardiness (comprised of commitment, challenge, and control) and resiliency were the dependent variables for the

study. I used the DRS 15-R to classify respondents' levels of resiliency and hardiness profiles. The COPE and ProQOL gathered data values for the independent variables.

The respondents were active and separated government agents who enforce policy and law in state, local, and federal forces (i.e., military, corrections, uniformed policing divisions of federal agencies, special agents, investigators, etc.). The participant pool was from the United States, with a probable convenience sample from the Eastern portion of the nation and in the New England area. Each participant was given all the surveys related to the scales electronically to control integrity and quality in the study. Participants were not made aware of their scores on these surveys to decrease bias by keeping respondents from being initially classified as having low, medium, or high resiliency and hardiness.

As Knight-Lynn recommends, researchers should refrain from automatically trying to interpret results. Instead, information should be gathered and later assessed as a whole (Laureate Education, 2010a). In doing so, a researcher can safeguard a study from bias and stereotype threat from respondents, who may alter their responses based on attitudes or emotions caused by scoring high, medium, or low for resiliency and hardiness. Respondents were in groups and survey results were analyzed in SPSS. As the researcher, I evaluated the survey responses from the SPSS output. I determined the characteristics of each respondent's coping skills and compassion type and how these scores related to specific levels of resiliency and hardiness profiles.

Definitions

It is prudent to state the meaning of terms plainly, for it authoritatively grounds these concepts in scientific studies (Creswell, 2011, pp. 39-43). In this study, the independent variables and criterion variables (dependent variables) were continuous. The independent variables for this study are defined by the scales they are derived from. ProQOL was used to assess job satisfaction and contained two independent variables to measure compassion, as described by Stamm (2010) as compassion fatigue and compassion satisfaction.

Compassion fatigue: Consists of burnout, marked by frustration, exhaustion, depression, and anger. Burnout can be the result of feelings associated with hopelessness from difficulty in performing a job efficiently due to large workloads, a non-supportive work environment, and believing that work efforts make little difference. Secondary traumatic stress occurs through exposure to persons undergoing extraordinarily stressful and traumatic events, manifesting in helpers who take on the trauma of someone they helped in the form of sleep difficulties, moments of fear, intrusive images, and avoidance of reminders associated with the experience.

Compassion satisfaction: The pleasure derived from performing work well, to include positive feelings toward colleagues and positive contributions towards bettering society through work.

From Carver, Scheier, and Weintraub's (1989) COPE inventory, there are three larger independent variable categories to determine coping styles:

Problem-focused coping: Comprising behaviors connected with active coping, suppression of competing activities, restraint coping, planning, and seeking of instrumental social support.

Emotion-focused coping: Showcasing behaviors linked to acceptance, positive reinterpretation, denial, seeking religion, and acquiring emotional social support.

Less productive coping: Involving behaviors related to emotional venting, substance abuse, and self-blame.

The dependent variables or criterion in the study will be:

Resilience: According to Wagnild (2009) it is present in a core in all persons. From prior research, the essence of resiliency is understood to embody five major themes: (a) meaningful life, described as having a sense of one's own purpose; (b) perseverance, denoted as the ability to keep moving forward despite difficulties and obstacles; (c) equanimity, seen as the characteristic of balanced responses to negative circumstances, in that one can maintain a positive outlook and understand that the bad shall pass; (d) self-reliance, understood as knowing one's capabilities and responding appropriately to limitations; and (e) extensional aloneness, described as the ability to accept oneself and to not feel pressure to conform, allowing one to move forward alone if necessary.

Hardiness: According to Kobasa (1979), comprises the following three facets: (a) commitment, defined as one's tendency to view the world as meaningful and exciting; (b) control, seen as a belief in one's ability to influence or control events; and (c) challenge,

identified as one's conception that new experiences and change are exciting opportunities to develop and learn.

This study will use balanced and unbalanced profiles for hardiness that Sandvik et al. (2013) and Johnsen et al. (2014) note in their studies.

Balanced profiles: More common in hardiness research consist of *high hardy*, comprised of high commitment, high control, and high challenge; and *low hardy*, comprised of low commitment, low control, and low challenge.

Unbalanced profiles: Consist of *rigid control*, comprised of medium to high commitment, medium to high control, and low challenge (Sandvik et al., 2013; Johnsen et al., 2014); and *sensation seekers*, comprised of low commitment, low control, and high challenge (Sandvik et al., 2013; Johnsen et al., 2014).

The unbalanced profiles are not similar in regards to the body of literature they derive. The rigid control profile traits are denoted in the work of Sandvik et al. (2013) and Johnsen et al. (2014), but more research needs to be conducted. The sensation seeker profile dates to Wundt's 1873 optimal level of simulation construct and the work of other researchers during the 1950s and 1960s using the optimal level of arousal construct (Zuckerman, Eysenck, & Eysenck, 1978, p. 139; Zuckerman, Kolin, Price, & Zoob, 1964). Zuckerman and his colleagues centralized much of their work around defining the sensation seeker profile and refining the sensation seeker scale (SSS-V) (Zuckerman et al., 1978; Zuckerman, 1979; Zuckerman et al., 1964; Zuckerman, Bone, Neary, Mangelsdorff, & Brustman, 1972; Zuckerman & Link, 1968).

This study will not use the SSS-V to determine sensation seekers, but the characteristics of the tool can be used to understand the unbalanced hardiness profile. The four primary factors that the scale relies on are: (a) thrill and adventure seeking, centralizing around the desire to engage in activities and outdoor sports that involve an element of danger; (b) experience seeking, encompassing a broad variety of inner experience gained by art, music, travel, drugs, or an unconventional lifestyle; (c) disinhibition, consisting of behaviors that are hedonistic, extroverted, or wild such as gambling, extreme variety in sexual life, or uninhibited parties; and (d) boredom susceptibility, involving a dislike of routine and restlessness towards monotony, dull people, and repetition (Zuckerman, Bone, Neary, Mangelsdorff, & Brustman, 1972; Zuckerman et al., 1978).

In sum, Zuckerman defined sensation-seeking behaviors as those that fulfill the "need for varied, novel, and complex sensations and experiences and the willingness to take physical and social risks for the sake of such experience" (Zuckerman, 1979, p. 10). Zuckerman (1979) chose the word *sensation* to focus more heavily on the effects of external stimulation as a primary reinforcer and the term *seeking* to emphasize the active nature of the trait (pp. 10–11).

As far as elements of the study, beyond the independent and dependent variables, the group that comprised government agents who enforce policy and law should be identified. For purposes of this study, this group is anyone who works or has worked in some capacity enforcing policy and law for any level of the government. Law and policy

enforcement includes two larger categories: (a) federal and (b) state and local. Feder

comprises activities such as corrections, investigatory roles, police response and patrol,

court operations, inspections, criminal investigation and enforcement, and security and

protection. To date, there are 65 federal agencies in the United States and 27 Offices of

Inspector General that perform these functions in various capacities. For this study, active

and separated government agents enforcing policy and law can have experience from any

federal agency, including the military. State and local includes professional activities

such as corrections, investigatory roles, police response and patrol, court operations,

inspections, criminal investigation and enforcement, and security and protection.

Assumptions

Researchers must make assumptions to create quality studies. The most prominent

premise of this research was that response bias would be minimal. Respondents were

willing participants and were not being forced to participate. Due to the integrity of the

study and data results, there is a supposition that all participants were informed and

willing to partake in the study and that the surveys were administered, with results

interpreted, in a fashion that mirrors the intentions of those who designed these scales.

Scope and Delimitations

The specific aspects of the research problem addressed in this study focus on

understanding how coping styles and professional quality of life relate to various levels

of hardiness and resilience among government agents who enforce policy and law. Other

researchers have examined the limitations of professional quality of life facets and coping

skills, focusing on the manifestation of PTSD, addiction, and suicide among individuals

in compromised states of mental health (Marmar et al., 2006; Galatzer-Levy et al., 2014;

Bacharach et al., 2008; Gill et al., 2014; Pietrzak et al., 2012; Brouneus, 2014; Engel et

al., 2014; Nash et al., 2014; Possemato et al., 2014; Schultz et al., 2014; Cukor et al.,

2011). While these aspects are essential to mental health, they are also complex, with few

consistent solutions among practitioners and researchers. It was beyond the scope of this

study to inspect the mental health status of government agents involved in treatment for

work-related or personal trauma that has led to a classifiable affliction. Rather, I

examined typical enforcers of law and policy by focusing on the relationship between

professional quality of life facets and mental fortitude.

The population in this study may not be representative of all policy and law

enforcers, possibly creating an issue of external validity. This investigation encompasses

active and separated government agents from state, local, and federal forces (i.e.,

military, corrections, uniformed policing divisions of federal agencies, special agents,

investigators, etc.) in the United States with a probable convenience sample from the

Eastern portion of the nation and the New England area. The belief is that the rigorous

standards government agents endure to attain their position are similar to identical

throughout the United States, regardless of local, state, or federal processes. Further,

there is an assumption of similarity regarding advanced training to respond to emergency

situations (i.e., car accidents, fires, riots, etc.), investigatory responsibilities and

environments, domestic and legal affairs, criminal infractions, natural disasters, security

and protection details abroad and at home, evacuations/safety concerns, and terrorist attacks.

As for theories not included in this study, there were a few discounted from further examination. I decided to minimize the role of research related to individuals' likelihood of developing addiction and PTSD because the body of literature regarding studies of this nature is saturated (Marmar et al., 2006; Galatzer-Levy et al., 2014). The belief is that fractured mental health can bias hardiness and resilience results (Thomassen et al., 2018; Treglown, Palaiou, Zarola, & Furnham, 2016). Theories regarding job satisfaction other than the professional quality of life theory were also not chosen for further examination because job satisfaction universally has no set definition (Cerney, 1995), unlike professional quality of life. Theories also involving physiological responses to stress were excluded as a means to analyze resilience and hardiness relationships due to the mildly invasive nature of obtaining samples and the costs associated with investigating samples.

Theories related to hardiness, resiliency, compassion, and coping were used to increase the study's generalizability among helping professions. Nearly all studies involving hardiness, compassion, coping, and resiliency theories pertain to individuals serving in helping professions. Outside the United States, the investigation may also have a level of generalizability due to the similar roles, stressors, and work environments of government agents throughout the world. The scope and limits of this generalizability can depend on the nation. For example, Israel has policies whereby all citizens are trained in

preparedness tactics from an early age (Greenhill, 2019). Israeli citizens continue to engage in mandatory actions as adults in the military, with some exceptions for mandatory service (Levush, 2019). Other countries also promote preparedness training and community-preparedness practices to create resilience and hardiness among citizens (European Commission, 2019).

Regardless of the possible achievement of generalizability with populations abroad, the need for hardiness and resilience among U.S. government agents enforcing policy and law is critical. The United States has been plagued with a rise in terrorism, security breaches, clashing opinions regarding policy and laws, and mixed receptions from communities regarding illegal immigration, and the Blue Lives Matter and Black Lives Matter movements (Klausen et al., 2016; McClain, 2016; Elinson, 2016). Depending on the level of hardiness and resilience a person enforcing policy and law possesses, it would not be unlikely for compassion fatigue to become problematic as work-related stressors increase and expand. However, not all government agents succumb to stressors and some maintain a steady demeanor due to high levels of resilience and hardiness. This occurrence needs more exploration with a goal for future interventions, training, and recruitment practices to help create resiliency, hardiness, compassion satisfaction, and healthy coping.

Limitations

Many previous researchers have examined mental health, professional quality of life, hardiness, and resilience through quantitative means. While quantitative methods

allow for data to have a more concrete and measurable value, the personalized meaning behind data can become lost using narrow questions, as opposed to broader open response questions. The consequence of narrowing research questions using a survey associated with a scale, as done in quantitative studies, is that participants' answers may not necessarily align well with the selection of choices available. Thus, the questions and solicited answers from these types of statistical studies may not reflect the actions and thoughts of respondents entirely, as opposed to a more personal response from participants garnered by qualitative research.

The open-ended questions in qualitative studies allow respondents to use their own words and examples (Creswell, 2013). By employing quantitative methods in this research on the relationship between professional quality of life and mental fortitude, the point of view of participants was limited as there was no opportunity for them to freely explain their thoughts and feelings regarding experiences measured beyond the questions asked in the surveys. With this said, a more in-depth meaning is unable to be gained from respondents' behavior and the rationale behind specific actions and thoughts. Similarly, it is difficult for a quantitative study to understand the extent and emphasis respondents may associate with a progression of training or personal experiences that they believe helped to strengthen resilience, hardiness, and coping skills over time, as well as how such interventions relate to professional quality of life—for example, whether a personal experience or training was valuable to building resiliency or learning how to develop coping skills or garnering compassion satisfaction, and if so, to what extent. However, a

benefit of the quantitative nature of this study is that it is less personally invasive and will help keep responses more anonymous and less tied to individuals.

Of course, research limitations of one type or another could potentially impact results. For example, until respondents complete a demographic survey, it is difficult to determine the extent that the sample pool is different from similar policing agencies throughout the nation. However, there is a chance that due to the rigorous demands of conducting policing work, a percentage of employees chosen from these organizations have several years of policing experience gained from either serving in the military or from performing policing work for a time in rural, urban, or suburban areas. The likelihood of this occurring is quite high, mainly due to many hiring processes giving preference to veterans and those individuals with previous policing experience. Whether the extent of this possibility is expressed more in the Eastern or New England areas of the United States is difficult to determine.

There is a possibility that the organizational structure of government agencies that employ individuals to enforce policy and law can have an impact. East and New England state and local government agencies may create unique patterns for recruitment and retention, especially those serving urban areas. The impact of Massachusetts and New York both being commonwealths and possessing a major city can also make a difference. However, civil service exams and the tendency of many federal agencies to move their employees around the nation may even out some bias. For example, active duty military personnel can come from anywhere in the nation and reserve military forces can be

within a driving distance of approximately three hours or more. Individuals serving in

federal investigator and special agent roles may also be from other areas of the nation due

to the rotation of duty stations.

Significance

Government agents enforcing policy and law can be exposed to traumatic and

stressful situations repeatedly throughout their careers. As individuals representing

organizations that respond to community incidents, there is increasing pressure for these

individuals to consistently exhibit physical and mental fortitude (Papazoglou, 2013;

Miller, 2005; Marmar et al., 2006). Unfortunately, unspoken professional and personal

behavioral requirements have established organizational cultures with little room to

adequately address the mental health needs of these agents (Miller, 2005; Andersen et al.,

2014). To combat this issue, a focus has developed on coping and resiliency and

hardiness skill building training among government employees enforcing policy and law.

By addressing mental health in a more preventive manner through practice, hardiness and

resiliency can be built to strengthen psychological fortitude. This study sought determine

how coping practices and professional quality of life facets are related to resiliency and

hardiness characteristics among government employees who enforce policy and law, to

guide practitioners in endeavors to strengthen mental fortitude.

According to the U.S. Department of Justice's Office of Community Oriented

Policing Services (2012), the mental health of police officers continues to be a significant

issue. Stephens, Fiedler, and Edwards (2013) stated that the "lack of research regarding

officer wellness is a growing concern in the law enforcement community" (p. 4). From police chiefs across the nation plagued with rising suicide rates among their officers to burnout rates and substance abuse issues (Bergeron, Biziak, & Krause, 2005), there is little doubt that current agency training is failing to protect and safeguard the well-being of many officers.

According to the National Institute of Justice (2004), law enforcement officers are one of only a few positions that impact public safety that does not have working restrictions and standards in place to reduce fatigue: "law enforcement suffers when officers are fatigued due to overtime, shift work, court appearances, and the emotional and physical demands of the job" (p. 13). Gill et al. (2014) supported the idea that fatigue can cause negative mental health consequences. Their research highlights, through the use of military personnel, that prolonged periods of fatigue can compound psychological health ailments if left untreated, weakening the overall well-being, resiliency, hardiness, and coping abilities of individuals (Gill et al., 2014).

This study aims to identify professional quality of life facets and coping styles that relate to specific levels of resiliency and hardiness among government agents who enforce policy and law, to inspire future studies on mental fortitude and professional quality of life. Perhaps the knowledge gained from this study's results can be beneficial to the recruitment of government personnel and stakeholders with vested interests in designing training programs to strengthen hardiness and resilience. Potential positive implications of such endeavors included a decrease in turnover rates and days off

associated with burnout, fatigue, and substance abuse, thereby improving retention and reducing agency costs. The impact of these savings is difficult to measure, as many government agencies fail to examine turnover rates in the long-term, often focusing only on short-term costs, perhaps because it is uncommon for there to be a budget line item associated with turnover (Wilson, 2012, p. 333).

Public safety as a profession exhibits challenges in retention nationwide, beyond the indirect and direct expenses impacting morale, staffing, and budgets (Kavetski 2016; Wareham, Smith, & Lambert, 2013). These costs raise many important questions regarding the relationship between mental fortitude and professional quality of life. In a national survey of 500 public safety employees, 85% of respondents reported believing public safety departments have high turnover rates among employees (Kavetski, 2016). Further, 42% of respondents cited benefits and pay as being a cause for turnover, and 30% attributed high turnover to poor leadership and lack of direction from upper management (Kavetski, 2016, para. 3). Freeman, Slifkin, and Patterson (2009) reinforced these statistics in their cross-sectional survey of local EMS agency directors, finding that 55% of agency directors view employee retention as a problem and 37% of directors seeing recruitment as a problem.

Gaining more insight into the link between professional quality of life and psychological fortitude can have a positive impact on organizations and communities. Studies on this relationship can decrease tangible and intangible costs associated with public sector goods for communities. Harder to measure expenses can range from the

impact that work-related stress has on families or the toll it takes on individual's personal life (Wang, Chan, Shi, & Wang, 2013). Consequences associated with these elements can prompt quantifiable costs such as those associated with absenteeism and training new workers in response to high turnover rates. Expenses of this nature are covered by tax dollars, cutting into the overall budgets of government agencies that could allocate monies toward more productive training endeavors or necessary equipment and infrastructure improvements.

Acquiring data to predict traits that contribute to developing and enhancing resiliency and hardiness skills can be beneficial to helping professions overall. Careers that involve working with the public, especially those that place workers in the presence of individuals in traumatic situations, need to develop the mental fortitude of employees. This preparation not only provides for a better response and care for victims, but it also increases the quality of life for all affected. Skills gained through training can benefit responders, healthcare workers, mental health professionals, and volunteers who assist these responders can benefit from training that uses data to design methods for guarding mental health.

<div align="center">**Summary**</div>

According to Pulido (2007), mental health ailments acquired through professional stressors and trauma are a serious matter that can negatively impact lives. People who work in helping professions are not immune to the consequences of SSD and PTSD (Stamm, 2002, 2016; Figley, 1995). Like other populations, government workers

enforcing policy and law, who experience trauma or chronic work-related stress, can exhibit positive or negative health outcomes (Miller, 2005; Andersen et al., 2014; Andersen, Papazoglou, Arnetz, & Collins, 2015; Papazoglou, 2013; Marmar et al., 2006). Some exhibit resiliency, hardiness, compassion satisfaction, compassion fatigue, burnout, posttraumatic stress, or secondary traumatic stress, depending on personal coping mechanisms. The results of this study of these workers can have significant implications for social change, with the potential to inspire future studies focused on increasing professional quality of life and mental fortitude.

The quantitative nature of this research and its use of reliable and valid scales allows for the measurement data on the feelings, thoughts, opinions, convictions, and experiences of participants. Understanding what respondents are experiencing allows for initiatives and partnerships to replicate and capitalize on strengths. Agencies can use this data to provide in-house or closely networked treatment options for government employees. As Bergeron et al. (2005) pointed out, people are more apt to seek treatment for mental health issues when the obstacles and consequences of using such opportunities are low. The direct benefit of this is the alleviation of psychological health aliments that cause damage to the professional and personal aspects of government workers' lives.

More awareness regarding mental health and how to create and maintain resiliency and hardiness enhances the well-being of employees and can benefit employee situations in the field. According to Booth (n.d.), an expert on strategic business planning for public safety, police, and fire training, not only does the first responder field hold a

stigma against its members, but its misunderstanding of mental health ailments unnecessarily creates obstacles for those who would seek help. By pinpointing the existence of health ailments anonymously among government policy and law enforcers, better training initiatives can be put in place to help individuals gain mental fortitude and enhance professional quality of life. The consequence of these improvements can potentially increase the resiliency and hardiness of others, especially the public that can be traumatized or retraumatized by inadequate responses.

According to the North American Fire Fighter Veteran Network (2014), many mental health stigmas exist in the helping professions. Leaders and managers who keep health stigmas in place are damaging not only the individuals in their field but also the reputation of their industry. For those involved in public safety, organizational missions often dictate that they provide a service to their respective communities. As organizations primarily found within the training sector, these entities are subject to public scrutiny by default because public dollars fund them. Helping to promote resilience and hardiness among government policy and law enforcers not only satisfies the organizational needs of agencies but benefits communities and families.

Chapter 2: Literature Review

Introduction

According to the U.S. Department of Justice Office of Community Oriented Policing Services (2014) in conjunction with the attorney general and the Bureau of Justice Assistance, the health and wellness of employees is a top priority for public safety. The psychological health of government policy and law enforcers is vital, as the unfortunate consequence of untreated stress and trauma can lead to suicide or stress disorders such as STSD and PTSD. As the Office of Community Oriented Policing Services (2014) points out, "an officer in poor health … jeopardizes his/her safety and the safety of fellow officers and members of the community" (Physical Health section, para. 1). Therefore, it is critical that employers of these public servants gain more insight on methods to help support physical and mental health among workers. The massive influx of former military personnel into law and policy enforcement positions further compounds this need to reinforce healthy practices and provide quality resources to address unforeseen needs (Office of Community Oriented Policing Services, 2014).

As a result of overlapping membership and behavioral patterns, current researchers are interested in learning more about coping, professional quality of life, resilience, and hardiness among people serving in policy and law enforcement fields (Andersen, Papazoglou, Koskelainen, & Nyman, 2015; Galatzer-Levy et al., 2014; Stanley, Hom, & Joiner, 2016) especially among first responders (Benedek et al., 2007; Kleim & Westphal, 2011; Rutkow et al., 2011; Stellman et al., 2008), and military

members (Bartone et al., 2015; Engel et al., 2014; Nash et al., 2014). For this study, individuals with roles involving the enforcement of law and policy, whether at the state, local, or federal level, have been combined into one category. The costs of poor resilience, hardiness, coping, and professional quality of life have tangible and intangible consequences negative to personal, professional, and community matters. Maladaptive coping with poor problem-solving strategies and unchecked high-stress levels have been found to result in: (a) alcohol and drug abuse (Bacharach et al., 2008; Bartone et al., 2012; Bartone et al., 2015; Schultz et al., 2014); (b) job dissatisfaction (Fortney, Luchterhand, Zakletskaia, Zgierska, & Rakel, 2013; Miller et al., 2009); (c) physical and mental health ailments that can lead to suicide, anxiety, panic attacks, PTSD, dysfunctional coping, self-harm, and other related negative health issues (Andersen, Papazoglou, Arnetz, & Collins, 2015; Cheng, Kogan, & Chio, 2012; Cheng, Lau, & Chan, 2014; Engel et al., 2014; Galatzer-Levy et al., 2014; Steffen & Smith, 2013); and (d) compassion fatigue comprised of burnout and STSD (Adams et al., 2008; Bride, Radey, & Figley, 2007; Flarity et al., 2016; Harr, 2013; Jacobson, 2012; Treglown, Palaiou, Zarola, & Furnham, 2016).

This study focuses on professional quality of life and mental fortitude—specifically, on states of compassion and types of coping practices that yield high and low levels of resilience and hardiness. Multiple studies have shown promising patterns (a) that advanced training and behavior techniques can build resilience and hardiness (Bartone et al., 2015; Flarity et al., 2016; Galatzer-Levy et al., 2014; Johnsen et al., 2014;

Levone et al., 2015; Maynard & Kennedy, 2016; Olatunji et al., 2014; Shaw et al., 2014; Treglown et al., 2016); (b) that more responsive coping methods such as reframing of thoughts and associated strategies are useful toward altering physiological and psychological responses in positive ways (Alter et al., 2010; Aytac, 2015; Brouneus, 2014; Folkman et al., 1986; Lazarus & Alfert, 1964; Speisman, Lazarus, Mordkoff, & Davison, 1964); and (c) that compassion satisfaction is linked to job satisfaction and serves to aid in positive states of physical and mental health (Adams et al., 2008; Andersen & Papazoglou, 2015; Craigie et al., 2016; Decker et al., 2015; Flarity et al., 2016; Fortney et al., 2013; Harr, 2013; Jacobson, 2012; Treglown et al., 2016).

To showcase the major findings that support a study investigating the relationship between professional quality of life and mental fortitude, this study will: (a) reveal the literature research strategy for gathering sources and studies; (b) establish the theoretical framework for the scales and theories of this study; (c) investigate significant findings in a literature review that encompasses the theories and related theories of this study; and (d) summarize the significant findings of the literature review and how the present study will attempt to fill a gap in the literature.

Literature Search Strategy

The following database and search engines were used to obtain literature: Google Scholar, Academic Search Complete, ScienceDirect, ProQuest Central, Political Science Complete, SAGE Premier, ERIC, CINAHL Plus with Full Text, MEDLINE with Full Text, PsycARTICLES, International Security & Counter Terrorism Reference Center,

Military and Government Collection, EBSCOhost eBook Collection, SocINDEX with

Full Text, Ovid, ResearchGate, PubMed – NCBI, and SAGE Open. The following search

terms were used, both alone and in conjunction with each other, to obtain relevant studies

and resources: *hardiness, compassion, police, resilience, compassion fatigue, compassion*

satisfaction, burnout, coping, coping flexibility, stereotype threat, stigma, mental health

stigma, job satisfaction, ProQOL or professional quality of life, dispositional resilience

scale, resilience scale, maladaptive coping, COPE inventory, BriefCOPE, military

shrinkage, decrease military, and *ways of coping*.

      The scope of literature, regarding years researched as well as seminal works and

peer-reviewed resources, was handled as follows. The use of peer-reviewed studies from

databases occurred unless a specific article or author was necessary. The goal of years

searched was often a maximum of 5 years less than the current year. Regularly, years

examined was inconsequential when there was a specific study or group of studies from a

particular author or group of authors. In those cases, a certain author or team of authors

and title or subject topic were in mind for the search. However, sometimes it was more

prudent to use a study older than 5 years when the participant group closely matched U.S.

law and policy enforcers. For instance, U.S. research was given preference if the

participant pool was thought to be generalizable based on the topic (i.e., recruitment,

retention, etc.). Thus, if the bulk of journal articles available within the 5-year timeframe

referenced international policy and law enforcement groups that were not as similar, a

study was preferred that was 6 or 7 years old and referenced U.S. groups.

Seminal authors tended to revolve around the scales chosen for the study and foundational theories. The goal was to investigate as many resources available regarding these authors and to try to obtain research from different authors or author groups that have used their theories. When little current research was available, I used several methods to identify relevant studies and sources. The most recent study available on the topic and its reference list were used as a guide to point to studies. Theories mentioned in the author's or group of authors' literature review from the most recent study available led to further investigation. Terms such as the names of scales or keywords from theories were used to find research that used or referenced these concepts.

Theoretical Foundation

This study on the relationship between professional quality of life and mental fortitude based its theoretical foundation on concepts related to resiliency, hardiness, coping, and compassion satisfaction/compassion fatigue. Examination of these concepts occurred individually. Many of these ideas do not yield from single sources. Some of these elements have a more complicated history and evolution, causing them to involve multiple models and focuses. In this regard, some of these foundational elements have currently grown to include an expansion of factors, as well as a refinement of featured notions. Described below are the specific facets of these theories for this study.

Resilience

According to Luthar, Cicchetti, and Becker (2000), there are variations in the models, definitions, and focuses on resilience studies. Several elements should be kept in

mind when attempting to understand and review research regarding resiliency (Luthar et al., 2000):

> 2. There are variations in the measurement and operationalization for the underlying constructs that comprise resilience. … There is little consensus amongst the central terms in resilience models. … There are discrepancies in conceptualizations, especially regarding resilience being a dynamic process versus it being a personal trait. (pp. 545–549)

Research on resiliency dates to the 1970s and has evolved in several directions since that time (Fleming & Ledogar, 2008). It is challenging to denote a singular seminal resiliency source; instead, multiple influential sources can be argued based on the focus of contribution toward resiliency research. The bulk of resiliency research began with researchers investigating individuals with mental health ailments, such as schizophrenia, later morphing to examine the children of these individuals. Rutter (1985) made significant contributions that serve as foundational work to explore protective factors that keep individuals from developing psychiatric disorders. Werner's (1989) longitudinal studies that used children in high-risk environments found that protective factors can balance out risk factors to create resilience (Fleming & Ledogar, 2008; Luthar et al., 2000). My research for this study focused on elements of resilience related to the development of the resilience scale by Wagnild and Young (1993, 2009). The resilience scale measures resilience by focusing on five interrelated components: (a) perseverance,

(b) meaningfulness, (c) equanimity, (d) self-reliance, and (e) existential aloneness (Wagnild & Young, 1993, p. 167; Wagnild & Young, 2009, p. 106).

Hardiness

In this study, I used Bartone's DRS 15-R to assess the three facets of hardiness (i.e., control, commitment, and challenge), theories on hardiness yielded from the work of Kobasa (1979). To understand why some individuals in highly stressful environments develop an illness while others do not, Kobasa's study on the relationship between health, personality, and stress resulted in seminal strides for hardiness theories. Kobasa determined that hardy individuals exhibiting control, commitment, and challenge were healthier than individuals who did not show such traits. Fundamentally, hardy persons believe they can control or influence the events in their lives. These individuals also feel deeply involved in or committed to activities in their lives and view change as an exciting challenge that aids in personal development (Kobasa, 1979, p. 3).

According to Kobasa (1979), hardiness is the personality difference that causes one individual to respond poorly to stress and become ill, whereas another's health may not be impaired while reacting to the same stressful stimuli (p. 3). To assess hardiness, Kobasa employed the following hypotheses:

    3. Among persons under stress, those who have a greater sense of control over what occurs in their lives will remain healthier than those who feel powerless in the face of external forces. … Among persons under stress, those who feel committed to the various areas of their lives will remain healthier than those

who are alienated. … Among persons under stress, those who view change as

a challenge will remain healthier than those who view it as a threat. (pp. 3–4)

To prove the validity of her hypotheses, Kobasa investigated stress, illness,

control, commitment, and challenge. To assess stress and illness, Kobasa used the

schedule of recent life events, the social readjustment rating scale, and the seriousness of

illness survey. Based on the results of a pilot study, Kobasa chose to add additions to the

first two scales. To investigate control, Kobasa used four instruments: The internal-

external locus of control scale, the powerlessness versus personal control scale of the

alienation test, the nihilism versus meaningfulness scale of the alienation test, and the

achievement scale of the personality research form. To measure commitment, Kobasa

used the alienation test with an emphasis on the alienation versus commitment scores and

the role consistency test. To assess challenge, Kobasa used six tools: The preference for

interesting experiences scale, the vegetativeness versus vigorousness scale of the

alienation test, the scale of security orientation, the need for cognitive structure scale of

the personality research form, the need for endurance scale of the personality research

form, and the adventurousness versus responsibility scale of the alienation test (pp. 5–6).

Kobasa (1979) had contacted 837 executives by mail to participate in her study, of

which 670 individuals completed testing materials. From this group, 86% were high

stress, low illness, and 75% were high stress, high illness. Kobasa chose 40 respondents

randomly from each pool, for a total of 80, to participate in the study, and used 81

different subjects for cross-validation purposes (p. 6). Kobasa determined that high stress,

low illness individuals can be distinguished from high stress, high illness individuals. The difference found in their "sense of commitment to (or lack of alienation from) self, their sense of vigorousness (as opposed to vegetativeness) about life, their sense of meaningfulness (as opposed to nihilism), and their internal (as opposed to external) locus of control" (p. 8). Based on these results, Kobasa claimed that hardy individuals possess the following characteristics:

4. (a) The belief that they can control or influence the events of their experience, (b) an ability to feel deeply involved in or committed to the activities of their lives, and (c) the anticipation of change as an exciting challenge to further development. (p. 3)

In summation, Kobasa's study provides substantial evidence that hardy individuals possessing characteristics of control, commitment, and challenge continue to remain healthy when faced with stressors than individuals that do not possess such traits.

In agreement with the work of Kobasa (1979), Bartone's (1995, 2007) research continues to find that hardiness interacts with stress to produce health outcomes. Finding nearly the same conceptual results as Kobasa (1979), Bartone (2007) attested that "hardiness is a personality style associated with resilience, good health, and performance under stressful conditions" (p. 943). From his research findings, Bartone created a shortened DRS 15-R that this study will use. This version of the scale is from 1990s research gathered and tested against Army Reservist and Army Special Forces candidates from the Gulf War. The regression analysis scores from the shortened version continue to

support the fact that those scoring high on the measure are more likely to succeed in stressful and rigorous situations, with low hardiness scores predicting for symptoms associated with more negative conditions such as depression (p. 3).

      Unbalanced hardiness profiles. Researchers support the idea that there are unbalanced hardiness profiles that prove significant in understanding the relationship between physical and mental health with hardiness (Johnsen et al., 2014; Sandvik et al., 2013). Within this context, a balanced hardiness profile consists of being high or low in all three facets of hardiness: commitment, control, and challenge. For unbalanced patterns, there are two that are generally recognized: rigid control and sensation seeker. A person that is labeled rigid control for hardiness will exhibit medium to high commitment, medium to high control, and low challenge. A person categorized as a sensation seeker for hardiness will score low commitment, low control, and high challenge (Sandvik et al., 2013; Johnsen et al., 2014).

      While there is little literature surrounding Rigid Control, there is a healthy body of scientific works regarding Sensation Seeking, a term coined by Marvin Zuckerman in 1961 when he was investigating sensory deprivation (Zuckerman, 1979, p. xi; Zuckerman, Bone, Neary, Mangelsdorff, & Brustman, 1972; Zuckerman, Eysenck, & Eysenck, 1978; Zuckerman & Link, 1968). Zuckerman (1979) recounts his research interests in the area began in the 1950s, as many researchers were investigating the need for individuals to engage in behaviors that resulted in optimal levels of arousal. According to Zuckerman, the existing body of literature at that time lays on a foundation

that broadly examines sensation seeking motives, dating back at least a century (p. 7).

The original Sensation-Seeking Scale (SSS) was developed to provide an operational

structure to Wundt's 1873 Optimal Level of Stimulation (OLS) construct and the

subsequent Optimal Level of Arousal (OLA) theories that yielded from it during the

1950s and 1960s. The Sensation Seeking Scale was created to explain the curvilinear

relationship between intensities of stimulation and affective reactions (Zuckerman, Kolin,

Price, & Zoob, 1964; Zuckerman, Eysenck, & Eysenck, 1978, p. 139).

The initial Sensation Seeking Scale (SSS) that Zuckerman created to measure

sensation seeking began in 1964, and like other scales has had many tweaks to get to its

current version (SSS-V or Form V) but remains fixed in its purpose (Zuckerman, 1979;

Zuckerman, Bone, Neary, Mangelsdorff, & Brustman, 1972; Zuckerman & Link, 1968;

Zuckerman, Eysenck, & Eysenck, 1978). The scale and conception behind the traits it

investigates are a favorite of several researchers for a myriad of inquiries, especially

studies seeking to define personality (Zuckerman, 1979, p. xi). As Zuckerman (1979)

recounts in his investigative journey:

5. The idea of the sensation-seeking trait emerged from my attempts to provide a

    framework for the data on individual differences coming out of experiments

    on sensory deprivation. The first definition of the attribute was based on factor

    analyses of a broad range of rationally constructed items, but the original

    construct and items were also influenced by less scientific observations of

    patients, friends, children, pets, and even myself. There was a need to give a

definition to a range of behavioral phenomena that defied classification and

explanation within existent theories. (p. 3)

Once Zuckerman and his colleagues had designed the current version of the

sensation seeking scale (SSS-V or Form V), the traits measured on the scale had achieved

cross-cultural and cross-sex stability (Zuckerman, Eysenck, & Eysenck, 1978). The four

primary factors that the instrument relies on consists of: (a) thrill and adventure seeking,

centralizing around the desire to engage in activities and outdoor sports that involve an

element of danger; (b) experience seeking, encompassing a broad variety of inner

experience gained by art, music, travel, drugs, or an unconventional lifestyle; (c)

disinhibition, consisting of behaviors that are hedonistic, extroverted, or wild such as

gambling, extreme variety in sexual life, or uninhibited parties; and (d) boredom

susceptibility, involving a dislike of routine and restlessness towards monotony, dull

people, and repetition (Zuckerman et al., 1972; Zuckerman, Eysenck, & Eysenck, 1978).

In sum, Zuckerman defined sensation seeking behaviors as those that fulfill the

"need for varied, novel, and complex sensations and experiences and the willingness to

take physical and social risks for the sake of such experience" (Zuckerman, 1979, p. 10).

The word *sensation* was chosen by Zuckerman to focus more heavily on the effects of

external stimulation as a primary reinforcer, while *seeking* emphasized the active nature

of the trait (Zuckerman, 1979, pp. 10-11).

Similar to the sensation seekers that Zuckerman identifies (Zuckerman, 1979;

Zuckerman & Link, 1968; Zuckerman et al., 1972; Zuckerman et al., 1978), Johnsen et

al. (2014) and Sandvik et al. (2013) view sensation seekers as those thriving with novel, varied, and complex sensations. It is believed these feelings help sensation seekers to maintain optimal levels of arousal that may be greater than those of non-sensation-seekers. The sensation seeker is presumed to be less conforming to external constraints and more sensitive to inner sensations (Zuckerman et al., 1972, p. 308). This profile emphasizes intuition and feeling over conventional reality, allowing tolerance for irrationality (Zuckerman et al., 1972, pp. 318-319). Sensation seekers are thrill-seeking, impulsive, extroverted, antisocial or nonconformist, and orientated towards body sensations, but less likely to be psychiatrically disturbed than non-sensation seekers (Zuckerman & Link, 1968, p. 421). Low sensation seekers enjoy predictability, social affiliation, and order in their environment, going so far as to give into others to maintain stability. High sensation seeker contrast these behaviors by being labile and impulsive, preferring change and independence from others – such persons enjoy change, autonomy, and exhibitionism, not necessarily needing nurturance, affiliation, or deference (Zuckerman & Link, 1968).

As previously stated, the hardiness studies of Johnsen et al. (2014) and Sandvik et al. (2013) found similar unbalanced hardiness profiles and personality characteristics amongst respondents. The rigid control hardiness profile, exhibiting medium to high commitment and control with low challenge, denoted a person with an inability to manage stress as successfully as other groups, especially balanced ones such as high hardy and low hardy. The individuals in this subset were found to have more reactive and

potentially unhealthy immune-neuroendocrine responses than their balanced peers when exposed to stressful conditions (pp. 707-712). Sensation seekers fared better than their counterparts, exhibiting low psychological distress and a high quality of life (Johnsen et al., 2014). More hardiness research regarding sensation seekers is necessary to understand better how the motivations of this profile impact hardiness and health (Johnsen et al., 2014).

Coping

The Coping Orientation to Problems Experienced (COPE) Inventory Scale by Carver, Scheier, and Weintraub (1989) and the BriefCOPE (Carver, 1997) are rooted in theories related to stress. These approaches examine different coping practices such as problem-focused, emotion-focused, venting, avoidance, and other methods typically deemed inefficient and unhealthy. The foundation of both the COPE Inventory and the BriefCOPE rests in Lazarus, Folkman, and behavioral self-regulation models from previous works Scheier and Carver collaborated on in 1981, 1983, 1985, and 1988 (Carver, Scheier, & Weintraub, 1989). The most significant contributor to the aspect of coping that Carver et al. (1989) and Carver (1997) comes from Susan Folkman and Richard Lazarus and their work on appraisal, stress, and coping. However, the basis for these theories on stress and coping associated with Folkman and Lazarus, specifically those regarding cognitive appraisal, arise from the work of Magda Arnold and her research on emotions that yield from stressful experiences.

Arnold's early work on theories related to emotions serves as a foundation for cognitive appraisal theories. Arnold (1945) contended that the feelings of fear, anger, and excitement correspond with three different physiological states. These feelings can have noticeable psychological effects during or after an emotional stimulation depending on the autonomic reactivity of a person and the intensity of the emotional experience. These emotions can also be observable in persons at different points in time; however, emotions such as fear and anger do not have emergency functions (p. 46). Feelings of fear and anger "represent obstacles to efficient action, the former by short-circuiting too large an amount of excitation into the parasympathetic system, the latter by inundating the sympathetic system" (Arnold, 1945, p. 47). The differences in the experience of the emotions of fear, anger, and excitement have allowed subsequent researchers to build their theories and studies.

Another seminal work shaping coping appraisal theories comes from Speisman et al. (1964). The researchers attested that Arnold's work confirms "an emotion implies an evaluation of a stimulus as either harmful or beneficial" (p. 367). Developing on this notion, Speisman et al. contended that "the same stimulus may be either a stressor or not, depending upon the nature of the cognitive appraisal the person makes regarding the significance for him" (p. 367). The researchers determined that the psychological stress a person experiences is not indicative of the type of stimulus but the manner a person interprets or appraises that stimulus. The results of this were found using a silent subincision film with a tribal ritual involving incisions on a boy to showcase his

transition into adulthood. The film was shown four times with three different themed tracks (i.e., trauma, denial, and intellectualization) and one silent experience to airline professionals and undergraduate psychology students. Speisman et al. found that if a stimulus is framed and interpreted threateningly, the level of psychological stress will increase. The inverse of this is also true, with framing and interpretation that is non-threatening causing appraisement of mental stress to be less (p. 378). Therefore, a stressor can be positive or negative depending upon the cognitive appraisal given; conversely, two or more people may disagree on a cognitive appraisal and experience psychological stress from a stimulus that others do not.

Using the themed soundtracks and the silent version of the film, Speisman et al. (1964) determined that there was another layer to the amount of stress assigned to a stressor. Data revealed that the soundtracks played to accompany the subincision film heightened or diminished the amount of stress the respondent was experiencing. For instance, stress responses ranged most significant to least amongst participants in the following fashion: trauma track, silent version, and defensive (i.e., denial and intellectual) track (pp. 370-377). It is not surprising that the defensive soundtrack served to diminish the amount of stress that participants experienced while viewing the film, as the track helped shape the viewers framing of the subincision process.

The use of soundtracks for the subincision ritual allowed Speisman et al. (1964) the ability to manipulate the framing of the event, and increase or decrease the amount of stress respondents experienced. For example, the element of stress was reduced by the

intellectualization of the subincision process, because it framed the event as a scientific one deserving of detachment, confirming the principles of the ego-defense theory. While the denial soundtrack decreased stress because it classified the ritual as a joyous, honorable passage into adulthood and denied the harmful aspects of the process, establishing the principle of the short-circuiting of a threat (Lazarus & Alfert, 1964, p. 196; Speisman et al., 1964). Similarly, the threatening soundtrack reinforced the stress that respondents experienced by witnessing the subincision ritual.

To understand the protective nature that short-circuiting a threat creates, Lazarus and Alfert (1964) used the results and methods of the Speisman et al. (1964) experiment to create a similar study exploring the relationship between the altering of cognitive appraisal and the manipulation of a threat. Using 69 male psychology and sociology students from the University of California, Lazarus and Alfert (1964) utilized three different forms of delivering the subincision film: (a) seeing the movie without any introductory statements or any commentary given for its 17-minutes duration; (b) placing a two-minutes denial-and-reaction-formation introduction before the subincision film, along with denial commentary condition throughout the movie; and (c) providing a lengthy introduction, but no commentary during the silent viewing of the film. The opening in this version was termed the denial orientation condition script since verbs were changed to match the appropriate tense with *you will see*, rather than *you see*. This new text became a combination of the denial-and-reaction-formation script with the denial commentary condition script.

To gather data all respondents underwent a group personality test and were randomly assigned to view one version of the subincision film. Physiological measurements were taken of respondents' skin conductance and heart rate continuously throughout the viewing of the movie. Personality was examined by the MMPI (Minnesota Multiphasic Personality Inventory) and scored using the suppressor, denial, repression, and repression-sensitization scales, which are all related to the repressive personality character structure. Behavioral data was also gathered from the respondents using the following three methods: (a) the Nowlis adjective check list of mood that scores for *aggression, pleasantness, concentration, social affection, egotism, anxiety,* and *depression*; (b) tension rating scores derived from the difference between two tension scales containing five points: one scale to rate normal tension and another to measure stress during the film; and (c) the ranking of 10 film impression statements that respondents felt they could recall a month after viewing the film. Assertions were designed by the researchers to include concepts of *distress, intellectualization, repression, denial and reaction formation*, and *realistic description* (pp. 196-197).

From the data, Lazarus and Alfert (1964) found that presenting all the associated denial commentary before viewing the subincision film was the most successful form of reducing both physiological and psychological stress. However, the researchers found that the ability of the narrative to minimize stress reactions, and the actual amount of stress reaction reduction realized, was dependent upon personality (pp. 198-203). As Lazarus and Alfert explained, the success of all denial commentaries found at the

beginning of the viewing allows time for the participant to become inoculated towards

the threat. Expressly, the participant mentally had time to process the information from

the onset, allowing the creation of a baseline judgment of the material. This process is

different from watching the denial orientation at the beginning, and from viewing the

other denial commentary while seeing the subincision film, because there is not enough

time to process the subsequent denial statements to produce a substantial stress reduction.

As the researchers point out, all the denial commentary before the subincision clip acts to

create preparedness that can influence beliefs, as well as the interpretation of the event

considered later (p. 203). However, these results must be viewed in context, for high

deniers benefitted more than low deniers and were able to reduce stress by a more sizable

amount (pp. 204-205). The researchers reasoned that this is most likely the case due to

lower deniers "not readily accept[ing] the denial frame of reference, …[causing them to

not] readily gain from it in the reduction of stress" (p. 204). Thus, the impact of

communication used to decrease stress, that will subsequently cause the reduction of a

perceived threat, must be compatible with the disposition or personality of a person to be

useful (p. 205).

Folkman et al. (1986) furthered this investigation into stress and coping by

examining the relationship between cognitive appraisal, coping processes, and short-term

outcomes using an intraindividual approach that compares the same person five times

across different stressful encounters. Unlike the assessment of some of the earlier

research regarding stress and coping, Folkman et al. are very concerned with specific

definitions in their study that help to frame coping terms, setting their work apart from previous studies that only see the practice as static and trait-based (p. 992). For example, the researchers ascribed the following terms with these definitions to showcase how coping styles can be fluid and change based on the characteristics of each stressful encounter:

Primary appraisal focuses on whether a person feels he has anything at stake when coping with and encountering a stressor. The assessment of the stressor's impact includes questions related to the risk and harm to self-esteem, health, wellbeing, commitments, goals, and values.

Cognitive appraisal focuses on whether a person perceives an encounter with a stressful environment as relevant to his wellbeing, and if so, how it is relevant.

Secondary appraisal evaluates a potentially stressful environment to gauge whether any actions can improve or harm the chance for a positive outcome. This evaluation involves questions related to the potential to alter or accept a situation, seek more information, and delay from acting to avoid impulsive or counterproductive outcomes.

Coping is seen as a dynamic process that allows a person to change personal cognitive and behavioral elements to adjust to internal and external demands, especially when such claims are perceived as emotionally or physically taxing and stressful. Under this premise, coping has three distinct components:

It is *process oriented*, in that it focuses on a specific stressful encounter and can alter as that event unfolds and the individual's actions, thoughts, and perceptions change to respond to new information. The coping method is unique to the situation, and from encounter to encounter; it is not necessarily a static pattern.

It is *contextual*, in that resources available to manage a stressful encounter determine the coping method chosen, as well as a person's appraisal of the demands regarding the event. The characteristics of each stressful episode as perceived by the person, and the alleged responsibilities linked to each the action, will ultimately shape the coping method chosen.

It establishes *no a priori assumptions* about whether a response to a stressful encounter is considered positive or negative. Expressly, the researchers define coping as merely managing the demands of a stressful event. There is no judgment placed on the coping method the actor uses to respond, nor any opinion set on how the actor perceives demands and available resources regarding the incident. Thus, the researchers do not believe in labeling any coping method as inherently "bad" or "good" (pp. 992-993).

Lastly, *primary* and *secondary appraisal* are overlapping, yet different processes. These elements come together to help the actor determine the level of threat and challenge contained in an event. Ascribed challenges can be seen as positive or negative by the actor, depending on the context, demands, and resources regarding the stressful encounter; thus, challenges are also situation specific and can impact the coping method chosen (pp. 992-993).

The majority of scientific interpretations on the efficiency of particular coping methods for managing stress come from Susan Folkman and Richard Lazarus. The most seminal of their findings on coping mechanisms is from 1984, involving the differences in problem-focused and emotion-focused coping strategies. Lazarus and Folkman (1984) determined that problem-focused coping methods are effectively employed when actors feel that they can solve a stressful problem and can decrease the amount of stress in an environment. This is the opposite of emotion-focused coping strategies, which are employed when individuals feel they are unable to solve a problem, forcing them to address the thoughts and feelings caused by the stress. This implies that problem-focused coping strategies attempt to reduce the effects of the stressor, considering the individual having more control over it. Depending on the nature of the stressor, one coping method can be preferred over than the other for more effective managing.

Through various research collaborations, seminal researchers professed that the level of stress and its interpretation relies on personality and its impact on primary appraisal, secondary appraisal, and coping (Arnold, 1968; Lazarus & Alfert, 1964; Speisman et al., 1964). Carver, Scheier, and Weintraub (1989) created the COPE Inventory to serve as a multidimensional method to assess responses to stress, utilizing the tool to measure and categorize participants' coping responses during a stressful episode (pp. 271-280). This study employed the shortened form of this survey known as the BriefCOPE (Carver, 1997).

Professional Quality of Life

The professional quality of life theories focusing on compassion satisfaction, compassion fatigue, burnout, and secondary traumatic stress yield from Figley (1995) and Stamm (2002, 2010). According to Figley (1995), *compassion fatigue*, comprised of secondary traumatic stress and burnout (Stamm, 2002, 2010), is the emotional exhaustion experienced when helping a suffering person. This type of fatigue is the result of chronic exposure to distressed individuals that can increase when a helper perceives a lack of support at home or work (Figley, 1995; Radey & Figley, 2007). C*ompassion satisfaction*, the opposite of fatigue, is the sense of joy and fulfillment a helper derives from providing services to a person that is suffering (Stamm, 2002; Radey & Figley, 2007).

The ProQOL (professional quality of life) scale builds upon the work of Figley (1995; Bride, Radey, & Figley, 2007) and Stamm (2002, 2010). Before the scale's dawning, the compassion fatigue self test (CFST), the compassion satisfaction and fatigue test (CSFT), and the compassion fatigue scale (CFS) tended to be the preferred tools for measuring states of compassion (Bride, Radey, & Figley, 2007, p. 156). The first scale, the CFST, was developed through clinical trials and contains two scales designed to measure job burnout (17 items) and compassion fatigue (23 items). As more fine-tuning of this scale occurred, such as the addition of compassion satisfaction and redesigning the CSFT, these tools evolved into the CFS (Bride, Radey, & Figley, 2007).

The addition of compassion satisfaction and a more substantial focus on secondary traumatic stress as measurable items, further expanded previous tools into the

ProQOL. This version of the criteria in the ProQOL now replaces all earlier compassion scales, obsoleting the CFST, CSFT, and CFS (Stamm, 2016; Bride, Radey, & Figley, 2007). Currently, the ProQOL showcases the information in the previous scales and itself in the following manner:

The first subscale measures *compassion satisfaction*, the pleasure that one derives from helping others professionally, with higher scores indicating higher compassion satisfaction;

The second subscale focuses on *burnout*, defined as feelings of helplessness and ineffectiveness when managing one's work, with increased scores indicating more burnout; and

The third subscale measures *secondary traumatic stress*, with elevated scores indicating higher levels of compassion fatigue/secondary traumatic stress (Bride, Radey, & Figley, 2007, p. 159).

As a primary guideline for the ProQOL, the following score points on the subscales are considered benchmarks for specific behaviors or feelings that should be noted. The ProQOL is designed to only assess the participant's feelings and experiences in the past 30 days. Due to the timeframe requirement necessary in the ProQOL, there is more urgency and attention to the following score-points:

Job satisfaction may be present with scores of 33 or below in the compassion satisfaction subscale;

Positive feelings regarding the ability to be *effective professionally* may be current with scores of 18 or below on the burnout subscale;

Scores of 27 or higher on the burnout subscale may indicate feelings of being *ineffective professionally*; and

Scores of 17 or higher on the secondary traumatic stress subscale may indicate the presence of *secondary traumatic stress* (Bride, Radey, & Figley, 2007, p. 159).

Literature Related to Key Variables and Concepts

Resiliency and Hardiness

There are several theoretical frameworks available to support research on responders and mental health. While theories on resiliency and hardiness tend to overlap into other related areas, it is essential to isolate these approaches and examine them on their merit. According to Benard (n.d.), resiliency research is worthy of review because it "validates prior research and theory in human development that has established the biological imperative for growth and development that exists in the human organism" (Resiliency Capacities section, para. 1). As Benard revealed, resiliency research believes the following traits can be built: (a) *Problem-solving skills* such as help-seeking, planning, creative thinking, and critical thinking; (b) *Social competence* such as cultural flexibility, empathy, communication, caring, and responsiveness; (c) *Autonomy* understood to encompass traits such as a sense of identity, self-awareness, self-efficacy, and adaptive distancing from negative messages and task-mastery; and (d) A belief in a *bright future* and a *sense of purpose*, implying the presence of optimism, goal direction,

educational aspirations, faith, and spiritual connectedness (Resiliency Capacities section, para. 1). The ability to build these traits in responders can significantly enhance psychological well-being, helping to improve mental health throughout public safety professions.

To identify hardiness subgroups through the use of multiple scales, researchers Johnsen et al. (2014) conducted a longitudinal study amongst 481 Norwegian infantry and combat engineers deployed for 6 months in Kosovo. Hardiness facet scores (i.e., control, commitment, challenge) were collected four times: the end of training period before deployment, one month into the mission, six months into the deployment, and three months after the mission. Johnsen et al. used the Norwegian version of Bartone's dispositional resilience scale (1995, 2007, 2008, 2010), which measures hardiness through high scores, and a Norwegian version of the 30-item general health questionnaire that measures psychological distress and reduced quality of life through high scores (p. 124). The researchers found that respondents did not fall into the traditional two groups (i.e., high hardy and low hardy). Instead, score points fell into four categories: high hardy, low hardy, sensation seekers, and rigid control. *High hardy* occurred by scoring high on all three facets of hardiness. *Low hardy* was assigned by scoring low on all three aspects of hardiness. *Sensation seekers* scored low on control and commitment, but high on challenge. While *rigid control* occurred from scoring medium to high on control and commitment, but low in challenge (p. 125). According to the researchers, these results indicate that hardiness is not a linear concept, but one broken into subgroups based off of

facet scores. As the researchers pointed out, sensation seekers and rigid control are worthy of recognizing as stand-alone positions in hardiness:

Sensation seekers scored lower on the GHQ throughout the study than individuals in the high hardy group for all four data points, making this group the least psychologically distressed with the highest quality of life.

The *rigid control* group scored higher on the GHQ than other groups at the first two data points in the study and the last data point, making it the most psychologically distressed with the lowest quality of life. However, this group scored lower on the GHQ than the high hardy group and the low hardy group at the third data point taken near the end of the deployment. These results imply that these individuals had less psychological distress and a higher quality of life than the high hardy group and low hardy group (p. 126).

According to Bartone (2006), personal indicators are not the only cause for hardiness, for highly capable leaders inspire their followers increasing hardy, resilient responses to stressful circumstances (p. 131). As Bartone attested:

6. By the policies and priorities they establish, the directives they give, the advice and counsel offered, the stories told, and perhaps most important the examples they provide, leaders may indeed alter the manner in which their subordinates interpret and make sense of their experiences. (p. 138)

From this assumption, Bartone derived his hardy leader influence hypothesis: "leaders who are high in hardiness themselves exert influence on their subordinates to

interpret stressful experiences in ways characteristic of high-hardy persons" (p. 139).

Using research that he had previously gathered in 1995 on deployment stress, morale, and

cohesion from United States Army Air Defense Artillery (ADA) battalions, Bartone

created a new case study to investigate his hypothesis on leaders. Bartone's research

focused explicitly on ADA battalions stationed to guard against Iraqi missile attacks in

Kuwait and Saudi Arabia after four and a half months into a six-month deployment (p.

143).

After conducting interviews and surveys throughout the battalions, Bartone

(2006) found that many units were exhibiting low morale and cohesion, except for the

headquarters and maintenance company that displayed high morale and cohesion.

Curious as to why this was the case, Bartone investigated further to find that the

significant difference lay in the company commander's management style and creation of

purpose amongst subordinates. Specifically, the commander created the principal task of

excavating a nearby area to obtain old military equipment and parts buried in the sand.

The men and women under his command were to recover, clean, and repair as much of

the material as possible during the deployment. They had salvaged over $1 million worth

of equipment and returned it in good working order. They had also built a multipurpose

athletic field on the former excavation site for the entire battalion to use. Bartone praises

the company commander's task and management of work because: (a) it was challenging

but allowed him and his troops to exercise control; (b) it developed a shared commitment

by having subordinate leaders and soldiers involved in the planning and execution; (c) it

had a definite end goal to be accomplished within the timeframe available with resources

available; and (d) it capitalized on recognizing accomplishments by posting pictures and

progress reports throughout the six-month duration of the task and sought recognition

from national news media and senior leaders to identify the job. The sense of pride this

instilled enhanced the shared belief that the work put into the task was not only valuable

but also important internally and externally (pp. 143-144).

In conclusion, Bartone pointed out that the company commander's behavior

supports the characteristics of hardiness, which transferred to others through his

practices. Essentially, Bartone stated that leaders like this transfer hardiness through

actions and words that actively demonstrate facets of hardiness such as commitment,

control, and challenge. These leaders also respond to stress in a constructive manner that

illustrates how stress can be valuable and provide opportunities to grow (pp. 144-145).

Tangentially, Maynard and Kennedy (2016) investigated the relationship between

resiliency and team adaptation by conducting a meta-analysis and interviewing nine

NASA personnel for an hour. Since NASA is to perform future long-duration space crew

missions with less assistance from ground support and staff, the researchers were

interested in conducting a qualitative study. Primarily, they desired to learn about the

experiences of the nine interviewees regarding team adaptations and resilience, as well as

how interviewees feel these elements may change in future missions (p. iv). Using the

input-mediator-outcome (IMO) framework, the researchers termed team adaptation as:

"adjustments to relevant team processes (i.e., action, interpersonal, transition) in response

to the disruption or trigger giving rise to the need for adaptation" (p. v). After conducting

a literature review on resilience, the researchers termed team resilience as: "an emergent

state construct which is impacted by a team's ability to overcome disruptions (i.e., team

adaptation" (p. v). The researchers also reviewed studies relevant to NASA on team

adaptation and resilience in analogous settings, focusing primarily on five elements in

this context: antecedents, adaptation processes, team mediators, adaptive outcomes, and

future opportunities (p. v).

The researchers organized recommendations on countermeasures and

interventions to increase team adaptation and resilience by six themes: team composition,

training, shared mental model development, tools provided to space crews, learning

culture, and team communication and debriefing (pp. vi, 31-32).

Due to the mixed-methods manner that Maynard and Kennedy (2016) used to

investigate team adaptation and resilience, the researchers broke up their findings into

segments. For team adaptation, Maynard and Kennedy found that the team level

influences mental models, efficacy, conflict, and team design. As for other levels, the

researchers discovered that team roles impact adaptation, psychological collectivism,

organizational context, individual cognitive ability and adaptive performance, and

learning and performance orientations. The researchers believe that team cognition,

communication, and information sharing, as well as coordination activities, can mediate

team adaptation. They also professed that the benefits of team adaptation revolve around

innovation, decision-making effectiveness, mission effectiveness, enhanced team performance, and a reduction in errors (p. 31).

As for team resilience, Maynard and Kennedy (2016) found that there was a limited amount of empirical investigations to conclude. The researchers did feel that some studies could be considered exemplary. It is these studies that they focused on, finding resilient teams to have better cohesion, cooperation, and feelings of less challenge. From the noteworthy studies, Maynard and Kennedy found that team resilience was influenced most by diverse teams that embodied the following characteristics: a small size, a team leader, independent nature, a conducive organizational structure, and knowledgeable team members with experiential diversity and higher emotional carrying capacity. The researchers pointed out that teams that are resilient also engage in communication, debriefing, visual support, and improvised work (p. 32).

From the interviews that Maynard and Kennedy (2016) conducted with the nine NASA personnel, six ideas emerged. The themes were as follows:

Types of Disruptions, consisting of interpersonal and technical, and their impact.

Prior Performance, identified by how teams overcame disruptions and disruptive triggers, and how these outcomes influenced the management and handling of new disturbances.

Measurement, regarding the need for a method to measure and track team adaptation. Respondents felt that this would help to know how the team was performing and whether or not it was succeeding at being cohesive, as well as how to correct that.

Training, to be conducted before the mission and during the mission as a team. Respondents mentioned that they desired a method to measure the effectiveness of the team training as well, to see if it was increasing adaptability.

Multi-Team Systems, to include current and future interactions between CAPCOM, PAYCOM, flight crew, and ground crew in mission control. The researchers found that there is an uneasiness regarding the interactions of these units that could result in communication delays while on an extended mission, due to the interdependent and autonomous nature of these groups.

Leader and Crew Member Roles and Responsibilities developed as a concern amongst interviewees. There was a desire to have more defined roles, with some individuals wanting rules regarding the changing and rotation of positions (pp. vi, 32-38).

Resiliency and hardiness building. Resiliency and hardiness are incredibly important factors for building psychological strength. According to Arnetz et al. (2013), it is possible to strengthen physical and mental well-being. Using an imagery-based training intervention designed to simulate 10 of the most stressful on-the-job scenarios as determined by research, Arnetz et al. believed that proper training could enhance resiliency. In support of the principles behind resiliency, Pines et al. (2012) found that personal empowerment can increase stress resiliency and help with response and coping

with work-related conflicts. Tangential to this concept, the study of Olatunji, Armstrong, Qianqian, and Mimi (2014) that used veterans with PTSD, veterans without PTSD, and healthy nonveterans, proved that exposure to traumatic and stressful stimuli also could create resilience. In summation, it reasons that resilient traits can be built and do have real benefits for mental health.

According to the Office of Community Oriented Policing Services (2014), work-related stressors can not only impact professional lives, but also impact personal lives if left untreated. Teaching how to manage stress and supporting mental health initiatives to increase resiliency is extremely important to safeguard well-being. As Benard (n.d.) proclaimed, "resiliency research provides a mandate for social change … changing the status quo in our society means changing paradigms, both personally and professionally" (Summary section, para. 4). Unfortunately, because mental health stigmas pervade several job environments in public safety, there is a greater risk for the development of psychological abnormalities. By teaching how to cope and act before exposure to trauma, traits of resiliency can improve, helping employees prepare for the future, instead of only responding to the past.

Using semi-structured interviews and interpretive phenomenological analysis (IPA), Davies et al. (2008) crafted a qualitative study to investigate the psychological profiles of responders, both paid and volunteer. The authors felt their research was necessary as there is evidence to support that mental patterns are often not considered when selecting volunteer responders for specific training. The researchers discovered that

responders, on the whole, were able to ward off adverse psychological reactions due to a resilience phenomenon present amongst the participants as a result of the following beliefs and practices: (a) the ability to carry out job-related tasks with emotional detachment; (b) the embodiment of realism when assessing personal limitations; and (c) a confident outlook towards one's capacity to perform job-related tasks and to respond to positive and negative outcomes as they arise as trained. However, debriefings for all responders (i.e., volunteer and paid) were found to be inadequate, allowing for emotional residues that could contribute to maladaptive coping and the possibility of posttraumatic stress.

Based on the evidence, Davies et al. (2008) concluded that personal characteristics of individuals are a critical factor in determining resilience, but organizational practices can hamper this growth. Primarily, the study of Davies et al. highlights the failures of responder agencies towards strengthening the resilience and coping abilities of employees and volunteers. With little to no significant benefit coming from current workplace mental health practices geared towards enhancing or preserving resilience and coping skills, it is difficult to determine how and where personal characteristics in these areas yield. Thus, the assumption is that those coping well in these professional environments must have acquired their abilities from elsewhere.

Also investigating the relationship between character profiles and resilience, Treglown et al. (2016) used 451 ambulance personnel to explore the association between dark side traits on resiliency and burnout. The researchers used the Hogan development

survey to measure dark side personality, Wagnild and Young's resilience scale-14 to measure resilience levels, and the Copenhagen burnout inventory to assess work-related burnout. The researchers were interested in answering the following questions:

"Can certain dark side traits be beneficial in stressful situations by providing additional psychological resources or aiding the adaptive allocation of these in a way that manifests resilience" (p. 2)?

"Does resilience moderate by impacting the strength of the personality-burnout relationship, or does it mediate by explaining the variance in the relationship between personality and burnout" (p. 3)?

Using exploratory factor analysis, the researchers identified three factors amongst the dark side traits:

Moving against others, comprised of bold, imaginative, colorful, and mischievous characteristics.

Moving away from others, consisting of leisurely, cautious, reserved, excitable, and skeptical traits.

Moving towards others, consisting of diligent and dutiful traits (p. 5).

From the data, Treglown et al. (2016) found that seven of the 11 Hogan development survey variables correlated with burnout. Burnout had a positive relationship with the following six variables: imaginative, cautious, leisurely, reserved, excitable, and skeptical. The remaining variable, bold, was the only variable found to correlate with burnout negatively. As for the identified factors, *moving away from others*

positively associated with burnout, while *moving towards others* and *moving against others* showed no significant correlations. When the researchers controlled for age and gender, *moving away from others* remained the only factor that predicted for burnout. The researchers also discovered that when they controlled for age and sex amongst the variables, excitable and cautious positively predicted burnout, and bold and reserved negatively predicted it (p. 6).

As for resilience, Treglown et al. (2016) found that seven of the 11 Hogan development survey variables also correlated. Specifically, the following four traits were positively related to resilience: imaginative, bold, diligent, and colorful; whereas, the next three attributes were found to correlate with resilience negatively: excitable, cautious, and reserved. As for the identified factors, *moving away from others* negatively associated with resilience, while *moving against others* positively correlated with it; *moving towards others* was not found to correlate with resilience. Interestingly, when the researchers controlled for age and gender, *moving against others* and *moving towards others* were found to positively predict resilience, while *moving away from others* was found to predict it negatively. As for the when the researchers controlled for age and gender amongst the variables, excitable and cautious negatively predicted resilience, while diligent, bold, and imaginative positively predicted it (pp. 6-7).

Lastly, Treglown et al. (2016) investigated the mediating-moderating roles of resilience. The researchers found that resilience mediated the impact of bold on burnout, and moderated the effect of diligence on burnout (p. 11). The mediating relationship was

determined because bold was a negative predictor of burnout in the initial data; however, when resilience became a part of the model, bold was no longer a significant predictor. As for the moderating relationship, using SEM analysis, the researchers determined that resilience reduced the link between personality and burnout, for the combination of diligence and resilience was found to be a negative predictor for burnout (p. 13).

Posttraumatic growth, transactional coping, and training. Posttraumatic growth (PTG) is nonstatic and can occur in various circumstances, similar to coping flexibility and transactional coping. According to Cheng et al. (2012) this coping style "is derived from the transactional theory of coping [that] conceptualizes coping as a dynamic process that is receptive to situational changes rather than a trait that remains relatively stable across situations" (p. 273). According to Chopko and Schwartz's (2009) study on police officers, posttraumatic growth is a direct result of cognitive changes surrounding a stressful event that allows an individual to experience mental healing. As Chopko and Schwartz noted, "during the process of PTG development, basic assumptions held before the traumatic experience are abandoned as attempts to build new schemas, goals, and meaning are made" (p. 371). This idea of persons developing responsive and dynamic skills through PTG is nearly identical to the contentions of Luthans et al. (2006) and their study's findings on the power of cognitive reframing in the face of traumatic and stressful events to build personal resiliency.

In the study conducted by Kaiseler, Querios, Passos, and Sousa (2014) on police recruits, active coping and the perception of control over a stressor are effective strategies

for maintaining higher levels of absorption, vigor, and dedication. As Kaiseler et al. explained, coping is associated with primary appraisal and secondary appraisal, with these two forms of evaluation serving as predictors for coping. *Primary appraisal* is understood to be the "individual judgment of the demands of a stressful event in relation to the person's goals and values" (p. 636). *Secondary appraisal* is understood to be the evaluation of "coping responses that may be required to manage the demands of the event and reflects the extent to which one perceives potentially having control, [and] the belief one can successfully perform the behaviors necessary to deal with the situation" (p. 636). Using these two constructs in conjunction, Kaiseler et al. argued that they are the building blocks of transactional coping, which is necessary to maintain mental fortitude.

Training is an essential component for maintaining balanced mental health. Focusing on psychological preparedness as a pathway for resiliency, Andersen, Papazoglou, Arnetz, and Collins (2015) argued that more policing agencies should be investing in and promoting training that supports preparedness (p. 625). It is believed that because resilience is both psychological and physiological, strides in mental preparation can result in better decision-making, optimal energy management, and more efficient situational awareness (pp. 624-625). However, employee "buy-in" towards training being beneficial is essential to the effectiveness of a program in general. If employees do not see the value in a professional practice on personal development, the skills shown may not be adopted. To understand preferences and willingness to learn more about the relationship between stress and health, Anderson, Papazoglou, Koskelainen, and Nyman

(2011) developed a standardized survey called the education about trauma and health

(eth) national survey. The goal of the ETH survey was to answer the following questions:

7. What do Police Officers know about stress, trauma, and health?

8. Are Police Officers interested in attaining more knowledge (and in what ways) about stress, trauma, and health?

9. Are Police Officers open to seeking help for trauma and stress-related issues? (p. 2)

Utilizing the ETH, Anderson, Papazoglou, Koskelainen, and Nyman (2011) acquired 1,330 Finnish police officers from 11 districts, the Finnish Security Intelligence Service, the National Bureau of Investigation, and the Police University College of Finland. The survey itself consisted of 43 questions that were a combination of open-ended, Likert, and dichotomous styles. Before and after a brief literature review, items on the relationship between trauma, health, and stress were handed out. The questions before the passage were as follows:

10. What do you estimate your risk of having a *mental* health condition related to police work over the course of your career (0%-100%)?

11. What do you estimate your risk to be having a *physical* health condition related to police work over the course of your career (0%-100%)? (p. 2)

12. The questions after the passage were as follows:

13. After reading this paragraph, what do you estimate your risk to be of having a *mental* health condition related to police work over the course of your career (0%-100%)?

14. After reading this paragraph, what do you estimate your risk to be of having a *physical* condition related to police work over the course of your career (0%-100%)? (p. 2)

There was a tremendous amount of insight that Anderson, Papazoglou, Koskelainen, and Nyman (2011) gained from their survey regarding the training experience and job-related thoughts. Specifically, the researchers found that:

- 89.5% of participants predicted they would experience a critical incident in the line of duty in the future.

- 90.7% of participants felt there was a healthy relationship between exposure to trauma and mental health conditions.

- 64.5% of participants have been formally taught about the connection between critical incidents and psychological health, whereas 35.5% had no prior training on the topic.

- 53.7% of participants reported low to moderate levels of physical demands in their work, whereas 48.8% stated elevated levels of material needs. More male than female officers found their work physically demanding.

- 86.9% of participants felt that their work was high to extremely high in emotional demands, whereas 12.7% thought they were low to moderate. There were no gender differences.

- More male operational officers felt their work was stressful than female operational officers. More male operational officers also felt that their work included high-stress situations than female operational officers.

- 56.9% of participants reported that they had never learned about the connection between critical incident exposure and physical health outcomes. Interestingly, 93.4% said that they believe having a mental health condition could increase the risk of having a physical health problem. There was no difference between genders regarding the estimation of risk related to psychological health.

- After reading the brief literature passage, participants' estimation of acquiring a mental but not physical health condition increased.

- Many participants wanted to learn about post-trauma interventions through peer support, meeting with a psychologist, and physical exercise.

- 39.4% of participants wanted to learn about post-trauma interventions through basic training, 33.4% wanted to do it through debriefing, 33.3% wanted to do it through formal peer support, and 31.5% wanted to do it through handbooks.

- 40.3% of participants have had post-trauma interventions offered to them, while 46.7 % reported that they would participate in them if provided.

- 71% of participants said that they preferred and would seek help from a health professional belonging to their organization.

Believing in the value of better training, Andersen, Papazoglou, Koskelainen, Nyman, Gustafsberg, and Arnetz (2015) determined that simulated resilience promotion training can reduce stress responses to critical incident scenarios. Using 18 Finnish males that served on Regional SWAT/Special Response Teams, the researchers had participants complete a 5\five-day tactical training program comprised of classroom and simulated town critical incident scenarios. Andersen, Papazoglou, Koskelainen, Nyman, Gustafsberg, and Arnetz (2015) hypothesized the following outcomes from the study:

SWAT team officers would be actively engaged in the resilience promotion training intervention delivered to them as part of their regular tactical training program.

Officers would be better able to control their physiological stress responses, as measured by heart rate and controlled respiration, over the course of the resilience training program as they learned and practiced the program techniques (controlled breathing and mental imagery in response to audio exposure to critical incidents). (pp. 2-3)

The researchers used a chest band to collect heart and respiration rates to measure stress reactions. They also used a pulse oximeter paired with an inner balance application to measure oxygen saturation in the blood and provide information to the user on how to "maintain a certain breathing rate to synchronize sympathetic and parasympathetic nervous system activity" (p. 4). At the end of the program, respondents attended group

feedback session where they could openly share their thoughts, as well as participate in a five-question survey containing Likert responses to assess their satisfaction with the training.

Andersen et al. (2015) created their training intervention from a combination of past techniques that various researchers used while conducting studies on training and resilience. The new study consisted of participants undergoing 60 minutes of resilience training over the course of five days that included:

- A 10-minute overview of stress and stress management relative to policing.

- An opportunity for facilitators to answer questions related to the overview.

- Practice time for psychophysiological techniques focusing on thinking about a positive emotion while engaging in controlled chest breathing. Breathing patterns consisted of a five second inhale and a five second exhale.

- Listening to one critical incident scenario on an iPod device while using controlled breathing techniques. Officers were told to imagine themselves engaged in the incident and to reflect on the actions they would take during it.

- An opportunity to practice psychophysiological breathing for 15 minutes in the evening (p. 3).

Since the specifics of critical incident scenarios were very important to the outcome of the study, these situations increased in severity as the week went along to better assess stress responses in participants. The structure of the daily critical incident delivery was as follows:

- Participants viewed one incident per day. Day one was a car chase, day two was an armed robbery, day three involved a crazed man, day four included domestic violence, and day five was a murder scene.

- Each incident began with a recording that described the scenario from the perspective of an officer.

- A subsequent recording that replayed the incident with instructions from a trained police officer related to "best practices."

- An opportunity for participants to share their thoughts and feelings on the scenarios.

- A debrief by psychologists (p. 3).

As previously mentioned, the group feedback session consisted of two parts: (a) an open group discussion that allowed participants to share their thoughts on the breathing and imagery techniques used in the resilience training session; and (b) Likert scaled survey containing five questions related to the personal effects of the training for helping to reduce stress (p. 4). Gathering all the data and feedback, Andersen et al. (2015) determined the following:

- Participants experienced a reduction in average heart rate from day one to day five. However, there were no significant differences found in the maximum heart rate observed for that period.

- Data gathered in relation to the autonomic nervous system control showed an improvement from day one to day five in the ability to maintain a

synchronized state between the sympathetic and parasympathetic nervous
system activity (labeled as achievement scores in the study). No significant
differences arose in the ability to attain a synchronized state between the
sympathetic and parasympathetic nervous system activities (labeled as
coherence scores in the study) during that time.

- Respondents felt that the training should be longer than five sessions, and
altered to include relevant weapons, team maneuvers, and group response
tactics used by SWAT/Special Response teams.

- 61.11% of participants were very or highly satisfied with the stress reduction
techniques.

- 72.23% of participants felt the devices used during the study were very
helpful or highly helpful for them to monitor stress reduction personally.

- 72.22% of participants agreed or strongly agreed that the technology used in
training can help with stress management in daily life.

- 72.22% of participants were confident or highly confident that they would
recommend the practice and its techniques to peers.

- 83.33% of participants felt that it was necessary or vital to provide this
resilience training to peers (pp. 4-5).

Maladaptive coping and posttraumatic stress disorder. According to
Papazoglou (2013), trauma has biological, psychological, and sociocultural implications.
Termed police complex spiral trauma (PCST), Papazoglou professed that the trauma

inherent in policing arises out of the distinct nature and unique culture of policing itself. Specifically, this includes the notion that individuals working in policing experience trauma frequently throughout their careers, spending much of their workday either responding to a critical incident or anticipating one. Due to the constant state of anxiety and anticipation that response to incidents can cause, Papazoglou emphasized that it is not uncommon for many to exhibit PTSD-like symptoms regardless of work environments belonging to small or large departments in rural, urban, or suburban areas (pp. 197-198). However, some who have experienced immense trauma, such as responding to an incident with mass causalities, continue to exhibit high resilience (p. 198).

According to Papazoglou (2013), the culture of policing culture has a great deal to do with how agency employees handle trauma. As Papazoglou reported, the Police Academy indoctrinates new employees into the police culture; it is there that they are taught to not express emotion towards physical and mental stimuli. According to Papazoglou, difficulty in accepting and tolerating negative emotions caused by work-related trauma is linked to the inability of many to confront negative feelings in general (p. 198). In some instances, an unemotional response to stimuli can be beneficial, provided it does not become the only type of response used personally and professionally. Research has shown that emotional expression is therapeutic and an essential part of healing and managing trauma. Therefore, a more balanced coping approach should mix emotional and non-emotional recognition of stimuli. Still, Papazoglou professed that the

deadening of emotional reactions caused by this organizational culture is only the beginning of the issues causing police complex spiral trauma.

According to Papazoglou (2013), police complex spiral trauma also manifests from natural and physical circumstances. Using past studies to support his theory, Papazoglou found that traumatized individuals have weaker verbal memory and reaction times than their non-traumatized counterparts, even when there is no difference between cognitive performance measures amongst groups (p. 198). He discovered that persons traumatized with undiagnosed PTSD (i.e., they have met some of the criteria but not enough of it to be diagnosed) had increased cortisol levels in their bodies, similar to individuals diagnosed with PTSD. Increased cortisol levels are also associated with mental and physical health ailments such as anxiety, depression, misuse of alcohol and drugs, sleep disturbances, headaches, fatigue, etc. (p. 199). However, Papazoglou did not stop at biological and physical issues being responsible for police complex spiral trauma, as these ailments have a relationship with creating and exacerbating psychological problems, making them part of the complex.

Psychological and sociocultural factors compound the severity of police complex spiral trauma. As Papazoglou (2013) found, maladaptive coping practices tend to be ignored by individuals, due to the stigma of admitting there is a problem. Similarly, Papazoglou discovered research describing the lengths that traumatized persons would go to commit suicide or purposely get themselves killed by another to perpetuate the denial of personal issues. Sadly, rather than be met with sympathy, the stigmatization of these

employees often occurs by peers, friends, family members, and sometimes the broader community for work-related injuries. These agents are also stigmatized for maladaptive coping expressions, or making the "wrong" decision or taking the "wrong" course of action while responding to a critical incident (pp. 199-200). As Papazoglou went on to show, stigmatization and practices can shut down healthy habits and conversations, exacerbating stereotypes when are females, homosexuals, and departmental minority groups are involved (pp. 200-201). As Papazoglou pointed out, issues related to police complex spiral trauma are costly not only intangibly towards employees, but also tangibly towards departments.

According to Papazoglou (2013), more research is needed to understand the complexity that surrounds police complex spiral trauma. He called for better resilience training programs and mental health professional support. He professed his belief that there is a need for departments to address stigma and stereotypes that are present to aid in the protection of mental and physical health. Papazoglou also felt departments should create preventive intervention programs that focused on assisting employees with initial, secondary, and tertiary traumatic event exposure (pp. 205-206). As he pointed out, mental health ailments caused by work-related trauma is an increasing problem that needs to be better understood, addressed, and ultimately solved.

According to Miller (2005), police officers have a higher rate of suicide than the general population.

15. Like most people, officers commit suicide as a maladaptive response to intolerable personal, family, and work situations they feel they cannot resolve. Unlike many people, however, cops tend to be very personally invested in their professional role as law enforcement officers. When this image is under threat, they react very strongly (p. 101).

In demographically diverse parts of the United States, the number of suicides increases further, which Miller alluded, by comparison, could be due to a lack of demographic homogeneity and perceived status and honor amongst the force (p. 102). Astonishingly, the number of suicides by Police officers, in general, is higher than the death rates of police officers in the line of duty by criminals (p. 101).

To respond to the negative consequences associated with the *police culture*, as Miller (2005) terms it, policing agencies should make better decisions hiring and training candidates. According to Miller, the police culture traps police officers into taking an all-or-nothing, black-or-white approach to the world. The culture endorses the false notion of infallibility and self-reliance while reinforcing stereotypical police personality factors that disallow for emotional responses to physical and mental stimuli. The rigid nature of this culture keeps many officers from reaching out for help with addictive behavior, depression, and other ailments. The organizational environment created from it further perpetuates a deterrence for accepting help from others regarding maladaptive coping practices and related issues. In response to these adverse cultural aspects, Miller believes that better health screening should be in place during the hiring process to assess the

potential risk of maladaptive coping. Miller also recommends that mental health screening and education should continue throughout an officer's career (pp. 102-105). The benefit of such training would naturally strengthen the chance for peers to notice and respond to any abnormalities, as well as to help individuals gain more self-awareness that could usher them to help. This preventative and reactionary response could lead to less individuals developing more severe and permanent mental health ailments such as PTSD.

According to the comprehensive study that drew on previous research conducted by Marmar et al. (2006), there are statistically significant PTSD predictors for police officers and first responders. To predict the likelihood of PTSD and PTSD symptoms amongst responders for their model, Marmar et al. utilized eight different elements (i.e., trauma history questionnaire, critical incident history questionnaire, peritraumatic distress inventory, peritraumatic dissociative experiences questionnaire, escape-avoidant coping, planful problem-solving coping, sources of support, and work environment inventory). The researchers found in their final model that peritraumatic distress, peritraumatic dissociative experiences, work environment, and lack of sources of support are statistically significant predictors of PTSD symptoms at a p-value of less than 0.001. The authors also found that escape-avoidant coping is a statistically significant predictor of PTSD symptoms amongst cross-sectional groups of police officers and responders at a p-value of less than 0.01.

Galatzer-Levy et al. (2014), also studied police officers but took a physiological approach to explain coping and resiliency patterns. According to these researchers, the

occurrence of blunted cortisol responses during stress exposure can be a sign of pre-existing risk factors for poor adaption to stress. This phenomenon can lead to distress, maladaptive coping, and PTSD. During four years, the researchers tested police officers' cortisol levels in response to experimental stressors, controlling for age, gender, and baseline hormonal levels. Officers that had increases in cortisol levels when a stressor was present were categorized as having higher levels of resilience, whereas those with blunted cortisol levels were more vulnerable to distress and maladaptive coping. This study sheds light on the relationship between physiological responses and mental health responses by individuals, which helps to create a better understanding in general regarding involuntary reactions to stress.

According to Covey et al. (2013), traumatic experiences can alter brain structure and function, affecting attention and cognitive control processes such as response inhibition. The study used a control sample of 11 non-trauma exposed police officers, and 14 actively employed Buffalo area police officers that were exposed to trauma and exhibited a range of PTSD symptomatology without meeting the criteria to diagnose PTSD. The researchers "obtained ERPs using dense electrode array EEG recordings during a CPT with *Go*, *NoGo*, and *non-target* (task-irrelevant) stimulus types (Go/NoGo CPT)" (p. 365). Covey et al. (2013) hypothesized the following:

The non-control group would have higher P3 amplitude and latency, especially in fronto-central sites for NoGo and non-target stimuli.

Higher PTSD scores would have a relationship with longer latency to NoGo stimuli and greater fronto-central amplitude.

Various relationships exist between latency to NoGo stimuli, fronto-central P3 stimuli, and PTSD symptomatology (p. 365).

The researchers used seven methods to obtain and measure data:

The North American adult reading test (NAART) to estimate IQ amongst all participants.

The life events checklist to investigate recent and lifetime traumatic experiences amongst the control group.

The PTSD checklist-civilian version (PCL-C) to gain group comparisons for current PTSD symptoms.

The second edition of the Beck depression inventory (BDI-II) to assess depressive symptoms amongst all participants.

The Beck anxiety inventory (BAI) to assess general anxiety symptoms amongst all participants.

The police incident survey was used to tally the total number of work-related incidents (i.e., shootings, fatal car accidents, victims of homicides, etc.) that Buffalo area police officers experienced either as witnesses or first-hand during the past 12-months.

The clinician-administered PTSD scale (CAPS-DX) was given to Buffalo area police officers by a licensed clinical psychologist to assess for trauma-related experiences and provide frequency and intensity of current and lifetime symptoms of PTSD (p. 365).

According to Covey et al. (2013), their study provided evidence that frontal

cognitive control systems in trauma-exposed individuals are related to response

inhibition. Specifically, the researchers derived this conclusion from the following

results:

P3 amplitude was present amongst between-group findings.

No group effects existed for N2.

Enhanced fronto-central P3 amplitude to NoGo was found amongst both groups,

as compared to Go trials.

Police showed greater P3 amplitude compared to controls for Go, NoGo, and non-

target trials.

PTSD symptom scores for Buffalo police officers were positively correlated with

fronto-central NoGo P3 amplitude (pp. 367-374).

Firefighters and maladaptive coping literature. While firefighters have

different duties than government law and policy enforcers, the nature of pressures that

these state, local, and federal workers undergo to carry out their job tasks are similar. Due

to the shared roles these two groups possess, there is a belief that research regarding

firefighters is relevant to understanding the physical and mental health of government

policy and law enforcers. To investigate the effect that unit-level resource adequacy (i.e.,

availability and quality of performance-related resources at the unit level) has on

firefighters drinking to cope, and the intensity of involvement in work-related critical

incidences, Bacharach et al. (2008) use hierarchical linear modeling on 1,481 firefighters

from 144 companies. According to Bacharach et al., adequacy of work environment resources directly affects an employee's ability to cope, with the reverse being true for inadequate resources. As Bacharach et al.'s study showed, unit-level resource adequacy impacts members psychological responses to critical incident involvement, with less adequate resources associated with firefighters drinking to cope and having distress/distress-related sequelae.

Taking a somewhat different approach, Steffen and Smith (2013) crafted a study worthy of tremendous amounts of consideration regarding the relationship between coping strategies and perception. The goal of the researchers' study was to determine the relationship amongst coping, stress, between-person hope, and within-person hope as predictors of positive and negative affect amongst 84 fire service members in New Mexico that were to complete a 21-day diary. Hypothesis one stated: "Higher between-person hope will predict higher daily positive affect and lower daily negative affect controlling for effect, optimism, and depression" (p. 740). Hypothesis two stated: "When experiencing more daily stress, higher within-person hope will predict higher subsequent positive affect when using more emotion-focused coping" (p. 740). Hypothesis three stated: "When experiencing more daily stress, higher within-person hope will predict lower subsequent negative affect when using more emotion-focused and problem-focused coping" (p. 740).

Steffen and Smith (2013) used several methods to gain information from respondents for the study. The assessment of between-person measures for depression

(completed with the Beck depression inventory or BDI-II) and optimism (achieved with the life-orientation test-revised or LOT-R) took place through an initial questionnaire. The calculation of between-person hope (i.e., the average of hope across all entries in one's diary) occurred at the end of the experiment. Daily assessments occurred for within-person measures for hope (completed using the state hope scale), and coping (completed with items selected from the BriefCOPE and the emotional approach coping scale). Stress (assessed using a Likert scale) and affect (achieved by using elements chosen from the PANAS-X) were also measured daily (pp. 740-741). The researchers used multilevel modeling to calculate data and test their hypotheses while controlling for demographic variables (i.e., age, gender, education, income, ethnicity, and months in fire service), even though the inclusion of these variables had no bearing on experimental results (p. 741).

The results for Steffen and Smith's (2013) *positive affect model* were broken down into two categories: between-person and within-person. The results for between-person positive affect showed that optimism did not predict positive affect, and depression predicted less positive affect. Between-person hope predicted higher positive affect, confirming the researchers' first hypothesis. The second prediction did not hold for within-person hope, total stress, and emotion expression coping. The results showed that if someone were low on hope, under high stress, and using more emotion expression coping, there would be higher subsequent positive affect. The results also showed that if someone were high on hope, under low stress, and using more emotion expression

coping, there would be higher subsequent positive affect. However, within-person hope, total stress, and problem-focused coping interacted to prove the second hypothesis. For example, results showed that if someone were high on hope, under high stress, and using more problem-focused coping, there would be higher positive affect. Similarly, if someone was low on hope, under less pressure, and using more problem-focused coping, the assumption is that there would be higher subsequent positive affect. Opposite of this, the researchers found that if someone were low on hope, under high stress, and using more problem-focused coping, there would be low positive affect. They also found that if someone was low on hope, under high stress, and using more problem-focused coping, it was predicted that there would be low subsequent positive affect (p. 743).

Steffen and Smith (2013) also broke down the results for the *negative affect model* into two categories by between-person and within-person. Between-person depression was related to higher negative affect, while between-person optimism and between-person hope did not have a relationship with negative affect (with the between-person hope results disproving the researchers' hypothesis). As for within-person effects, the researchers also found a counter to their belief that more emotion expression coping was related to lower next day negative affect when a person was under high stress, regardless of their within-person hope level. The reverse of this situation to one in which there is low stress caused a different pattern of low hope and more expression coping resulting in higher negative affect, and high hope and more emotion expression coping related to less negative affect. As for one using less problem-focused coping, those that

had higher hope were shown to have less negative affect than those with low hope (p. 743).

Due to the nature of the responder work environment and the difficulty achieving work-life balance in these fields, responder groups are ideal participants for studies on hope. Specifically, using training to help identify personal levels of hope and appropriate coping strategies (i.e., emotion expression coping or problem-focused coping) based on the level of hope would also be advantageous (Steffen & Smith, 2013, p. 746). According to Steffen and Smith (2013), people can proactively respond to situations by levels of stress and hope for a given day. The researchers recommend that if a person is under high stress and experiencing low hope, using emotion expression coping is more beneficial. Similarly, if under high stress with high hope, problem-focused coping is more helpful. Problem-focused coping is also suitable when low in hope and low in stress. Interestingly, the combination of low stress, low hope, and emotion expression coping causes high negative affect, especially the next day, making this coping strategy the worst for the given combination. The researchers believe that further within-person research needs to be conducted to determine when hope matters most for wellbeing and which coping strategies are best suited for particular situations (pp. 744-745).

Military: Deployment and negative mental health consequences literature. Military personnel, government law and policy enforcers, and first-responders perform job-related functions in characteristically similar work environments. These individuals are frequently involved in fast-paced, lifesaving situations where they must maintain

control in highly unpredictable circumstances containing unforeseen adversaries and obstacles. According to the study conducted by Gill et al. (2014), and those reviewed by Pietrzak et al. (2012) and Brouneus (2014), there is a relationship between mental health and stressful work-related encounters. Specifically, the psychological health of military personnel which is affected by demanding encounters experienced during field/outdoor job functions such as deployment. Since many responders and policing professions contain military veterans and reserve personnel, the impact of traumatic incidents that soldiers and responders experience can compound and persist without proper care and precautionary techniques.

Investigating the relationship between resilience, hardiness, and stress-related drinking amongst 7,555 Norwegian military defense personnel, Bartone et al. (2012), found that low hardiness and high avoidance coping are predictors for alcohol abuse. The researchers used 2007 responses from the Norwegian national defense health survey as a comprehensive health survey and 2010 responses from the shortened Norwegian version of the dispositional resilience scale to measure hardiness. To assess avoidance coping, the Norwegian version of the 10-item avoiding coping subscale of the coping style questionnaire, the Norwegian version of the CAGE (cut down, annoyed, guilty, eye-opener), the combat exposure scale, and the deprivation of basic needs scale were used (pp. 518-519). The researchers found that deprivation of basic needs was associated with increased risk of alcohol abuse for individuals low in challenge, a facet of hardiness (p. 520). These results support the later research of Johnsen et al. (2014), which showed that

individuals low in challenge tend to experience more psychological distress, leading to health issues.

Examining the relationship between psychological hardiness and avoidance coping as predictors of alcohol abuse amongst military members, Bartone et al. (2015) proved the generalizability of their previous research across populations. The researchers used the DRS 15-R to measure hardiness, five items from the U.S. Department of Defense post deployment health assessment (PDHA) to assess combat exposure, the AUDIT-C to regulate alcohol consumption, and the 10-item avoidance coping subscale from the coping style questionnaire to obtain data (pp. 3-4). Comparable to the results of Bartone et al.'s (2012) previous study, Bartone et al. (2015) found that there is a link between specific characteristics in U.S. male Army National Guard soldiers and increased risk of alcohol abuse after deployment. Primarily, a lower rank combined with younger age, low psychological hardiness, use avoidance coping, and more combat exposure can be attributed to substance abuse of this nature (pp. 4-7).

Similar to the research of Johnsen et al. (2014), the study by Sandvik et al. (2013) also found health relationships amongst hardy individuals that scored high in commitment and control facets but low in challenge. Before a weeklong exercise, the researchers used the Norwegian version of the DRS 15-R to measure hardiness and utilized recycling immunoaffinity chromatography on dried blood spots that were obtained on day five and day seven from the index fingers of 22 Royal Norwegian Naval Academy cadets as biomarkers for immune response (p. 706). Since all respondents

scored high in hardiness, the researchers were unable to conclude anything about the relationship between biomarkers for immune response and low hardy individuals. However, the researchers were able to find that a subgroup existed amongst the respondents, showing unbalanced hardiness profiles consisting of high scores for commitment and control and lower scores for challenge. The individuals in this subset were found to have more reactive and potentially unhealthy immune-neuroendocrine responses than their balanced counterparts when exposed to stressful conditions (pp. 707-712).

Focusing on the need to develop interventions for personnel with high levels of comorbidity after deployment, the study of Gill et al. (2014) served to inspire changes in training and mental health for soldiers. As Gill et al. pointed out, numerous members of the military suffer from low levels of HRQOL (health-related quality of life) after deployments, exhibiting issues such as irregular sleep patterns and decreased immune cell functions. Gill et al. purported that there is a direct relationship between the development of psychiatric disorders such as depression and PTSD and high levels of comorbidity combined with low levels of HRQOL. As Gill et al. pointed out, the presence of these duel health ailments comes from exposure during deployment that soldiers must respond to while performing their tasks.

According to Pietrzak et al. (2012), combat exposure, not necessarily deployment in general, is associated with adverse effects on mental health. As Pietrzak et al. revealed, 18 studies on this phenomenon have shown that:

16. Factors influencing the incidence of post-deployment PTSD included

    depression symptoms present during deployment, the presence of stress

    reaction during combat exposure and reception of associated frontline

    treatment, and the number of negative life events experienced after the

    traumatic event. (p. 24)

Research has shown that there is a delayed onset of many adverse mental health symptoms amongst military personnel. It cannot be determined whether respondents are merely not initially indicating adverse mental health symptoms when they return, or if the initial screening is flawed (p. 35). Regardless of the answer to this question, Pietrzak et al. reported that there is a need for more longitudinal studies of veterans' mental health, especially since some respondents experience the improvement of specific ailments (anxiety and depression) while others do not (panic attacks and PTSD).

According to Brouneus (2014), soldiers on peacekeeping deployments where no trauma occurs tend to have a tremendous ability to cope afterward, while those seeing injuries do not. As Brouneus professed, peacekeeping deployments are not always without violence or tension, for adversaries are often forced to continue to interact side-by-side. Soldiers that are sent to maintain peace can have exposure to similar types of trauma that a soldier on a non-peacekeeping deployment may face. According to Brouneus, research that studies soldiers suffering difficulties post-deployment identified four correlates to distress and PTSD:

17. The level of exposure to traumatic events experienced while on deployment;

18. The number of deployments taken over the course of one's military career;

19. Any existing pre-deployment personality traits or disorders; and

20. Types and occurrences of post-deployment stressors. (Brouneus, 2014, p. 24)

As Brouneus attested, post-deployment screenings underestimate the mental health burden of returning soldiers. Brouneus believes that more longitudinal studies of veterans after military retirement should be conducted to monitor and learn about the mental health of these individuals as they move on to other fields (p. 27).

Building upon the research of other studies, Engel et al. (2014) conducted a study on mental fortitude amongst military members. The researchers found that depression, suicide, and PTSDs are frequent and persistent amongst U.S. military members, due to a combination of mental health stigmas and aftercare that fails to meet standards of quality. Using a total of 18 primary health clinics at six military installations, Engel et al. created a randomized effectiveness trial over 12-months using current active duty military members marked for necessary care (i.e., depression and PTSD). The study compared the STEPS-UP (stepped enhancement of PTSD services using primary care) clinical intervention to the UCPC (usual collaborative primary care) clinical intervention (also referred to as "RESPECT-Mil," an acronym for re-engineering primary care treatment of PTSD and depression in the military). According to Engel et al., STEPS-UP directly builds upon the existing structure of UCPC by in four ways by:

Centralizing implementation coordination by having a set schedule, plan of action due to patient results, and agenda for phone conferences amongst a patient's clinical team (i.e., psychiatrist, psychologist, case manager, and administrative staff);

Enhancing care management through various contact methods (i.e., face-to-face, phone, Internet) and interactive assessments that guide caregivers with relevant questions to ask the patient; adding stepped psychotherapeutic options; and using clinical registries to guide treatment services rendered.

Unfortunately, the authors seem not to have completed the study, causing there to confusion regarding its premature sharing. The research article focuses on methods and selection of participants, rather than ultimate results gained through the mixed methods study. Therefore, there is yet to be any conclusions on which clinical process is proven to be better. However, future results should show qualitatively acquired opinions and experiences of patients and members of the clinical teams, and quantitative measures for treatment effectiveness.

To understand the role of resiliency amongst deployed individuals, Nash et al. (2014) studied two cohorts of U.S. Marines. Using a growth mixture modeling (GMM), the researchers assessed the results of posttraumatic stress trajectories on soldiers enrolled in a Marine resiliency study predicting the disorder. Participants were evaluated four times, with the first time being a month before a seven-month deployment to Afghanistan and the subsequent periods being the first, fifth, and eighth month after returning from deployment. For predictor variables, Nash et al. utilized the following five

sets of self-reported variables that were relevant to the military and found to correlate to posttraumatic stress outcomes: avoidant coping; perceived social support during and after deployment; combat-related stressor exposures experienced during deployment; lifetime stressor exposures experienced outside the index deployment; and peritraumatic dissociation, a brief dissociative episode that takes place either at the time of a traumatic event or near that occurrence.

Nash et al. found that peritraumatic dissociation and avoidant coping styles are reliable predictors of PTSD. Through these findings, Nash et al. concluded that the overall presence, or type of a stressor, may not be as crucial to the onset of PTSD-like symptoms as the manner one copes with it. These conclusions are very informative for helping to understand how to create preventative therapeutic programs for responders that will help individuals practice healthy coping skills in the face of stressors.

In attempts to innovate treatment options for deployed military personnel, Possemato et al. (2014) crafted a study to guide cognitive-behavioral therapy (CBT) practitioners on the creation and evaluation of technology-based treatments. This study centralized on the quality of a web-based patient self-management program that teaches CBT skills to manage PTSD symptoms and substance misuse by strengthening an individuals' ability to self-regulate and cope with trauma-related, anxious thoughts contributing to maladaptive coping behaviors. Eighteen combat veterans placed in a focus group (qualitative open-response), three expert clinicians (not discussed in article), and individual sessions with 34 combat veterans that had not previously participated in the

focus group portion (quantitative survey using a scale and qualitative open-response) gave feedback. The researchers used this study to create a gold program currently under testing. The research in this article centralizes around what was done to develop that plan.

The study of Possemato et al. (2014) asked several open-ended questions their focus groups. Primarily, the researchers were interested in respondents' thoughts on the appropriateness of the CBT program's content, barriers to using the program, and the structure of the program (i.e., language, graphics, and presentation style) and its content in regards to being relevant, understandable, and engaging. The results of these questions revealed:

1. That the program is most appropriate for individuals that have been home from deployment for several months, when reintegration problems tend to be more noticeable;

2. The self-paced, web-based format is suitable as a stepping-stone for face-to-face treatment, and beneficial because it allows for anonymity and privacy;

3. Users are concerned with their privacy and anonymity in interactive assessments, desiring to remain unlinked with substance abuse problems or PTSD. Users suggested reframing ailments as readjustment and reintegration issues, as well as not lumping in alcoholism with pill and drug misuse;

4. That some modules in the program should not be mandatory, because they are not pertinent to everyone;

5. That there should be an incorporation of common issues such as anger and communication;

6. That progress tracking was beneficial, and there should be either a phone app, text message, or email to help remind users to complete modules; and

7. That there should be options to communicate with others such as their primary care team, veterans via chat rooms, on-call clinicians, and other resources.

The individual session group for the study of Possemato et al. (2014) was given three modules to offer feedback on and was tested on module content to establish a baseline before assessing the modules. Module assessment was measured using a 100-point visual analog scale (VAS) ranging from *not at all* to *very much*. Respondents also had the opportunity to describe what they liked best and least, as well as any suggested changes. The results of this revealed:

1. Participants did not like three of the six modules related to core skills essential to intervention. From this feedback, the researchers redesigned all three and established two optional modules;

2. Respondents could not relate to some of the modules about drugs/alcohol or automatic thoughts; and

3. Respondents felt they did not click too much or answer the same questions more than once.

The organizational and social obstacles that hinder the progress of resiliency building, practical coping training, and private, accessible, and relevant therapeutic

solutions are similar amongst military personnel, responders, and government law and policy enforcers. Practitioners determined to find viable solutions for civilian responder treatment and training focused on the development of mental fortitude can benefit significantly from Possemato et al.'s (2014) preliminary findings. Groups persistently facing psychological health stigmas that engage in maladaptive coping practices require useful health-related resources to respond to ailments before they manifest into more serious conditions such as PTSD and suicide. The variety of data gathered by Possemato et al. showcases the multilayered approach necessary to create suitable and innovative treatment options to meet the unique needs of users.

Taking a more demographic and ethnic approach, Schultz et al. (2014) used logistic regression analyses to determine predictors for worsening mental health. The researchers used a national weighted sample of 512 OEF/OIF veterans (active, national guard, and reserve from the army, navy, air force, and marines) that were surveyed within 12 months of return from deployment (T1) and subsequently six months after the first assessment date (T2). The initial evaluation (T1) gathered information on deployment experiences, resilience, risk, demographics, and mental health. The researchers used the deployment risk and resilience inventory, Bartone's hardiness scale, general self-efficacy scale, PTSD checklist (military version), veterans RAND short form, and the alcohol use disorders identification test (AUDIT-C) to collect data. The second assessment (T2) was used to determine changes in mental health, and identify factors to predict clinical declines in mental health using clinically meaningful change criterion.

The study of Schultz et al. (2014) found that 14-25% of respondents showed a clinically meaningful decline, while 18-26% showed clinically significant improvements. The researchers found that there is a significant association between a reduction in mental fortitude and the following 11 variables: (a) Black race, (b) National Guard membership, (c) worse mental health at T1, (d) less PTSD symptom severity (PCL), (e) more bothersome physical health problems, (f) lack of psychiatric care between T1 and T2, (g) less perceived threat, (h) more difficult deployment environment, (i) less sexual harassment, (j) lower levels of self-efficacy, and (k) higher levels of hardiness.

The researchers also found that there is a relationship with worsening PTSD symptom severity between T1 and T2 and the following factors: (a) higher levels of post-deployment social support, (b) lower levels of deployment preparedness, (c) a difficult childhood family environment, (d) greater military unit sexual harassment, (e) higher PTSD symptom severity at T1, (f) lack of psychiatric treatment between T1 and T2, and (g) personal characteristics associated with being aged younger than 26 years, unemployed, and divorced or separated.

Lastly, the researchers found that worsening alcohol use between T1 and T2 had a relationship with the following 14 variables: (a) less military unit support at T1, (b) receiving medical care between T1 and T2, (c) more days bothered by a medical problem, (d) National Guard membership, (e) Marine membership, (f) still participating in the military, (g) lower alcohol use at T1, and (h) personal characteristics of being Hispanic,

male, under 26 years of age, separated or divorced, and living in one's own home or apartment.

It is difficult to ascertain the extent Schultz et al.'s (2014) results occur in the civilian world. It is highly probable that many of the relationships seen in Schultz et al.'s study occur amongst civilian staffs, especially among those with military backgrounds. The combat experiences of veterans are not separated from their psyches when the military no longer employs them. Similarly, employees serving as reservists may also exhibit comparable patterns as their military career progresses. Therefore, in this regard, the Schultz et al. study could be useful in explaining patterns of healing amongst responder groups demographically and ethnically.

General Workplace Coping and Resiliency Literature

Workers that have difficulty coping with stressors in their own lives can potentially compromise their performance at work, and vice versa, causing mental health deterioration. As Wang, Chan, Shi, and Wang (2013) discussed in their study on the mental health of disaster relief workers, it is impossible to separate work-related issues from personal issues. According to Cheng et al. (2012), the advent of globalization is causing stress in the workplace to be on the rise. Many individuals are nervous about job security and peer competition. Cheng et al. attested that there is a push to teach workers how to cope with work-related stress efficiently.

The solution to increasing resilience in the workplace is to enhance the ability of workers to exhibit coping flexibility. As Cheng et al. (2012) pointed out, coping

flexibility is the skill that allows workers to deploy "coping strategies that meet the specific demands of stressful situations" (p. 273). In agreement with this notion, Luthans, Vogelgesang, and Lester (2006) stated that resiliency is built in the workplace when individuals encounter a stressor that causes them to react by re-conceptualizing the event and their relation to it through process-focused strategies. For workers to successfully adjust to the demands of the work environment to cope with stressors present, they must have the ability to abandon old habits and form new action plans (Cheng et al., 2012).

There is a favorable relationship between psychological health and flexible coping. This type of behavioral adaptation and evaluation is a potent personal tool for individuals to maintain mental fortitude and manage stress (Kato, 2012). Kato (2012), who focused on the changeability of coping through five related studies, defines coping flexibility as the "ability to discontinue an ineffective coping strategy (i.e., evaluation coping) and produce and implement an alternative coping strategy (i.e., adaptive coping)" (p. 262). Under this premise, coping is classified as a process; this view that aligns coping flexibility with transactional theory and social problem-solving theory.

Disaster worker mental health literature. According to Cukor et al. (2011), individuals that respond to human-made incidences of disaster are more vulnerable to developing mental health issues, as opposed to those that respond to natural disasters. The increased stress in disaster zones is related to the sights, sounds, smells, and fears of personal injury present at the location. Longer exposure in this type of environment make people more susceptible to increased amounts of stress and anxiety, which can lead to a

variety of mental health issues. While longitudinally there are some improvements in the psychological health of those negatively affected by their response roles during a disaster, there are delayed onset abnormalities and ailments that are a matter of concern. Late-onset is an issue for responders, whose inability to cope surfaces later than others in different types of work (Bergeron et al., 2005).

Personal and work-related stressors can negatively affect the mental health. As shown in the study of Wang et al. (2013), disaster relief workers are not immune to experiencing adverse physical and psychological ailments while providing services to communities. Disaster responders that are residents of the areas they are servicing tend to have a harder time separating their personal and professional lives, causing the stress from these two realms to intertwine. This situation becomes worse when responders personally know victims that have died or are currently injured by the event. Tangentially, if an injury results in the line of duty, a person may have a difficult time coping while at work, causing stress and adverse mental health ailments to appear both personally and professionally.

Medical staff mental health literature. Burnout is less likely to occur when individuals possess hardy personalities and coping resources (Garrosa et al., 2010). From a sample of 98 nurses in Portugal, Garrosa et al. (2010) determined that active coping, challenge, control, and social support are negative predictors of burnout. Government policy and law enforcers also have high rates of burnout caused by job-related stressors and an inability to cope. Similarities may even exist related to current work

environments, training, and mental health offerings. Understanding the relationship

between these predictors shown in Garrosa et al.'s study, and the extent the negative

predictors apply to government policy and law enforcers, in particular, is essential for

identifying potential predictor variables for resiliency and hardiness amongst this group.

Physiological and Physical Literature: Coping, Resiliency, and Posttraumatic Stress

Disorder

The body's response to stressors plays a direct role in how a person copes. Using

several experiments conducted on rats, Maier and Watkins (2010) determined that the

brain will either suppress negative emotions such as fear or activate them further.

Specifically, the researchers examined how stressors (i.e., escapable tail shocks or

inescapable tail shocks) activate responses in the brain (i.e., serotonin, dorsal raphe

nucleus, ventral medial prefrontal cortex). There is a relationship between escapable

stressors and active coping, whereas inescapable stressors are meant to mirror

circumstances when a person is either passively coping (i.e., dealing is the only option) or

has no control and does not cope. Data collected by Maier and Watkins revealed that

exposure to a stressor that is escapable works to cause responses in the body that allows it

to become resistant to later stressors. This practice is relevant to support the benefits that

preparedness training can have on resiliency, especially since PTSD patients show

responses in their brain similar to the rats that received inescapable stressors.

Coping and behavior can be adaptable to circumstances. Responses to stressors in

an environment are consistent, regardless of the situation, but not necessarily static.

Focusing on coping styles and behavioral flexibility, Coppens, de Boer, and Koolhaas (2010) argued that behavioral flexibility serves as a guiding control function that allows for a direct response and adjusts behavior to stimuli in the environment. The management of emotions is reliant on physiological characteristics and a correlated set of individual behavioral traits. In this regard, proactive coping styles become less flexible and rely on routines, previously reinforced reactions, and rigid internally organized predictions of a situation. When utilized, proactive coping serves to reduce impulsive responses and stabilize behavior by relying on routines and standardized actions used in the past. Whereas, reactive coping techniques rely on environmental stimuli, and have a more direct stimulus-response relationship. When practiced, reactive coping tends to pay more attention to changes in the environment, reflecting on the best course of action to be taken, which can be different from those in the past.

To understand coping, Coppens et al. (2010) examined the phenomenon from a neurobiological stance. The researchers were interested in the relationship between the prefrontal cortex (PFC), serotonin, and the mesolimbic dopamine system on managing emotions and responses. According to the researchers, behavioral flexibility is a function of variability in brain circuitry. Coppens et al. found that the PFC impacts behavioral flexibility through behavioral planning, inhibition, working memory, and decision-making; when it is impaired, more impulsive choices and actions occur. As for serotonin, the researchers determined that it has a relationship with aggression, producing aggressive and impulsive behavior when present at low levels. The authors also

investigated the role of the mesolimbic dopamine system, attesting that individual variations in coping with environmental challenges are related to its levels. These findings help to understand how neurobiology impacts stress management and choices, especially in regards to the PFC, which changes elements that can affect coping and resilience.

Other areas of the brain are also essential to understand the relationship between physiological and psychological responses. Of particular importance is the hippocampus, which regulates stress responses in the brain by passing on negative feedback to the hypothalamic-pituitary-adrenal (HPA) axis. The HPA axis is the system in the body responsible for releasing glucocorticoid stress hormones such as cortisol. In the presence of stress, the levels of these hormones increase; when stress terminates, glucocorticoid levels decrease. Research has shown that elevated glucocorticoid levels, which tend to be present in depressed individuals and those with PTSD are associated with the atrophy of the hippocampus (Levone, Cryan, & O'Leary, 2014).

The process of neurogenesis and the functioning of the HPA axis affects the hippocampus. Neurogenesis has a relationship with cell proliferation, neuronal differentiation and survival, and maturation of new neurons in the subventricular zone (SVZ). Previously, the thought was that neurogenesis only took place while a baby was developing. The current scientific understanding is that neurogenesis continues into adulthood in two regions of the SVZ: the lateral ventricles and the subgranular zone (Levone et al., 2014; Mandal, 2017). Adult hippocampal neurogenesis, which occurs in

the subgranular zone, is sensitive to antidepressant treatment, stress, and environmental experience. It also has a relationship with cognitive functioning, and positively impacts the ability to differentiate between similar memories (Mandal, 2017). According to Levone, Cryan, and O'Leary (2014), chronic exposure to stress or glucocorticoids may negatively affect brain development and lead to anxiety, depression, increased HPA axis activity, memory impairment, and decreased hippocampal neurogenesis.

Stress resilience has a relationship with decreased HPA activity. Individuals with symptoms of PTSD and those experiencing depression, often have a dysfunctional HPA axis that exhibits increased activity. Glucocorticoids play a significant role in the regulation of stress, affecting hippocampal neurogenesis. As Levone, Cryan, and O'Leary (2014) explained: "Glucocorticoids, the critical substrates of the stress response, play dual roles in adult hippocampal neurogenesis, reducing or increasing it depending upon the amount released and the environmental challenge" (para. 1).

Glucocorticoids assist in maintaining homeostasis in the body by regulating biological functions such as cognition, behavior, cell proliferation and survival, immune function, skeletal growth, and reproduction. Activation of the HPA axis by stress causes the adrenal cortex to create and release glucocorticoids (Oakley & Cidlowski, 2010). According to Levone et al. (2014), individuals with chronic, uncontrollable or unpredictable stress during adulthood can exhibit abnormal neurogenesis. As the researchers point out, there is an association with predictable pressures that are controllable and normal neurogenesis. Making stress seem manageable to individuals

may be the solution to decreasing physiological issues that can develop into more serious

mental problems such as maladaptive coping and low resiliency.

Using meta-analysis, Carver and Connor-Smith (2010) examined the relationship

between physical and mental health and personality, stress, and coping. The researchers

classified coping into *problem versus emotion focus, engagement versus disengagement,*

accommodative coping and meaning-focused coping, and *proactive coping*. The

examination of personality involved looking at individual differences and human nature.

The five-factor model that uses extraversion, neuroticism, conscientiousness, openness to

experience, and agreeableness, primarily accounted for individual differences. Human

nature was relevant to stress and coping through biological models and goal-based

models. The researchers narrowed biological models down to three properties: (a) the

tendency to avoid dangerous objects and situations such as predators; (b) the propensity

to approach desirable objects and situations such as food; and (c) the capacity to

moderate between using approach and avoidance strategies.

Goal-based theories tended to include expectancy constructs to distinguish

between actions associated with moving away from threats and towards positive

outcomes, as well as goal engagement and disengagement. As the researchers explained,

goal engagement and disengagement are directly related to scaling back on a goal or

giving up on a goal that is no longer operative. In this sense, the process of achieving the

goal becomes responsive to the situation and is related to coping and stressors.

According to Carver and Connor-Smith (2010), personality can influence the impact of stress but is only modestly related to coping. Classified as behavior-under-adversity, whereby an individual faces challenges while attempting to achieve a goal, stress can be very damaging to health. The pressure to overcome obstacles can exceed or tax an individual's ability to manage threats while trying to reach a positive outcome. Coping involves actions to reduce distress and decrease harm, threat, or loss. These efforts to control stressors can be voluntary or involuntary and often fit into more than one classified coping method. For example, an action associated with emotional support fits into three types of coping styles: emotion-focused, accommodating, and engagement. The relationship between coping and personality does not highly correlate because coping is less stable than personality. Coping as a practice can adjust more than personality; it is responsive to the needs of a situation and the demands of a stressor. Therefore, personality, which is more static, does not necessarily influence the coping style chosen to respond to a stressor. Also, an individual's age and the severity of a stressor can further diminish the correlation between personality and coping.

According to Wood and Bhatnagar (2014), the strategy used to manage a stressor can impact psychological well-being. Focusing solely on active and passive coping as a mediating variable, the researchers found that there is a relationship between reductions in psychosocial stress and symptoms of mental illness. Active coping, also known as proactive coping, is linked to behaviors associated with aggression and territorial control. It has a direct relationship with high sympathetic reactivity to stressful situations and low

HPA axis reactivity. Marked by low levels of aggression and immobility, proactive coping, also termed reactive coping is different from active coping. Unlike active coping, high plasma corticosterone levels, low plasma norepinephrine, and high HPA axis reactivity characterize passive coping. According to the researchers, the type of coping response chosen to deal with stress is essential because mismanaged chronic stress can lead to pathological changes. Bodily changes due to persistent unabated pressure can result in psychiatric disorders such as generalized anxiety, PTSD, and depression.

Active and passive coping have a relationship with distinct behavioral characteristics. According to Wood and Bhatnagar (2014), the choice to use one strategy over the other to manage a threat is mostly dependent on the coping response being considered adaptive, causing less stress on the body, as well as the environment and type of danger. For example, passive coping works well when facing a stressor that is alive, life-threatening, and physically stronger. Employing passive practices such as physically freezing can increase the likelihood of survival, instead of physically trying to fight against a stronger entity that is attempting to kill its victim (p. 2). However, the persistent use of passive coping in animals when confronted by a stronger adversary can lead to mental health ailments and even death (p. 3).

Passive coping can be damaging to health under conditions of repeated exposure to brief social stress, unlike active coping, which tends to have a relationship with resilience. Often passive coping involves feelings of helplessness and reliance on others for stress resolution, which results in vulnerability to psychopathology (Wood &

Bhatnagar, 2014, pp. 1-2). As Wood and Bhatnagar (2014) remind, active coping

practices are often framed as beneficial primarily to health because they create a sense of

coherence in life and a sense of purpose. The further reinforcement of this relationship

occurs due to its ability to create a strong sense of identity (personal and professional)

and optimism while sustaining a realistic perception of a threat. However, the researchers

maintain that coping strategies should be adaptive and employed with fluidity based on

the stressor that the individual is attempting to overcome. Active coping is not always the

best method to be chosen, for passive coping strategies can be more beneficial under

specific circumstances.

　　　　According to Wood and Bhatnagar (2014), research indicates gender differences

in the prevalence and symptomatology of affective disorders. Men have higher suicide

rates, having succeeded in killing themselves, while women have an increased number of

suicide attempts. Women are shown to have double the rate of anxiety, depression, and

seasonal affective disorders to that of males. Females also exhibit more weight gain and

longer periods of sleeping than their male counterparts. However, more research is

needed to understand the differences between males and females in physiological and

psychological responses to stress in both adulthood and adolescence (pp. 3-4). More

insight into the role gender has may be beneficial in explaining inconsistencies in future

research concerning the impact of stress on males and females.

　　　　Stereotype threats. Stereotype threat can negatively bias performance when

actors feel they are a part of a group exhibiting weakness in a specific domain. As Alter

et al. (2010) reported, threats to identity activate physiological responses that can deplete limited cognitive resources and adversely affect performance. Adopting mindsets that reframe threats as challenges can prevent cognitive resource depletion in the face of stereotype threat. There is a direct relationship between perception and internal resource allocation. As the researchers explain, "challenges are cast positively [in] situations in which people feel capable of conquering stressors, whereas threatening situations seem to demand more resources than the perceiver can muster" (p. 167). Thus, unlike the impairment of performance that results from threat appraisal, challenge appraisal results in adaptive stress responses that help to address the stress.

Challenge-framing recruits a motivational style of coping that is adaptive and focused on promoting positive outcomes. This concept of perception reclassifies threats as challenges that are possible to overcome. According to Alter et al. (2010), there is a direct relationship between a more optimistic mindset and building resilience and hardiness. By addressing behaviors associated with negative performance in the face of stereotype threats this concept explains possible coping outcomes based off of perception. This idea is useful, especially for those faced with mental health stigmas and maladaptive coping behaviors. The employment of challenge-reframing creates empowerment and supports healthier coping practices, leading to more beneficial performance outcomes.

According to Inzlicht and Kang (2010), threats to social identity caused by stereotypes can also provoke negative behavior and poor coping skills. Inzlicht and Kang determined that managing the stress of negative stereotypes rely on resource-demanding

coping strategies (i.e., emotion regulation, thought suppression, etc.) that are finite and cause poor self-control. To determine this relationship, the researchers used results from four different studies: stereotype threat and aggression, stereotype threat and eating, social identity threat and risky decisions, and neural signals for stereotype threat and spillover. Using analysis of covariance, the researchers determined that stereotype threat leads to poor performance and can cause adverse behaviors. Specifically, stereotype threat can produce lingering effects such as aggression, unhealthy eating habits, risky decision making. Stereotype threat has a linkage to the interference of a healthy functioning ACC (anterior cingulate cortex), which serves as an executive control in the brain by promoting self-control (study one, study two, study three, and study four, respectively). Stereotypes associated with mental and physical toughness allow for psychological health stigmas to persist. The effort that must be expended attempting to fulfill this stereotype can decrease coping abilities, creating vicious cycles that can negatively impact mental health states further (Miller, 2005; Papazoglou, 2013).

Tangential to the relationship between coping and stereotypes, Freedman (2004) used an ethnographic approach to interview with 12 ground zero responders (i.e., firefighters, police officers, chaplains, etc.). Interviews were semi-unstructured (i.e., no set time length, open to allowing topics to progress into other related issues naturally, interviewer giving personal feedback, etc.) and conducted over the course of eight-months (July 2002 – December 2002). Seeking out information to compare and contrast work environments, expectations, peer-relationships, and work-life balance, Freedman

determined the following: The "heroizing" of responders over major traumatic events can sometimes be emotionally problematic and cause disastrous sequelae, for these individuals need to emotionally distance themselves from events to heal and make sense of them. Clinicians treating responder groups must be aware of the characteristic traits of behaviors and rituals that create meaning and serve to diminish stress (i.e., firefighters typically help the family of a deceased firefighter with familial responsibilities as a close friend or family member would). These findings are of interest for they lock people into stereotypes and stereotypical behavior that can be damaging for healing when the pressures of following, and not developing these rituals occurs.

Stereotype threat further undermines attentional performance by creating physiological stress, depleting mental resources necessary to perform tasks successfully. Using social neuroscience, Forbes and Leitner (2014) proved that bias towards negative information and performance perceptions decreases working memory resources required for optimal performance during challenging tasks. The onset of adverse attentional bias causes actors to be hypervigilant towards cues that confirm negative performance information. The anxiety caused by this phenomenon ultimately undermines abilities that naturally inhibit distracting information, causing actors to reinforce stereotype threats. From a neurobiological standpoint, temporal areas such as the cerebellum, fusiform gyrus, and lateral and medial regions of the prefrontal cortex (including the anterior cingulate cortex and dorsolateral prefrontal cortex) are critical actors in attention and working memory.

The positive reframing of stereotype threats can be beneficial towards memory, attention, and performance, while maintaining an adverse outlook can cause a bias towards negative information. As Forbes and Leitner (2014) showed, early on in the information processing stream, stereotype threats can bias participants' attentional processing towards negative feedback. An association between specific areas of the brain and goal-relevant information results in a higher information exchange between neural regions and networks. This increased interaction causes simultaneous activation of the working memory and semantic memory systems as a result of (a) prefrontal power (4-8 Hz) present from the theta frequency bands, which has a relationship with efficacious attentional and encoding processing; and (b) phase locking in the theta frequency bands (temporal window of N100-P100 complex), related to enhanced encoding, attention, and recall of information. From a neurobiological standpoint, within the theta frequency band, stereotype threat increased DLPFC source phase locking and ACC in response to negative feedback. As the researchers pointed out, decreased phase locking occurred in response to positive feedback, suggesting that stereotype threat biases multiple neural networks, causing actors to focus working memory and attention on negative feedback.

The results of Forbes and Leitner (2014) are similar to the results and assumptions of Alter et al. (2010), showing the impact perception of a stressor can have physiologically and psychologically. These characteristic findings can be beneficial regarding relations between the attitude and the ability to overcome a challenge or acknowledge a stressor in a meaningful and healthy way, allowing for growth from

hardship. The persistence of mental health stigmas in government policy and law enforcer fields can increase the likelihood of ignoring stressors, wrongly causing the suppression of feelings (Miller, 2005; Papazoglou, 2013), rather than use experiences to grow resiliency and coping skills. Therefore, stereotype threats negatively reinforce mental health stigmas, whereby a person is not allowed to feel sad or stressed about work-related experiences. This occurrence may explain the high suicide, PTSD, and maladaptive coping issues present among policy and law enforcers (Miller, 2005; Papazoglou, 2013).

To develop a theory for explaining how social resilience defies stereotypes, Shaw, Scully, and Hart (2014) studied the relationship between social vulnerability and social resilience. The researchers examined an elderly group exposed to coastal flood risks, assessing the role cognitive strategies and coping mechanisms had on managing and responding to threats. The selection of senior-aged participants was purposeful, for this group is traditionally labeled as vulnerable but resilient, and often unfairly stigmatized as a weaker and less capable group (p. 196). Through the study, the researchers hoped to illuminate the following three concepts: (a) high-risk elements of social resilience; (b) the degree that social vulnerability can disguise the total social resilience of a group; and (c) the impact cognitive strategies and coping mechanisms have on individual levels of social resilience (p. 195).

The Shaw et al. (2014) study lasted six weeks with the collection of qualitative data taken for 27-days from 192 participants. Respondents were residents aged over 65

years organized into 12 focus groups (119 total) and 73 individual interviews with residents, service providers (e.g., healthcare), and meetings with local officials. Questions consisted of anticipated evacuation actions, evacuation preparation, feelings on evacuation, and demographic information (e.g., house type, disabilities). The researchers organized social resilience findings into the following three categories: coping mechanisms, high social vulnerability with hidden social resilience, and cognitive strategies. Coping mechanisms data found that longer-term residents had certain expectations concerning: (a) potential problems that a flood could bring; (b) possible solutions to potential flood problems; (c) possible extent of flood damage; (d) matters related to the evacuation process and aftermath; and (e) length of recovery time and associated life-changes.

Data showing high social vulnerability with hidden social resilience found the following trends:

- 79% believed they could evacuate without delay

- 55% had no worries about leaving; most participants had clear intentions on evacuation transport if they only had to travel two to three miles

- Local knowledge about roads, transportation, and how to determine a storm's severity-built resilience

- A respondent was more likely to plan to evacuate from a flood if he expected to need specialized medical support

- Individuals that had previously experienced flooding tended to live in homes with two-levels

- The majority had ways to receive messages about floods and weather conditions

- Individuals believed they could manage activities far beyond their physical capabilities

- Escape of care-taker would be slower without dependent

- Those waiting on care-takers for evacuation would be slower (p. 198)

Cognitive strategies found that many respondents underestimated the risk and overestimated their ability to cope. Hardened preparers tended to expose themselves to higher risk due to perceived self-reliance. However, the activism of participants in their communities and extent of social activities allowed for support groups/closer relationships and exposure to government-led action groups and councils that assist in flood prevention.

According to Shaw et al. (2014), four total dominant themes resulted from the data, and many behaviors showed relationships with types of resilience. Risk perception and self-perception emerged as cognitive strategies, while coping mechanisms showed trends of accepting change and self-organization (p. 199).

Internal positive resilience was found to increase from: (a) thoughtful risk/self-perception (cognitive strategies); (b) emergency grab bags (provisions); (c) monitoring

weather forecasts (behaviors); and (d) living with uncertainty and accepting change (responses).

External positive resilience was found to increase through: (a) the ability to self-organize (social context); (b) flood defenses (physical context); (c) official emergency resources (planning context); and (c) super-attenders focusing on resilient conditions (activism).

Internal negative resilience was found to increase from: (a) an over-estimation of one's ability to respond to a disaster (cognitive strategies); (b) hardened preparers inadequately equipping themselves for precarious situations (provisions); (c) individuals putting themselves in high-risk settings (behaviors); and (d) paralyzing uncertainty over evacuating animals (responses).

Negative external resilience increased from: (a) unknown isolation of groups (social context); (b) few double storied buildings to act as evacuation shelters (physical context); (c) bureaucratic mismanagement (planning contexts); and (d) ineffective change creation (activism) (p. 201). According to Shaw et al., albeit their participant group is associated stereotypically with vulnerability, it can exhibit social resilience in multiple forms through cognitive strategies and coping mechanisms.

Public stigma. The study of Szeto and Dobson (2010) showcases the benefit of lessening mental health stigmas in the workplace. The researchers focused on methods used in the workplace to reduce psychological health stigmas such as multi-day workshops, free self-implemented toolkits, and web-based learning tools. They reported

on the effectiveness of interventions designed to decrease stigmas, as well as upcoming

program trends in this area. The passion for assessing such interventions derives from the

staggering costs associated with the tardy treatment of mental health ailments by workers.

It is also inspired by the rising tangible and intangible costs associated with workplace

losses such as numerous sick days (p. 43).

One of the interventions, albeit not explicitly designed for the workplace, that

Szeto and Dobson (2010) chose to assess was mental health first aid. The program

contained a 12-hour multi-day workshop used as an international effort to better inform

individuals about mental health treatments, ailments, and support and response for

sufferers. According to the researchers, the intervention focuses on training individuals as

first aiders to respond to mental health crises by using practices associated with ALGEE.

The acronym denotes the following concepts: *A* to assess the risk of suicide or harm; *L*

for listening non-judgmentally; *G* for giving reassurances and information; *E* for

encouraging people to get appropriate professional help; and *E* for encouraging self-help

strategies (p. 44).

Szeto and Dobson (2010) discussed four studies using mental health first aid, all

with different implementation methods and settings. The researchers found the following

results:

1. Participants had more appropriate beliefs about the treatment for depression

    and schizophrenia, with less social distance towards experiencing depression

and a combination of depression and schizophrenia (only schizophrenia did

not decrease social distance);

2. Participants showed significant increases in mental health knowledge (i.e.,

   recognition and appropriate treatment of disorders) and confidence in helping

   someone, and significant decreases in stigmatizing personal attitudes;

3. Participants showed a decline in significant effects over time, prompting the

   belief that additional post-training is required to sustain positive effects; and

4. Participants showed an increase in confidence towards helping others with

   mental health ailments and knowledge about recognizing psychiatric

   disorders, but the desired increase in social distance from those with mental

   health issues (pp. 44-45).

Szeto and Dobson (2010) subsequently assessed the beyond blue national

workplace program, also known as the *impact on depression*. The program aims to

increase employee knowledge about depression regarding recognition, intervention, and

team management of persons suffering from depression. Geared specifically towards the

work environment, it offers five workshops with target audiences, and varying lengths,

content, and toolsets to be reviewed based on the target audience. Participants of the

interventions were found to have increased confidence in helping those with depression

seek help and interacting with those suffering from depression, as well as a decrease in

stigma towards depression (p. 45).

Szeto and Dobson (2010) also discussed the characteristics and target groups for eight mental health and mental health aliment anti-stigma interventions. Unfortunately, no data from any evaluations or studies prove the effectiveness of these eight programs. The interventions list to include the following programs: Mind matters: Mental health in the workplace; the Copernicus project: Copernican shifts and what's up with biff; Business in mind; Mentally healthy workplace program; TBI/PTSD and employment training tool; Mentally healthy workplaces online training resource; Mental health in the workplace: An employer's guide; and Working well: A practical guide to building mentally health workplaces (pp. 46-48). Based on the variety of methods and the inconclusiveness of effectiveness related data, the researchers offer several potential questions for future studies. They also provide techniques to improve current and new interventions (pp. 48-53). What little can be ascertained from this lack of results is a recognition that mental health stigmas in the workplace pose issues for those with related psychological health ailments and those that work with individuals with such illnesses. There is a recognized problem in many organizations regarding the perception of individuals with mental health issues. This outside attitude, as shown in the research of Szeto and Dobson, impacts the behavior and self-image of those with mental health ailments.

Public stigma can have a powerful impact on internal perceptions. Using the stereotype content model (SCM), Sadler, Meagor, and Kaye (2012) created two studies to measure warmth and competence. Study one used an online forum sponsored by Amazon

and through Mechanical Turk and recruited 61 paid respondents from all over the United

States. Participants rated a list comprised of 13 social groups, out of a possible 26, on

factors related to how the U.S. views the warmth and competence of the groups, and how

the respondents personally see the warmth and competence of these units. Results

indicated that high levels of warmth have an association with low levels of hostility and

danger to others. Competence was also found to have a relationship with intelligence and

the capacity to make right decisions. Overall, the study revealed that individuals with

mental illness are perceived to have low warmth and low competence (p. 917).

Before conducting study two, Sadler et al. (2012) crafted a pretest to define

variables of interest better. The pretest contained 52 individuals recruited in the same

fashion as study one. Results from the pretest were explicitly used to determine the

subgroups the public associates with individuals that have mental illnesses. The process

of subgroup identification occurred by asking respondents to list groups of people with

mental illnesses. Study two then used the results of the pretest by including teams listed

by 10% or more of respondents, totaling 13 groups.

Sadler et al. (2012) also used the SCM for study two, differentiating stereotypes

of mental disorders as a function of warmth and competence. This last study contained 74

participants from across the U.S. acquired by the same recruitment methods as the pretest

and study one. Respondents assessed the 13 pretest groups on warmth, competence,

status (i.e., economically prosperous and prestigious jobs), and competition (i.e., compete

for power and resources) using a Likert scale. Results showed that status and competence

were positively correlated, while competition and warmth were negatively correlated. The data also indicated that those with addictions were deemed by respondents to be on par with those exhibiting schizophrenia, multiple personality disorder, and homelessness, showing perceptions of low warmth and low competence. Persons with eating disorders, anxiety, depression, OCD, and bipolar disorder were received better by respondents, indicating perceptions of medium warmth and medium competence.

Mental health stigmas possessed by the public can influence social distancing and even negative perceptions of those with psychological conditions towards themselves. Rusch, Todd, Bodenhausen, and Corrigan (2010) found that even when the general public does not feel that those with mental illnesses are responsible for their conditions, it still prefers to practice social distancing towards those with psychological conditions. The researchers assessed the neurobiological and genetic causal attributions associated with mental illness using two separate groups. Teams contained 50 members of the public (matched with the other group for age, gender, and ethnicity) and 85 individuals diagnosed with severe mental illnesses (on average 45 years old, 2/3 male, 1/3 white, and over ½ African-American). The study used a self-report method to determine how strongly the participants felt that genetic or neurobiological processes caused mental illness. It was found that those with mental illnesses felt responsible for their conditions and also believed in a genetic link to such states (p. 331). The researchers reported that it is difficult for those with mental health conditions to attribute non-genetic causes to their ailment since they are biased in believing only in genetic links fueled by self-guilt. These

findings raise questions regarding the connection between public mental health stigmas and stereotype threats regarding behavioral responses, resilience, and coping.

According to Corrigan and Shapiro's (2010), programs designed to decrease mental health stigma fail to alter negative public perception towards those with psychological deficiencies. The researchers attribute the absence of clinical psychologists' participation in the development and evaluation phases of programs designed to inform the public about mental illnesses as a chief reason for this shortcoming. In their assessment of techniques for reducing mental health stigmas, the researchers classified programs into three groupings based on strategy:

Education, which targets stereotypes by offering factual information that helps to foster better knowledge about mental health and ailments. This method is beneficial for the short-term improvement of decreasing negative attitudes associated with dangerousness and blame. The focus of the education impacts the success of this technique. Curriculum centralized on framing mental illness as a brain disorder can cause the public to perceive those with psychological deficiencies as being beyond help, reinforcing discrimination.

Contact, which attempts to reduce stigma by the promotion of interpersonal communication with stigmatized group members. This method has mixed results, failing to decrease stigma when contact occurs with the mentally ill when the person is agitated or experiencing an episode. This technique is also less useful when participants are not involved in an activity that has a shared goal or is considered rewarding.

Protest, which focuses on the injustice caused by the stigma through the chastisement of offenders for discriminating and stereotyping. This method has mixed success, with some specific techniques proving useful at diminishing stigma, and others serving to reactivate and reinforce prejudice.

Corrigan and Shapiro (2010) noted that cognitive (i.e., stereotypes and prejudice) and behavioral (i.e., discrimination) constructs persistently fail to alter public mental health stigmas and self-mental health stigmas due to multiple shortcomings in techniques. To decrease psychological health stigmas, the researchers recommended that future studies measure stigma change through the following five domains:

Knowledge and mental health literacy, regarding familiarity with characteristics of mental health diseases and disabilities, as well as specific treatments. This method directly relates to the impact of education programs and can inspire participants to seek help with mental health issues and to enhance learning further. However, due to the mixed record of education effects, it is difficult to determine the direct impact this domain has on stigmatizing attitudes and behaviors.

Behavior, focusing on discriminatory (i.e., coercion, benevolence, segregation) and affirming (i.e., allocation, support, opportunity, service participation) actions. This method is deemed to have highly prioritized with high face validity, and be the most conceptually compelling.

Physiological and information processes, focusing on consciousness, awareness, arousal, emotion, and implicit and explicit information processing. This method requires

specialized equipment and skills to administer but has the ability to triangulate self-report and knowledge data.

Penetration, involving recollection of medium and message. Although this technique has the broadest impact, it can be expensive and difficult to find suitable psychological models for gathering data.

Attitudes and emotions, centralized on stereotypes, feelings, and behavior intentions. This method is thought to have good reliability, content, face, and construct validity, and is a simple tactic to develop, administer, and disseminate. However, the connection that attitudes and emotions have with behavior is unclear (Table 2).

The researchers also recommended that future studies measure stigma change using the following 10 concepts as a guide: (a) incorporate a community-based participatory research team into the study, and select measures that represent stakeholder priorities while reflecting social validity; (b) assess improvement in awareness after an anti-stigma technique; (c) create theory-based models for stigma, primarily to measure attitudes and emotions; (d) evaluate the penetration of population-based anti-stigma methods; (e) outline physiological and information processes to explain their impact on stigmas; (f) select measures that are less focused on social desirability; (g) employ measures that are chosen to reflect the interests of local and target groups; (h) assess stigma change by appreciating elements of diversity (i.e., gender, ethnicity, sexual orientation, education, etc.); (i) utilize measures of behavior reflecting patterns and

combinations found in the behavior domain; and (j) employ the use of the five

recommended domains for stigma change assessment (Table 3).

Coping Mechanisms: Problem-Focused Coping and Emotion-Focused Coping

Strategies

Problem-focused and emotion-focused coping strategies are effective mechanisms

when applied appropriately by an actor. Situations, where a stressor is controllable, are

best served by problem-focused coping, whereas instances when a stressor is not

manageable by the actor, are more manageable for an individual when emotion-focused

coping strategies are employed (Lazarus & Folkman, 1984). Building off of previous

knowledge gained from this principle and other studies on stress management, Folkman

and Lazarus (1988) further investigated how coping can act as a mediator of emotion.

Interviewing a sample of 141 individuals once a month for six months, the researchers

used a revised version of the ways of coping scale, factor analysis, and hierarchical

regression analysis of residual scores to determine the extent that coping mediated

emotion during stressful encounters amongst older and younger groups.

In older persons, the researchers found that planful coping was positive for the

confident scale and negative for the disgusted/angry scale and the pleased/happy scales.

Social support was positively associated with the confident scale and negatively

associated with the pleased/happy scale. Distancing was also associated negatively with

the pleased/happy scale (p. 469). This differs from younger persons, whom the

researchers found that planful problem solving and positive reappraisal were negatively

associated with the disgusted/angry scale and positively associated with the pleased/happy scale and the confident scale. It was also found amongst this group that confronting coping and distancing were positively associated with the disgusted/angry scale and negatively associated with the pleased/happy scale and confident scale. There were no statistically significant relationships were found between self-control, seeking social support, and escape-avoidance behaviors towards any of the emotions scales (p. 469). Expressly, positive appraisal decreased stress and increased pleasure, happiness, and confidence amongst younger persons (p. 472).

According to Folkman and Lazarus (1988), planful problem-solving improves an emotional state by causing less negative emotion and more positive emotions; people feel less distress when they focus on solving the problem. Planful problem-solving can improve the person-environment relationship, which can lead to positive emotions from the favorable cognitive appraisal. Cognitive coping, marked by expressing anger and hostility, worsened emotional states. Past literature has shown a relationship between high depressive symptoms and confrontive coping; it is a maladaptive form of problem-focused coping. Interestingly, the researchers found that positive reappraisal was inconsistent between the age groups, increasing distress in the older group while decreasing distress in the younger group. It was reasoned that distancing may provide an answer, whereby positive reappraisal is difficult to sustain because distancing from the downsides of a stressor is difficult. Expressly, a person may always be reminded of the adverse outcomes of a stressor, causing distress and reversing the impact of positive

appraisal. Therefore, the researchers view confrontive coping and distancing as maladaptive forms of problem-focused coping (p. 473).

Approaching the suitability of problem-focused coping and emotion-focused coping tactics from a readjustment aspect, Herman and Tetrick (2009) investigated the coping strategies of 282 repatriates. The respondents had been employed in Japan in state and municipal educational and governmental institutions and were returning to their homelands, which were in the United States, Canada, or Australia. The researchers used a web-based survey, the 14-item Repatriation Adjustment Scale, and Stahl and Caligiuri's 30-item Coping Scale to collect the data. Time abroad and time since return being abroad, both measured in months, were used as control variables, while the results were analyzed using regression. The researchers explored on the following *problem-focused strategies*: conflict resolution, exploration, focusation/focusing, giving task help, micropolitics, organization change, planful problem solving, reinforcement, substitution, relationship building, and situational control. They also investigated the following *emotion-focused strategies*: cognitive avoidance, ethnocentrism, future orientation, negative comparisons, refusing responsibility, resignation, and withdrawal (p. 83).

Herman and Tetrick (2009) found that general adjustment had indirect relationships with both emotion-focused and problem-focused coping strategies, but that both of these styles of coping had different associations with other variables. Negative associations resulted between emotion-focused coping strategies and repatriate general, repatriate interaction, and work adjustment. Positive associations were found between

problem-focused coping mechanisms and repatriate interaction and work adjustment (p. 69). Therefore, emotion-focused strategies did not help with general adjustment, interaction adjustment, and work adjustment. This pattern is different from the problem-focused tactics, which did help with interaction adjustment and work adjustment, but not with general adjustment (p. 79). It was reasoned that the general adjustment relationship with both stress management tactics occurs because repatriates did not prepare themselves for a reverse culture shock (i.e., feeling out of touch with social norms, recent events, and social networks). The researchers also believe that some of the behaviors that had unexpected loadings for problem-focused coping strategies (i.e., confrontation and self-control) were due to the cultural focus of harmony in Japan that may have impacted respondents. For example, confrontation may be viewed now as self-centered and unproductive, and self-control may be seen more as a function of group harmony instead of a personal endeavor (p. 81).

Examining uncontrollable stressors, Probst and Jiang (2016) recruited 84 undergraduate students to assess real-time physiological reactions to the threat of layoff. The goal was to determine whether emotion-focused or problem-focused coping interventions would be more efficacious in attenuating physiological reactions. Probst and Jiang utilized heart rate (HR) and galvanic skin response (GSR) to measure stress. The study revealed that respondents who used emotion-focused coping (i.e., expressive writing) showed a more significant decline in stress than those that used problem-focused coping (i.e., creating actionable lists) when managing personal responses to a layoff (pp.

347-349). These emotion-focused strategies may be more effective because victims

needed to address their emotional reactions before engaging in job search activities (p.

349). Under this premise, the researchers concluded that responding to the challenge of

job search activities, problem-focused coping tactics, is arousing by nature; whereas, the

emotion-focused coping intervention reduces arousal (p. 350).

Also finding beneficial health outcomes from the use of emotion-focused coping,

Rahnama et al. (2017) acquired 127 family caregivers of patients in the intensive care

unit of the emergency ward to investigate the association between anxiety and coping.

The researchers employed the depression anxiety stress scale-2, the Zung self-rating

anxiety scale, and the coping strategies questionnaire to gather data. Results were

analyzed using ANOVA, the t-test method, and Pearson correlation coefficient. Out of

the 127 caregivers, 89% of them were found to have mild to severe anxiety. The study

determined that as anxiety levels increased, fewer respondents used problem-focused

coping strategies (p. IC07). More respondents with mild to severe levels of anxiety used

emotion-focused coping mechanisms to manage, engaging in prayer and religion (p.

IC08). Thus, emotion-focused tactics were found to be more beneficial to anxiety

reduction than problem-focused strategies.

Also examining the impact of coping on anxiety, Win and Ho (2017) recruited

218 seminary students in their final year in Yangon, Myanmar to determine the influence

of coping styles on life satisfaction. To measure the data, the researchers used the five-

item satisfaction with life scale, the depression anxiety and stress scale (DASS-21), and

the coping inventory for stressful situations (CISS). The researchers found that the majority of students preferred to use problem-focused coping methods. To a lesser extent, students used avoidance coping and then emotion-focused coping techniques to manage stress, the latter preferred the least. According to the researchers, problem-focused coping is preferred when the "individual attempts to short-circuit the negative emotions they are experiencing by doing something to modify, avoid, or minimize the situation that is threatening them" (p. 24). The researchers found that seminary students that used problem-focused coping methods did not show any significant direct or indirect relationships with stress, anxiety, depression, and life satisfaction. The more the students employed emotion-focused coping methods to manage stressful situations, the lower their life satisfaction and the higher their depression, anxiety, and stress. Those that used avoidance coping practices more had the highest levels of life satisfaction and lower depression (p. 23).

Win and Ho (2017) professed that the results of their study could best be understood using the theories of Lazarus and Folkman (1984) for context. For example, problem-focused coping methods are effectively employed when individuals feel capable of solving a stressful problem, and can actively decrease the amount of stress in a particular environment (Win & Ho, 2017, p. 23). The seminary students used problem-focused tactics to lessen their burden, most likely believing that the associated activities would increase life satisfaction. As the literature on coping reports (Lazarus & Folkman, 1984), individuals typically use emotion-focused coping strategies when they are unable

to solve a problem (Win & Ho, 2017, p. 24). Those that used this particular tactic did not improve their quality of life, showing emotion-focused strategies provide a weak solution for stress alleviation in environments that can be controlled by the actor.

Examining how coping and stress affect police officers, Wassermann et al. (2018) conducted a longitudinal study using 120 officers in the South African police service. Data were gathered during three different time periods using the ways of coping questionnaire. Wassermann et al. used factor analysis to determine consistency across the three time periods; distancing and self-control factors had to be removed from the study because they did not maintain standards. The Friedman test and the Wilcoxon analysis were also used. The Friedman test, a non-parametric one-way repeated measures of variance, was employed to determine if there were differences in coping over the three time periods. Afterwards, the Wilcoxon signed-rank test was administered to indicate when the significant changes took place (p. 6).

Wassermann et al. (2018) found that police officers mostly use seeking social support, planful problem-solving, and positive reappraisal to manage daily stress. The methods used less frequently by officers were escape-avoidance, followed by accepting responsibility and confrontive coping (p. 9). Over time, the police officers surveyed showed a decline in the use of positive appraisal and planful problem-solving; however, these tactics were still the most frequently used by respondents. The decline in the employment of these strategies may be due to the nature of the policing work. The restrictions of such an unpredictable environment can make it difficult for officers to plan

work activities (p. 8). Confrontive coping also lessened in use over time, but unlike positive appraisal and planful problem-solving, this strategy was infrequently used by respondents to manage stress. The researchers attribute the further decreases in confrontive coping to be caused by burnout and chronic stress (pp. 8-9).

Rao and Singh (2017) also investigated the complicated relationship police personnel have with job stress, well-being, and coping. The researchers recruited 75 entry-level police personnel serving as ASI (assistant sub inspectors) that finished their probationary period in Gurgaon, India to serve as respondents. The job stress survey, BriefCOPE, and PGI general well-being scale were utilized to measure the data. The researchers employed descriptive statistics and correlational analysis to examine the results. Similar to the bulk of scientific literature regarding coping and stress in the police environment, Rao and Singh found that problem-focused coping related positively to well-being, while emotion-focused coping related negatively to it. The researchers also found that lack of organizational support and job stress severity were negatively associated with well-being (p. 33).

Quality of Professional Life: Job Satisfaction and Compassion Fatigue/Compassion Satisfaction Literature

The personal joy derived from professional work can be critical to mental health and quality of life. According to Figley (1995) and Stamm (2002), individuals in helping professions may experience compassion satisfaction or compassion fatigue while responding to others professionally. By definition, *compassion satisfaction* comprises

feelings of joy, fulfillment, purpose, and meaning derived from these encounters.
Compassion fatigue encompasses negative emotions associated with burnout and secondary traumatic stress. As Stamm (2002) and Figley (1995) discussed, these feelings may be directly related to the work environment, yielding from chronic job stress, emotional overload, exhaustion, and feelings of frustration, helplessness, hopelessness, and depression. As Figley (1995) and Stamm (2002) pointed out, there is a relationship with the symptoms associated with compassion fatigue and maladaptive coping aliments; there is also a relationship with compassion satisfaction serving as a protector to deter the use of damaging coping habits.

The organizational culture of policing agencies typically does not support job satisfaction as a goal, causing mid-level professionals to show dissatisfaction disproportionately. The trend attributes to the culture of policing, with many entities focusing heavily on structured behavior and training in a quasi-military manner. The stringent nature of this environment serves a purpose, however, reinforcing the principle that obedience to orders can protect personal safety and lead to survival in life-threatening situations (Miller et al., 2009). According to Miller et al. (2009), successful community policing services tend to come from those with job satisfaction; however, little research identifies how to create and maintain this outcome in a policing environment (p. 419). Miller et al.'s study concluded that job satisfaction is positively related to autonomy and feedback, but only positively related to job experience when an individual has served less than 10 years of service or more than 15 years of service. Thus,

job satisfaction and job experience are negatively related when an employee has 10 to 15 years of service (pp. 422-425).

Assessing a different sample of persons working in a helping profession, Sprang, Clark, and Whitt-Woosley (2007) found trends amongst therapists where field specialization training and years of service caused higher compassion satisfaction trends (pp. 268-272). Using 6,720 licensed/certified behavioral health professionals and Stamm's ProQOL to measure compassion satisfaction, compassion fatigue, and risk of burnout, Sprang et al. concluded the following:

- Females scored higher for compassion fatigue and burnout than males.

- MDs had greater compassion fatigue scores than MA, Ph.D., LCSW, and LSW holders.

- Inpatient professionals had significantly higher burnout scores than private practice professionals.

- Individuals with specialized training had greater compassion satisfaction and lower compassion fatigue scores than those without such training.

- Individuals providing services in more rural areas had higher burnout scores than those servicing patients in urban areas.

- Female gender, higher educational degrees, less clinical experience, younger age, and a higher percentage of clients with PTSD predicted higher levels of compassion fatigue and burnout (pp. 263-271).

It is the belief of Sprang et al. that their results indicate that specialized trauma training enhances compassion satisfaction. The researchers believe that these positive feelings serve to protect against the negative consequences of trauma exposure, simultaneously strengthening self-efficacy and empowering individuals to use personal skillsets to make practical assessments (p. 272).

To assess an intervention program designed to increase compassion satisfaction, Flarity et al. (2016) utilized the ProQOL, examining the prevalence of compassion fatigue in a convenience sample of nine Forensic Nurses. The intervention involved a four-hour lecture and group exercises on guided imagery and breathing techniques. Data showed statistically significant increases in compassion satisfaction scores and decreases in secondary traumatic stress, a component of compassion fatigue (pp. 151-153). These results highlight the unfixed nature of compassion states, indicating that they are not static and can be improved. The fluid nature of professional quality of life aligns with many of the assumptions related to mental fortitude. Notably, the notion that elements of psychological health and personal perception can be improved to better overall health.

To identify mechanisms that increase levels of personal growth, Tehrani (2009) used the carer belief inventory (CBI), assessing compassion fatigue after a training presentation. A total of 276 caring professionals working as human resource advisors, police family liaison officers, occupational health advisors, and counselors served as participants in the study. Tehrani found that the emotional response amongst professionals regarding work was directly related to the availability of supervision and

opportunities to engage in personal reflection and a healthy lifestyle. The presence of

positive feelings, related to enhanced learning and competence, resulted from more

oversight from superiors and engagement in personal care practices. Negative emotions,

comprised of feelings of poor job performance and nonfulfillment from work, occurred

when engagement in self-care practices and managerial attention was low (p. 4).

Essentially, higher levels of personal growth, increased access to professional

supervision, and greater opportunities to engage in personal reflection increased

compassion satisfaction, while less availability to such elements yielded negative

emotions and perceptions causing compassion fatigue.

 Using one of the earlier versions of the ProQOL (the compassion satisfaction and

fatigue test, also known as the CSFT), Conrad and Kellar-Guenther (2006) investigated

the differences between compassion fatigue and burnout. The study consisted of 363

Colorado child protection professionals (276 caseworkers and 55 supervisors, 76% and

15.2% respectively) with high levels of compassion satisfaction and low levels of

compassion satisfaction. Examination of participants occurred during a 10-month time

span, assessing individuals only once with the CSFT at the beginning of a secondary

trauma training seminar. The duration of the 10-months is somewhat inconsequential, as

the study is not longitudinal. The timespan merely reflects the total number of months the

researchers gathered information, since respondents were required to only fill out the

assessment once. Similar to the ProQOL, the CSFT takes a small, recent evaluation of the

respondent's feelings and experiences to measure current states of compassion

accurately. Respondents were not to include information about opinions and experiences that were outside of the allotted time.

Conrad and Kellar-Guenther (2006) found that individuals with high compassion satisfaction had lower levels of compassion fatigue and lower levels of burnout, but large numbers of respondents had a chance for developing compassion fatigue. Nearly 50% of respondents were found to have a high or extremely high risk of compassion fatigue, while 7.7% had a high or extremely high risk for burnout. The potential for compassion satisfaction occurred amongst 75% of respondents, who had high, extremely high chance for it (p. 1077). While the relationship between the high rates of compassion fatigue and low rates of burnout seem contradictory on the surface, by definition, they are not. As the researchers pointed out in their brief literature review, burnout is a process arising over an extended period, whereas compassion fatigue can occur suddenly. Likewise, the quick onset of compassion fatigue matches its exit, which has the potential to be shorter lived than burnout (p. 1074).

It appears somewhat reasonable that more than half of the respondents in Conrad and Kellar-Guenther's (2006) study would have the potential for compassion satisfaction. Compassion satisfaction can reduce compassion fatigue and mitigate the possibility of burnout. The acute nature of compassion fatigue further reinforces the chance of professionals finding fulfillment in their work. According to the researchers, high compassion satisfaction scores may be the result of respondents viewing their professional roles as a calling. Under this premise, those who begin to experience burnout

would have either exited the field entirely or be very close to transitioning out of it. The exiting assumption is supported by the high turnover rate in the particular area sampled (22% median annual turnover rate), giving further credence to these possibilities (p. 1078).

Francis, Brown, and Rees (2016) examined the relationship trait-negative affect (TNA), and compassion satisfaction (CS) had on compassion fatigue (CF), burnout, and secondary traumatic stress (STS) amongst 273 nurses. The researchers used the ProQOL, depressed anxiety stress scale (DASS), and the Spielberger state-trait anxiety inventory form Y2 (STAI-Y2), to assess nurses from the metropolitan tertiary acute hospital in Western Australia. The researchers posited four hypotheses:

1. The personality-related variable TNA will have (a) a positive association with CF and its dimensions, STS, and burnout; (b) a positive relationship with current levels of anxious and depressed moods; and (c) a negative association with CS.

2. CS will have (a) a negative association with CF and its dimensions, STS, and burnout; and (b) a negative relationship with current levels of anxious and depressed moods.

3. TNA will have a positive predictive association with CF and its dimensions, STS, and burnout, after controlling for age, gender, current anxious and depressed moods, and CS.

4. CS will have a negative predictive association with CF and its dimensions,

STS, and burnout after controlling for age, gender, current anxious and

depressed mood, and TNA. (p. 90)

The results confirmed three were hypotheses (hypotheses one, two, and three) and

one was only partially supported (hypothesis four) (pp. 91-93). Expressly, the researchers

found the following:

- Higher TNA has a statistically significant relationship with higher CF, STS,

  burnout, current negative mood, and lower CS.

- Higher CS has a significant relationship with lower levels of CF, STS,

  burnout, anxious mood, and depressive mood.

- Higher TNA has a statistically significant relationship with higher CF, when

  controlling for age, gender, current anxious and depressed moods, and CS.

- Higher CS was significantly associated with lower levels of CF due to its

  contribution to lowering burnout symptoms (pp. 92-93).

Helping professionals may be able to protect against compassion fatigue through

mindfulness. (Decker, Constantine Brown, Ong, & Stiney-Ziskind, 2015, p. 36). Using

the ProQOL and the five facets of mindfulness questionnaire, the Decker et al. (2015)

utilized 111 MSW student interns to examine the effects of mindfulness as it relates to

compassion satisfaction and compassion fatigue. The researchers posited that "higher

levels of mindfulness positively correlate with a greater potential for compassion

satisfaction and that lower levels of mindfulness positively correlate with greater risk for

compassion fatigue" (p. 33). The results of the study concluded that there was a positive

correlation between mindfulness and compassion satisfaction. Likewise, the study found

that there was a negative correlation between mindfulness and compassion fatigue (pp.

35-36).

Using the ProQOL, the BriefCOPE, and the stressful life experiences screening -

short form (SLES-S), Jacobson (now known as Jacobson Fey) (2012) assessed the

potential for compassion satisfaction, as well as the risks for compassion fatigue and

burnout amongst employee assistance program (EAP) professionals. According to

Jacobson, EAPs often work with employees and their families to provide support on

personal issues that may affect the workplace (p. 3). To examine states of compassion

more fully, Jacobson included the following predictors in her study on states of

compassion: coping, gender, a history of personal trauma, the number of traumatized

clients on one's caseload, and education/training related to working with trauma victims

(p. 6). Specifically, Jacobson examined these predictors through:

- Yes/No questions for education or professional training to work with
  traumatized individuals
- Yes/No questions for education or vocational training to work with
  traumatized groups
- The choice of Social Work/Other for degree discipline
- Continuous scores for positive coping, negative coping, and passive coping
  scales

- The total number of stressful life events

- The number of clients on one's caseload

- The choice of Male/Female for gender (p. 10)

Ultimately, Jacobson desired to answer the following questions through her exploratory study, using said scales and open coding to report themes and categories:

- What is the prevalence of risk for compassion fatigue and burnout among a national sample of EAP professionals? What is the potential for compassion satisfaction among a national sample of EAP professionals?

- What characteristics, based on theory and prior research, predict the risk of compassion fatigue and burnout, and potential for compassion satisfaction among EAP professionals? (p. 6)

Jacobson (2012) found that the EAP professionals sampled for her study fared better regarding states of compassion than the benchmark sample that Stamm studied in 1998 with the ProQOL. Stamm's 1998 benchmark results described the average for compassion fatigue as higher (13), the standard for burnout as larger (23), and the average potential for compassion satisfaction as lower (37) (p. 11). In contrast, Jacobson's group had a low to moderate risk for compassion fatigue (10.26) and burnout (16.78). These individuals also exhibited a medium to high potential for compassion satisfaction (39.52). When examining Jacobson's averages for states of compassion and burnout, it is evident that they tie directly into the results for the predictors that she studied.

According to Jacobson (2012), coping remains an essential predictor of compassion fatigue, burnout, and compassion satisfaction. As Jacobson stated, previous literature and her study's results show that positive coping styles tend to be associated with lower levels of secondary traumatic stress, burnout, and compassion fatigue (pp. 13-15). As described, the following predictive figures Jacobson derived from her study garner more meaning for the states of compassion and burnout average scores:

- Negative Coping was significant predictor of compassion fatigue at $p<0.001$

- Negative Coping was significant in a positive direction for predicting risk of burnout at $p<0.001$

- Positive Coping was significant in a negative direction for predicting risk of burnout at $p<0.001$

- Negative Coping was significant in a negative direction for predicting potential for compassion satisfaction at $p<0.001$

- Training (Group Crisis Response) was significant in a positive direction for predicting potential for compassion satisfaction at $p=0.004$

- Positive Coping was significant in a positive direction for predicting for compassion satisfaction at $p<0.001$ (pp. 11-12)

Fortney et al. (2013) investigated the ability of an abbreviated version of the MBSR (a mindfulness training intervention) to increase job satisfaction, quality of life, and compassion amongst 30 primary care clinicians. Participants were from the University of Wisconsin-Madison's family medicine, internal medicine, and pediatrics

departments. To measure the data, the researchers used the Maslach burnout inventory (MBI), the depression anxiety scales-21 (DASS-21), the perceived stress scale (PSS) the 14-item resilience scale (RS-14), and the Santa Clara brief compassion scale (SCBC). Assessments occurred at four different time points: two weeks before the intervention, one day after invention, eight weeks after intervention, nine months after intervention. At the onset of the study, the researchers found that respondents scored high for a sense of personal accomplishment and two aspects of burnout syndrome: depersonalization and emotional exhaustion (p. 5). At the conclusion of the study, the researchers showed the intervention was successful in the following ways:

- Respondents showed significant decreases in emotional exhaustion at all subsequent data gathering points at $p = 0.046$, $p = 0.006$, and $p = 0.009$, respectively

- Respondents only indicated significant reductions in depersonalization at data gathering points three and four at $p = 0.03$ and $p = 0.005$, respectively

- Respondents exhibited an increase for sense of personal accomplishment at all subsequent data gathering points at $p = <0.001$

- Respondents presented significant reductions in depression at all following data gathering points at $p \leq 0.001$ (pp. 5-6)

However beneficial the intervention was at lessening negative states of mental health and promoting a favorable feeling of self-accomplishment, it is of note that it failed to encourage any long-lasting results towards compassion and resilience.

Respondents showed no significant changes over the course of the study in these relevant areas (p. 6).

Providing a literature review on compassion satisfaction and fatigue, Harr (2013) made recommendations for increasing compassion satisfaction and decreasing compassion fatigue and burnout in the workplace. According to Harr, having participants in an organizational environment already supportive of preserving the mental and physical wellbeing of its staff is critical to increasing compassion satisfaction and mitigating the negative fallout of compassion fatigue and burnout (pp. 76-81). Through the 1998 research of Gold, Harr pointed out employee's feelings of insufficient resources, unmanageable caseloads, lack of control, threats to personal safety, and little authority in decision-making cause discouragement and disempowerment (pp. 76-77). From this standpoint, Harr goes on to frame compassion fatigue and burnout as occupational hazards, not personal deficiencies amongst employees (p. 77). Thus, Harr purported that supervisors should protect staff from large workloads in general and caseloads that focus on similarly traumatic incidences. Harr also stated that compassion satisfaction could be increased amongst workers by merely placing them in a team environment that validates their feelings while simultaneously focusing on their strengths (pp. 78-80).

From a macro perspective that focuses on improving organizations in helping professions from the onset, Harr (2013) called for better educational preparation for individuals entering fields where they interact with traumatized individuals on a daily basis. Harr supported this claim by stating that a disproportionate number of individuals

"begin their careers unaware of the importance of self-care and are unprepared to deal with the possible consequences of secondary trauma to their mental and physical wellbeing" (pp. 84-85). Harr recalls from personal experience that higher education does not equip students to be mindfully aware of their own needs and expectations when engaging in work to help others. The negative consequences of neglecting self-care and forming realistic expectations for patients' improvements were not stressed in an academic environment, nor by mentors in the field. Consequently, those entering into helping professions are ill-prepared to take on the personal aftermath caused by the daily challenges of the work, negatively impacting their mental state over time.

According to Harr (2013), many researchers have called for more self-awareness towards self-care and reasonable expectations of patient progress. The realization of this advice has yet to become an industry-wide practice amongst helping professions, allowing for disproportionate numbers of compassion fatigue and burnout to persist. Research conducted in 2008 by Bussey advised that students and new professionals to be required to complete self-care plans that develop strategies for coping and support and address personal psychological and physical safety needs in realistic, practical manners (p. 85). Kanter (2007) professed that realistic expectations of patient progress could also curb compassion fatigue. Kanter stressed that new professionals need to remember that not every person assisted by the work of a helping professional can be "rescued." While a patient-centered approach is essential, Kanter recommended that employees focus on the contributions they make towards an individual's path to positive change, not necessarily

the complete alleviation of obstacles. Harr (2013) attested that this framing reinforced at an organizational level can also influence the building of compassion satisfaction amongst helping staffs, diminishing the prevalence of burnout and compassion fatigue (p. 83).

Similarly calling on a more substantial need for organizational change and self-care, Radey and Figley (2007) assessed literature to understand how enhancing professional quality of life can benefit caregivers. Using a conceptual model, the researchers employed case studies to illustrate contributions to compassion satisfaction. Specifically, Radey and Figley sought to answer the following questions related to compassion and social work:

- How can we turn our compassion towards our clients into momentum for our flourishing?

- How can social workers find "compassion satisfaction" or feelings of fulfillment with clients?

- When involved in their work of helping others, how can social workers reach professional fulfillment as well as personal satisfaction? (pp. 207-208)

According to Radey and Figley (2007) "four major factors appear to contribute to compassion fatigue: poor self-care, previous unresolved trauma, inability or refusal to control work stressors, and a lack of satisfaction for the work" (p. 207). These four elements have a reciprocal relationship with self-care, affect, and intellectual, social, and physical resources, which are associated with positive outcomes and compassion

satisfaction (p. 208). Sharing personal anecdotes to illustrate how these constructs serve

to foster compassion satisfaction and fatigue, the researchers used examples regarding

positive affect, internal resources, self-care, and positivity ratios to prove their point.

Radey discussed her time in a psychiatric hospital where she used *positive affect*

to promote a client's success. Her optimism for the alleviation of her client's adverse

condition through the use of medication, and her commitment to oversee his safety

caused the man to have a more hopeful disposition. Improvements in the patient

increased Radey's compassion satisfaction (p. 209).

To show how *internal resources* can impact a social worker's compassion state,

both Figley and Radey shared stories about times early on in their careers. At that time,

both felt they lacked the experience and disposition to actively engage with clients in a

manner that was mutually beneficial. Both researchers expressed how feelings of

inadequacy caused them to feel emotionally depleted and unable to tackle and solve the

problems of multiple clients with the same ailments. Figley, however, once more

emotionally detached and experienced, admitted that his positivity-negativity ration

shifted, causing more compassion satisfaction (p. 209).

To exhibit the importance of *self-care*, Radey and Figley made distinctions

between elements that comprise individual and organizational self-care. No method was

considered more useful for minimizing compassion fatigue. Radey shared an anecdote

regarding her time as a social worker at an empowerment camp. Confirming the

comments of previous researchers such as Jacobson (2012) that called for self-care

curriculum in MSW programs, Radey (Radey & Figley, 2007) admitted she never learned the importance of maintaining self-care in her MSW. As a result, Radey confessed that she felt inadequate in her effectiveness as a helper. These negative personal feelings impacted her professionally and personally. She was too ashamed to reach out for help from her professional peers, and ended up neglecting herself and ultimately her clients (p. 210).

To establish the importance of *positivity ratios*, Radey and Figley assessed the relationship between perception and compassion satisfaction. Using examples from other researchers, Radey and Figley summarized that greater positivity ratios lead to more confidence, higher enjoyment, and more fruitful professional and personal relationships. Reflecting on her own experience, Radey admitted that her positivity ratio could have been higher during her time at the empowerment camp if she had recognized her clients' strengths and her contribution towards providing them with a safe environment (pp. 210-211).

The most efficient manner to increase compassion satisfaction and decrease compassion fatigue is to increase affect, self-care, professional development, and positivity. Radey and Figley (2007) asserted that to increase affect, one should maintain optimism concerning the status of a client and their professional journey. Distancing oneself from difficult client issues, taking an appropriate amount of time off of work, and engaging in a variety of casework (i.e., rather than multiple cases regarding the same ailment or situation) can also increase affect. Participating in professional development

and utilizing intellectual, social, professional (peer), and health resources can also diminish compassion fatigue and increase compassion satisfaction. These elements are directly related to self-care, which must be upheld professionally and personally to maintain resources. Lastly, the researchers recommended growing positivity by ascribing favorable meaning to experiences and by engaging in psychosocial education (pp. 212-213).

Summary and Conclusion

There is a need to strengthen the professional quality of life and mental fortitude of those who serve to enforce policy for the government. Specifically, more research needs to focus on the relationship between mental health, compassion, coping, resilience, and hardiness (U.S. Department of Justice Office Community Oriented Policing Services, 2014). Without proper resiliency and coping training given by the workplace, many responders have difficulty managing stressors alone. Research has indicated that those that respond to human-made disasters are more vulnerable to developing mental health issues (Cukor et al., 2011) and that individuals persistently subjected to stressful work-related tasks may experience difficulty coping that can lead to: (a) compassion fatigue, burnout, and secondary traumatic stress (Adams et al., 2008; Andersen & Papazoglou, 2015; Bride et al., 2007; Conrad & Kellar-Guenther, 2006; Craigie et al., 2016; Creamer & Liddle, 2005; Decker et al., 2015; Flarity et al., 2016; Fortney et al., 2013; Harr, 2013; Jacobson, 2012; Pulido, 2007; Sprang et al., 2007; Tehrani, 2009; Treglown et al., 2016; Violanti & Gehrke, 2003); (b) drug and alcohol abuse (Bacharach et al., 2008; Bartone et

al., 2012; Bartone et al., 2015; Schultz et al., 2014); and (c) other negative mental and

physical health consequences such as suicide, anxiety, posttraumatic stress, acute stress

disorder, and related ailments (Alter et al., 2010; Andersen, Papazoglou, Arnetz, &

Collins, 2015; Andersen, Papazoglou, Koskelainen, & Nyman, 2015; Arnetz et al., 2013;

Arnold, 1945; Aytac, 2015; Bartone, 2006; Benedek et al., 2007; Brouneus, 2014; Brown

& Daus, 2015; Burns et al., 2008; Carver et al., 1989; Carver & Connor-Smith, 2010;

Cheng et al., 2012; Cheng et al., 2014; Chopko & Schwartz, 2009; Collins & Long, 2003;

Coppens et al., 2010; Covey et al., 2013; Creamer & Liddle, 2005; Cukor et al., 2011;

Davies et al., 2008; Engel et al., 2014; Fleming & Ledogar, 2008; Folkman et al., 1986;

Forbes & Leitner, 2014; Freedman, 2004; Galatzer-Levy et al., 2014; Garrosa et al.,

2010; Gill et al., 2014; Habersaat et al., 2015; Hannan et al., 2015; Inzlicht & Kang,

2010; Johnsen et al., 2014; Kaiseler et al., 2014; Kato, 2012; Kleim & Westphal, 2011;

Kobasa, 1979; Lazarus & Alfert, 1964; Levone et al., 2015; Luthans et al., 2006; Luthar

et al., 2000; Maier & Watkins, 2010; Marmar et al., 2006; Miller, 2005; Morgan et al.,

2001; Nash et al., 2014; Olatunji et al., 2014; Papazoglou, 2013; Pietrzak et al., 2012;

Pines et al., 2012; Possemato et al., 2014; Rusch et al., 2010; Rutter, 1985; Sandvik et al.,

2013; Schultz et al., 2014; Shaw et al., 2014; Speisman et al., 1964; Stanley et al., 2016;

Steffen & Smith, 2013; Stellman et al., 2008; Waite & Richardson, 2004; Wang et al.,

2013) .

Often, these stressors not only deteriorate the quality of work produced by employees and volunteers, but they also serve to dismantle mental health in its entirety, impacting both workplace and personal lives (Wang et al., 2013).

Currently, workplace programs that address the professional quality of life and mental fortitude of helping professionals have a mixed success industry-wide. A tremendous amount of research focuses on predictors of maladaptive coping, burnout, and PTSD (Garrosa et al., 2010; Marmar et al., 2014; Nash et al., 2014; Schultz et al., 2014). The emphasis on understanding obstacles to mental fortitude reinforces the need to offer better health services in the workplace (Gill et al., 2014; Pietrzak et al., 2012; Brouneus, 2014; Engel et al., 2014; Possemato et al., 2014). Research has shown that adequate workplace resources related to coping and resiliency skill building strengthen mental health (Bacharach et al., 2008). Essentially, resiliency, hardiness, and coping skills can be made stronger through reframing, perception, and coping flexibility (Arnetz et al., 2013; Pines et al., 2012; Olatunji et al., 2014; Cheng et al., 2012; Chopko & Schwartz, 2009; Luthans et al., 2006; Kaiseler et al., 2014; Steffen & Smith, 2013; Kato, 2012). As research has shown, failure to address the cognitive side of persistent stress through healthy coping skills can lead to maladaptive physiological responses in the body that can further compound mental health issues and vulnerability for PTSD and other significant diseases (Galatzer-Levy et al., 2014; Maier & Watkins, 2010).

Current literature shows that coping and behavior are adaptive to circumstances and cognitive appraisal (Coppens et al., 2010, Speisman et al., 1964; Lazarus & Alfert,

1964; Folkman et al., 1986). There is a relationship between how a person copes and the impact a stressor can have on well-being (Wood & Bhatnagar, 2014). The present body of literature has also shown a relationship between perception and internal resource allocation, whereby threats to social identity lead to reduced coping skills (Inzlicht & Kay, 2010). The relation of such threats to compassion is unknown; little research reveals how these stressors impact compassion satisfaction and compassion fatigue. Research has shown that stereotype threats, can be prevented when individuals are taught to reframe threats as challenges that can be overcome (Alter et al., 2010; Forbes & Leitner, 2014; Shaw et al., 2014). Research has shown that in conjunction with training to decrease the public stigma associated with mental health ailments, the power and prevalence of stereotype threats can reduce (Szeto & Dobson, 2010; Corrigan & Shapiro, 2010; Rusch et al., 2010; Sadler et al., 2012).

More investigation is needed to design training programs that help to develop traits associated with high levels of resilience and hardiness. The styles of coping that resilient and hardy individuals use are indefinite, as is the impact coping techniques and compassion states (i.e., fatigue or satisfaction) have on resilience and hardiness levels. It is essential to investigate further the roles coping styles and compassion states have, primarily since they can have a relationship with personality and cognitive appraisal. As previously discussed, the impact emotion, cognitive appraisal, and personality on aspects of coping, compassion, hardiness, and resilience are still left to be definitively determined. The upcoming study chooses to enter into the process of answering a portion

of these unknowns by investigating how coping styles and states of compassion can predict high or low levels of resilience and hardiness amongst individuals that work to enforce policy for the government.

Chapter 3: Research Method

Introduction

Understanding the relationship between coping practices, professional quality of life facets, resilience, and hardiness among government policy and law enforcers is necessary to safeguard the mental and physical health of this group. Regardless of whether an employee serves at the state, local, or federal level, policy and law enforcers are persistently exposed to stressful work-related conditions and would benefit greatly from high levels of resilience and hardiness. Personal perceptions related to on-the-job stress can have significant adverse impacts on health. According to Habersaat, Geiger, Abdellaoui, and Wolf (2015), various law enforcement tasks, individual factors, and perceptions related to work conditions influence the health more than division-specific work environments. The ability to positively cope with job-related stress does not necessarily come with more years on the job. Habersaat et al.'s research showed that those working in the community division, as a group, with more years of experience on the job than others in the same field, reported more posttraumatic stress symptoms than other groups.

Collectively, U.S. policy and law enforcers have higher rates of suicide than the general population (Miller, 2005; Papazoglou, 2013). According to Stanley, Hom, and Joiner's (2015) meta-analysis of 63 different studies, maladaptive coping ailments serve as risk factors for suicidal ideations. Agency resources have a substantial impact on employees affording the opportunity to partake in mental health services. The lack of

mental health resources in smaller agencies and communities may be the cause of higher

rates of suicide and maladaptive coping ailments than those employed by larger

organizations (Stanley et al., 2015, p. 37). The association of this pattern with the

presence of mental health stigmas in an agency as a barrier to the use of psychological

health support is unknown.

Due to working conditions that affect physiological and psychological health,

there is a need for agencies to offer stress management, mental health training, and

programs for coping with stress. Pressure mounting for government policy and law

enforcers to perform and meet community expectations compounds tension, causing the

need for these services to be essential. As the demand for personal psychological

resources increases, difficulty coping exacerbates as more organizational and private

issues arise (Aytac, 2015). According to Aytac (2015), the rise in job-related

responsibilities in policy and law enforcement has a direct relation to increases in stress,

with anger styles correlated to its symptoms (p. 6426). Therefore, gaining a more

extensive understanding of how to manage job-related and personal stress would be

beneficial to the overall health.

In this chapter I discuss the rationale for the research methods necessary to

address the lack of insight surrounding the relationship between professional quality of

life, coping practices, resilience, and hardiness among government policy and law

enforcers. A goal of this study was to gain preliminary knowledge to help practitioners

and experts create future studies that focus on increasing mental fortitude. There will also be an in-depth discussion on the methodology and threats to validity in this research.

Research Design and Rationale

In this quantitative study I sought to explore professional quality of life facets and coping styles as predictor variables associated with resilience and hardiness among government policy and law enforcers. The goal of the study is to discover statistically significant relationships, using active and separated U.S. government policy and law enforcers from the state, local, and federal forces (i.e., military, corrections, uniformed policing divisions of federal agencies, special agents, investigators, etc.). A probable convenience sample from the Eastern portion of the nation and a high share of respondents in the New England area is expected to account for approximately a quarter of respondents. I examined compassion fatigue (comprised of burnout and secondary traumatic stress) and compassion satisfaction and coping styles that include problem-focused coping, emotion-focused coping, and less productive forms of managing for its independent variables. Measurements of these elements will come from the ProQOL scale (Stamm, 2010) and the COPE inventory scale (Carver, Scheier, & Weintraub, 1989), respectively. The determination of the dependent variables for this study comes from the resilience scale (Wagnild, 2009) and the DRS 15- (Bartone, 1984, 2008) for resilience and hardiness respectively.

The overarching questions answered by the study derive from the scales associated with the surveys. Research questions assess coping styles through Carver's

COPE inventory scale, hardiness through Bartone's DRS 15-R, resilience through Wagnild and Young's resilience scale, and compassion satisfaction, burnout, and secondary traumatic stress through Stamm's ProQOL scale.

The hypotheses surrounding the associations between resilience and hardiness derive from the notion that there is a direct relationship between resilience, hardiness, and sensation seekers for hardiness (low control and commitment and high challenge). There is also an assumption that resilience and rigid control for hardiness (high control and commitment and low challenge) have an indirect relationship. Previous research supports these assumptions.

Hardiness (commitment, challenge, control), resilience, and sensation seekers for hardiness (low control and commitment with high levels of challenge) have a direct relationship with one another. High levels of resilience have an association with high morale, psychological well-being, satisfaction with life, and feelings of purposefulness (Wagnild & Young, 1993; Wagnild & Young, 2009). Similarly, high hardy persons believe they can influence the events in their lives. Such persons are deeply involved in or committed to activities, viewing changes as exciting challenges that cause personal development (Kobasa, 1979). The concepts found in high hardy and high resilient individuals align with those that Johnsen et al. (2014) found for sensation seekers, who have low psychological distress and a high quality of life. The favorable characteristics of these traits shift when levels become low. Low levels of resilience have an association with depression, low morale, dissatisfaction with life, and feelings of purposelessness

(Wagnild & Young, 1993; Wagnild & Young, 2009). Likewise, individuals with low hardiness tend to become ill more often and respond poorly to stress (Kobasa, 1979).

Rigid control for hardiness (medium to high control and commitment with low levels of challenge) has an indirect relationship with resilience. As Johnsen et al. (2014) found, individuals with these hardiness facets have high psychological distress and low quality of life. Likewise, individuals with low resilience tend to have more negative feelings and a pessimistic outlook toward life (Wagnild & Young, 1993; Wagnild & Young, 2009).

Using the premises set out by the above relationships, I designed two research questions to determine the interactions between the independent variable (coping mechanisms and professional quality of life) and dependent variables (resilience and hardiness). Multiple hypotheses for each research question are listed to investigate connections thoroughly.

RQ1: How do coping mechanisms affect resilience and hardiness facets among those enforcing policy and law?

- What is the relationship between problem-focused coping and resilience?
- What is the relationship between problem-focused coping and hardiness facets?
- What is the relationship between emotion-focused coping and resilience?
- What is the relationship between emotion-focused coping and hardiness facets?

- What is the relationship between less productive coping practices and resilience?

- What is the relationship between less productive coping practices and hardiness facets?

$H_0 1$: Coping mechanisms have no statistically significant relationships with resilience and hardiness facets.

$H_1 1$: Problem-focused coping has a direct relationship with resilience, hardiness, and sensation seekers for hardiness (low control and commitment with high levels of challenge).

$H_2 1$: Problem-focused coping has an indirect relationship with rigid control for hardiness (medium to high control and commitment with low levels of challenge).

$H_3 1$: Emotional-focused coping has an indirect relationship with hardiness and resilience, and a direct connection with rigid control for hardiness (medium to high control and commitment with low levels of challenge).

$H_4 1$: Emotion-focused coping has an indirect relationship with sensation seekers for hardiness (low control and commitment and high challenge.

$H_5 1$: Less productive coping practices have an indirect relationship with sensation seekers for hardiness (low control and commitment and high challenge).

$H_6 1$: Less productive coping practices have an indirect relationship with hardiness and resilience while having a direct link with rigid control for hardiness (medium to high in control and commitment and low in challenge).

RQ2: How do professional quality of life factors (compassion satisfaction and compassion fatigue) affect resilience and hardiness profiles among those enforcing policy and law?

- What levels of resiliency have a relationship with compassion satisfaction?

- What levels of resiliency have a relationship with compassion fatigue?

- What levels of hardiness have a relationship with compassion satisfaction?

- What levels of hardiness have a relationship with compassion fatigue?

- What combinations of hardiness facets have a relationship with compassion fatigue?

- What combinations of hardiness facets have a relationship with compassion satisfaction?

$H_0 2$: There is no relationship between professional quality of life (compassion satisfaction and compassion fatigue) factors and resilience and hardiness profiles.

$H_1 2$: Burnout and secondary traumatic stress have an indirect relationship with resiliency, hardiness, and sensation seekers for hardiness (low control and commitment and high challenge).

$H_2 2$: Burnout and secondary traumatic stress have a direct relationship with rigid control for hardiness (medium to high control and commitment and low challenge).

$H_3$2: Compassion satisfaction has a direct relationship with resiliency, hardiness, and sensation seekers for hardiness (low control and commitment and high challenge).

$H_4$2: Compassion satisfaction has an indirect relationship with rigid control for hardiness (medium to high control and commitment and low challenge).

Quantitative analysis is the best form of statistical investigation to determine relationships between variables. The use of multiple regression and multivariate analysis of variance can help examine associations between rates of the dependent variables and the impact that each of the independent variables has on them through the assigned scales. In this study, I sought to understand the effect that professional quality of life and coping practices have on mental fortitude. Specifically, the study will investigate combinations of compassion fatigue, compassion satisfaction, problem-focused coping, emotion-focused coping, and less productive forms of coping and their influence on producing different standards of resilience and hardiness. The goal was to determine which independent variables are responsible for mental fortitude among people enforcing policy and law.

Unlike many studies regarding professional quality of life facets, resilience, coping, and hardiness factors, this study desires to focus specifically on typical government employees that enforce policy and law professionally. This study is very interested in advancing knowledge on coping and professional quality of life aspects by identifying statistically significant relationships with resilience and hardiness. The hope

is to help agencies, mental health professionals, and trainers gain preliminary knowledge to create better future studies that focus on increasing the psychological fortitude. Since this study will examine participants in a snapshot of time, there are currently no time and resource constraints that can hamper the effectiveness and validity of the data.

Methodology

Quantitative analysis can best answer questions regarding the connection between mental fortitude and professional quality of life. The use of multiple regression analysis allows for an investigation of both of the independent variables with each of the dependent variables. The method of multivariate analysis (MANOVA) allows for the identification of dominant patterns within data and can further supplement the regression results. This study uses predictor variables measured by ProQOL (Stamm, 2010) and the BriefCOPE, a shortened version of the COPE inventory (Carver, Scheier, & Weintraub, 1989) to determine states of compassion and coping patterns, respectively. The true resilience scale (Wagnild, 2009) and the DRS 15-R (Bartone, 1984, 2008) gather information for the independent variables, assessing mental fortitude through resilience and hardiness, respectively. Individually, the relationship between resiliency and hardiness theories and coping mechanisms seeks evaluation through multivariate analysis using data from the true resilience scale and the DRS 15-R to determine any significant relationships between respondent results from the BriefCOPE. Multivariate analysis investigates the relationship between compassion satisfaction and compassion fatigue

with hardiness and resilience. Data from the true resilience scale and the DRS 15-R

determines any significant patterns between results from the ProQOL.

Population, Sampling, and Sampling Procedures

The G*Power test provides information related to necessary participant size.

According to Faul, Erdfelder, Lang, and Buchner (2007), an a priori power analysis

should be used to determine a suitable sample size and a multiple linear regression that

employs a fixed model with an R^2 increase. As these researchers point out, regression

tests of this nature require a Cohen's effect size (f^2) of either 0.02, 0.15, or 0.35, denoting

small, medium, and large effect sizes respectively (p. 180). This study uses a medium

effect size (f^2) of 0.15, an αv error probability of 0.05, and power (1-β) error probability

of 0.95, as recommended values for the Social Sciences. The G*Power calculator

requires a critical F-value of 2.2829, a non-centrality parameter λ of 20.7000, a

numerator df of 5, a denominator df of 132, and a total population of 138. Since the

sample size was derived by G*Power, it should be doubled. Doubling the sample

increases it to 276, and yields a critical F-value of 5.2077, a non-centrality parameter λ of

41.4000, a numerator df of 5, a denominator df of 270, and α error probability of 0.0001.

The specific population of focus for this research contains professionals that are

active and separated government policy and law enforcers from the state, local, and

federal forces (i.e., military, corrections, uniformed policing divisions of federal agencies,

special agents, investigators, etc.) in the United States. There is a likely convenience

sample from the Eastern portion of the nation with most respondent numbers in the New

England area. Recruitment of individuals that fall into this group will come from electronic and physical advertisements (i.e., Facebook, LinkedIn, flyers posted in public places, etc.) and by word-of-mouth. Since the number of participants that must volunteer needs to be at least 276 to achieve a statistical power of 0.95, it is difficult to determine how many individuals from specific agencies, groups (i.e., active, separated, state, local, federal), and locations will comprise the final population. All persons classified as specialized respondents can participate since resilience and hardiness scores will not initially be known. The only requirement for a government policy and law enforcer to join is that he or she is willing to volunteer his or her time to the study to honestly answer survey questions.

Participants in this study must work or have worked in some capacity enforcing policy and law for any level of the government. Law and policy enforcement includes 2 larger categories. Federal, which comprises activities such as corrections, investigatory roles, police response and patrol, court operations, inspections, criminal investigation and enforcement, and security and protection. To date, there are 65 Federal agencies in the United States and 27 Offices of Inspector General that perform these functions in various capacities. For purposes of this study, active and separated government agents enforcing policy and law can have experience from any federal agency, including the military. State and local professional activities such as corrections, investigatory roles, police response and patrol, court operations, inspections, criminal investigation and enforcement, and security and protection.

Recruitment, Participation, and Data Collection

To determine the relationship between professional quality of life, mental fortitude, and coping mechanisms, this study contains professional responders and employees that are active or separated from jobs requiring them to enforce policy for the government at the state, local, and federal level (i.e., military, corrections, uniformed policing divisions of federal agencies, special agents, investigators, etc.) from the United States as participants. Intended recruitment strategies include electronic and physical advertisements (i.e., Facebook, LinkedIn, flyers posted in public places, etc.) and word-of-mouth. It is likely that there may be several individuals from the Eastern part of the United States, especially from the New England area. All participants for the study receive electronic forms that describe the procedures for informed consent. Within these documents, there is a reminder that participation is entirely volunteer, and that respondents may cease participating in the study at any point without penalty. Data collected from participant responses is completely anonymous and not tied to anyone in any way. Individuals are randomly assigned numbers and given electronic questions from the four surveys (i.e., RS-14, BriefCOPE, ProQOL, and DRS 15-R).

The consent form for the study provides information for debriefing. Respondents are encouraged to utilize print or save this form, as it contains important resources and contact information that participants may want to use afterwards. This form informs participants about the anonymous nature of the data collection, the confidentiality of responses, and the lack of follow-up for further data collected that the study possesses.

The form also informs participants about mental health options, should there be interest in additional mental health counseling. There is also an inclusion of information on local drug and alcohol counseling, and other related outreach groups if participants would like more health-related support.

Instrumentation and Operationalization of Constructs

The four scales in the study have high reliability and validity. The BriefCOPE and ProQOL measure independent variables. The BriefCope comprises 14 scales that have the following Cronbach's alphas (Carver, 1997):

- Planning at 0.73 (problem)

- Positive reframing at 0.64 (emotion)

- Acceptance at 0.57 (emotion)

- Humor at 0.73 (emotion)

- Religion at 0.82 (emotion)

- Using emotional support at 0.71 (emotion)

- Using instrumental support at 0.64 (problem)

- Denial at 0.54 (less constructive)

- Active coping at 0.68 (problem)

- Self-distraction at 0.71 (problem)

- Venting at 0.50 (less constructive)

- Substance use at 0.90 (less constructive)

- Behavioral disengagement at 0.65 (problem)

- Self-blame at 0.69 (less constructive)

The ProQOL has the following inter-scale correlations:

- A 2% shared variance (r= -0.23; co-σ = 5%; n=1187) with secondary traumatic stress

- A 5% shared variance (r= -0.14; co-σ = 2%; n=1187) with burnout

The scale also has the following Cronbach's alphas for its three scales:

- Compassion satisfaction at 0.88 (n=1130)

- Burnout at 0.75 (n=976)

- Compassion fatigue at 0.81 (n=1135) (Stamm, 2010)

The RS14 and DRS 15-R measures dependent variables. The RS 14 comprises five components and has Cronbach's alphas that range from 0.89 to 0.96. The shortened version of the scale is strongly correlated with the original scale as well at r = 0.97, p > 0.001 (Wagnild & Young, 1993, 2009; The Resilience Center, 2015). The DRS 15-R has an internal consistency of 0.83, and a test-retest reliability coefficient of 0.78. The scale contains the following Cronbach's alphas for its three facets:

- Control at 0.71

- Challenge at 0.77

- Commitment at 0.71 (Bartone, 1995, 2008)

The ProQOL, a free tool, has a version of itself used in 46 of the 100 papers in the Published Literature in Posttraumatic Stress Disorder (PILOTS database). The original version of the tool, known initially as the compassion fatigue self test, was the creation of

Dr. Charles Figley in the late 1980s. In 1988, Figley began collaborating with Dr. Beth

Hudnall Stamm, who in 1993 added the concept of compassion satisfaction to the scale

and changed the name to the compassion satisfaction and fatigue test. During the late

1990s, there were several versions of this test with some that were Figley and Stamm,

and others that were Stamm and Figley. In the late 1990s, the measure was renamed the

professional quality of life scale and became Stamm's scale solely.

Stamm used the ProQOL to gather research on workers and volunteers that

perform duties in helping professions related to individual, community, national, and

international crises (p. 12). According to Stamm (2010), the scale is suited for all helping

professionals such as public service workers, social workers, therapists, healthcare

professionals, teachers, clergy members, airline and other transportation employees,

police officers, firefighters, attorneys, and disaster-site cleanup crews (p. 8). To assess the

professional quality of life through compassion, the ProQOL measures a participant's

relationship with compassion fatigue (consisting of burnout and secondary traumatic

stress) and compassion satisfaction. According to Stamm, compassion is affected by three

areas: an individual's characteristics, an individual's "organizational and task-wise" work

environment, and an individual's exposure to primary and secondary trauma in the work

environment (p. 10).

As Stamm (2010) points out, the use of the ProQOL in over 200 published papers

and more than 100,000 articles proves its validity. The three scales (i.e., one for

compassion satisfaction and the two that make compassion fatigue) comprised in the

ProQOL measure different constructs. The inter-scale correlation between the compassion fatigue scale and secondary traumatic stress is 2% shared variance (r = -0.23; co-σ = 5%; n = 1187), while there is 5% shared variance between the compassion fatigue scale and burnout (r = -0.14; co-σ = 2%; n = 1187). It is important to note that while measuring two different aspects (burnout addresses fear, secondary traumatic stress does not), there is a shared variance of 34% (r = 0.58; co-σ = 34%; n = 1187) between secondary traumatic stress and burnout. Stamm believes this relationship is due to the commonality of distress that is exhibited in both (p. 13).

The ProQOL uses an ordinal scale of one to five (i.e. *never* to *very often*) that respondents use to assess the degree that the following 30 statements apply to them:

1. I am happy.

2. I am preoccupied with more than one person I help.

3. I get satisfaction from being able to help people.

4. I feel connected to others.

5. I jump or am startled by unexpected sounds.

6. I feel invigorated after working with those I help.

7. I find it difficult to separate my personal life from my professional life.

8. I am not as productive at work because I am losing sleep over traumatic experiences of a person I help.

9. I think that I might have been affected by the traumatic stress of those I help.

10. I feel trapped by my job.

11. Because of my job, I have felt "on edge" about various things.

12. I like my work enforcing policy and law.

13. I feel depressed because of the traumatic experiences of the people I help.

14. I feel as though I am experiencing the trauma of someone I have helped.

15. I have beliefs that sustain me.

16. I am pleased with how I am able to keep up with professional techniques and

    protocols.

17. I am the person I always wanted to be.

18. My work makes me feel satisfied.

19. I feel worn out because of my work.

20. I have happy thoughts and feelings about those I help and how I could help

    them.

21. I feel overwhelmed because my work load seems endless.

22. I believe I can make a difference through my work.

23. I avoid certain activities or situations because they remind me of frightening

    experiences of the people I help.

24. I am proud of what I can do to help.

25. As a result of my professional role, I have intrusive, frightening thoughts.

26. I feel "bogged down" by the system.

27. I have thoughts that I am a "success" professionally.

28. I can't recall important parts of my work with trauma victims.

29. I am a very caring person.

30. I am happy that I chose to do this work.

Carver, Scheier, and Weintraub created the COPE Inventory in 1989 to serve as a multidimensional method to assess responses to stress. The basis for this scale comes from ways of coping, built by Folkman and Lazarus in 1980. The survey also uses two foundational terms of the COPE inventory: *problem-focused coping* and *emotion-focused coping* (Carver, Scheier, & Weintraub, 1989, p. 267). The Lazarus model of stress provides the theoretical underpinnings of the COPE inventory. The scale has added contributions from behavioral self-regulation models from previous works Scheier and Carver collaborated on in 1981, 1983, 1985, and 1988 (Carver, Scheier, & Weintraub, 1989, p. 268).

According to Carver, Scheier, and Weintraub (1989), the COPE inventory contains 13 conceptually distinct scales that focus on the properties of coping strategies. In framing the questions that relate to the scales, the researchers took special care to only include items that can be answered from both a situational coping standpoint (i.e., episodic and more extended period) and a dispositional coping standpoint (pp. 270-271). To test the scale, the researchers conducted three studies with separate purposes. The first investigation assisted in the development and refinement of the scale items. The second

analysis showcased the validity of the scales and theoretical underpinnings through correlations. The last examination used the tool on participants to assess their coping responses during a stressful episode (pp. 271-280).

To confirm the distinctness of the scales used in Study one, Carver et al. (1989) performed a second order factor analysis. The results of the factor analysis yielded the following four factors with eigenvalues greater than 1:

1. A factor using active coping, planning, and suppression of competing activities;

2. An element composing denial and behavioral and mental disengagement;

3. A factor incorporating the seeking of social support and focus on emotions; and

4. A component containing restraint coping, acceptance, and positive reinterpretation and growth (p. 274).

To determine the soundness of the scales used in the COPE inventory, Study two employed the measure along with different singular or multiple scales. During the three-week period of two group sessions that assessed correlations (no participant used all the scales), the scales the researchers chose from were as follows with the intended purpose: (a) *optimism* via the life orientation test; (b) *self-esteem* via Rosenberg's 1965 10-item self-esteem scale; (c) *locus of control* via Rotter's 1966 forced-choice internal-external locus of control scale; (d) *hardiness* via the personal views survey; (e) *type A tendencies* via Jenkins activity survey (student version); (f) *trait anxiety* via state-trait anxiety

inventory (trait portion only); (g) *monitoring and blunting* via the Miller behavioral style scale; and (h) Marlowe-Crowne social desirability scale to assess the degree COPE inventory scales are associated with the *tendency to portray oneself in an overly favorable light* (p. 275)

> The researchers found that:
>
> 1. Active coping and planning have a positive correlation with optimism, the locus of control, self-esteem, hardiness, and type A.
>
> 2. Positive reinterpretation and growth have a positive correlation with optimism, the locus of control, self-esteem, and hardiness.
>
> 3. Denial and behavioral disengagement have a positive correlation with trait anxiety.
>
> 4. Denial and behavioral disengagement are negatively correlated with optimism, the locus of control, self-esteem, hardiness, and type A.
>
> 5. Focusing on and venting emotions have an inverse association with locus of control.
>
> 6. Focusing on and venting emotions have a positive correlation with trait anxiety and monitoring.
>
> 7. Monitoring is positively related to seeking instrumental social support and connected with turning to religion.
>
> 8. Monitoring is negatively associated with behavioral disengagement (pp. 275-276).

For study three, the researchers employed the COPE inventory to assess situational or time-limited episodes. This investigation is different from that of the relatively stable dispositional coping tendencies evaluated in study one and study two. Similar to study two, participants were placed in groups twice during a three-week period. Respondents were to discuss how they coped with an extremely stressful episode from the past two months. The participants completed situationally framed items from the COPE inventory and chose from a list of responses how much they relied on each coping strategy during the episode. From this study, the researchers determined that the situational version of the COPE inventory has an interpretable factor structure. These findings are similar to the dispositional version, with alpha reliability levels that are equally as high or higher, and factors that correlate in similar patterns (p. 279).

This study employed the shortened version of the COPE inventory, known as the BriefCOPE (Carver, 1997). This scale reduces the burden of completing the full COPE, which Carver admits participants found to be redundant and would grow impatient with using. For this reason, Carver cut the BriefCOPE down to 14 scales that had two items each. The scale still uses a Likert measurement ranging from one (*I haven't been doing this at all*) to four (*I have been doing this a lot*). For the BriefCOPE, Carver omitted two scales contained in the original COPE (restraint coping and suppression of competing activities scales). Carver also refocused three scales, believing these five scales in their original form either did not prove useful in previous studies, exhibited redundancy, or needed editing to be stronger (p. 94).

Testing of the BriefCOPE for reliability and validity occurred using a 168-person

sample of Hurricane Andrew survivors that were in recovery. Before this experiment, the

scale underwent significant changes to increase reliability and validity. The positive

reinterpretation and growth scale was changed to positive reframing, to eliminate the

growth element. The focus on and venting of emotions scale became the venting scale.

Carver believed that the aspect of distress was showing too much in the outcome of the

scale, due to the focusing element that was driving respondents towards pain in their

responses. Lastly, the mental disengagement scale became the self-distraction scale to

better express that the goal of the scale was to measure how respondents were engaging

in activities to distract themselves from stressors. A new survey was also added to the

BriefCOPE to reflect self-blame. Carver felt this concept is a predictor of poor

adjustment when individuals attempt to manage stress (p. 95).

Respondents will use the ordinal scale from one to four, as previously described,

to assess the applicability of the following 28 statements for the BriefCOPE:

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.

The Dispositional Resilience Scale, also known as the DRS 15-R, was created as a shortened version by Bartone in the 1990s. Bartone used Army Reservist and Army Special Forces candidates from the Gulf War to test the tool. The instrument measures personal qualities associated with psychological hardiness, specifically commitment, control, and challenge. The scale has an internal consistency of $\alpha=0.82$, a test-retest reliability coefficient of 0.78, and criterion-related validity across multiple samples (Bartone, 2007). Notable researchers recognized Bartone's scale as reliable and valid. Maddi, Kobasa, and University of Chicago students initially used a lengthier version of the tool, with 53 items, in the early 1980s to measure the hardiness of Bell executives in Illinois.

Starting in 1989, Bartone perfected his original scale further. He eliminated poor items and added new ones to create a 50-item survey for use on city bus employees. Psychometric refinement of the tool continued into the early 1990s, when military samples were used, leading to a 45-item scale, a 30-item scale, and finally a 15-item scale. The 15-item measure came about due to mixed gender military samples, and further refinement of the item, reliability, and validity analyses (Bartone, 1995, pp. 1-2; Bartone, 2007, p. 943). Regression analysis scores from the scale support the fact that people scoring high on the measure are more likely to succeed in stressful and rigorous situations. Low hardiness scores predict for symptoms associated with conditions such as

depression (Bartone, 2007, p. 3). This association supports Bartone's (1995) research that hardiness interacts with stress to produce health outcomes.

Wagnild and Young created the resilience scale in the late 1980s and early 1990s. The scale helps to investigate the relationship between resilience and psychosocial adaptation. It aids in the identification of both resilient individuals and those with the capacity for resilience (Wagnild & Young, 1993, pp. 165-166). The Resilience Scale yielded from a 1987 qualitative study Wagnild and Young conducted on 24 women who successfully adapted after experiencing a significant life event. In its first version, the scale contained 50-items derived from the women's statements during the qualitative study. After analysis of these items, the tool reduced to 25-items. Based off of the data and the theoretical structure of the study, the researchers identified the following 5 interrelated components to constitute resilience: perseverance, meaningfulness, equanimity, self-reliance, and existential aloneness (Wagnild & Young, 1993, p. 167; Wagnild & Young, 2009, p. 106). There is also a shortened version created in 2009, known as the RS14, due to it containing 14-items. It is strongly correlated with the 25-item scale ($r = 0.97$, $p > 0.001$) and has high reliability (Cronbach's alpha ranges from 0.89 to 0.96).

To confirm the soundness of the resilience scale, Wagnild and Young conducted a pilot study and then used the instrument on five subsequent examinations. To initially establish content validity, the researchers used an a priori approach for the construction of items on the resilience scale. The identification of elements came from accepted

resilience definitions and interviews of persons characterized as exhibiting resilience. These components were reviewed by two psychometricians and two researchers to perfect the wording. The pilot study investigated the clarity and readability of the items, specificity of directions, and initial reliability on a group of 39 undergraduate nursing students. From this pilot study, the scale showed an internal consistency reliability coefficient of 0.89. The researchers then conducted five studies to confirm internal consistency, test-retest reliabilities (correlations ranged from 0.67 to 0.84 at $p<0.01$), construct validity, and concurrent validity (Wagnild & Young, 1993, pp. 167-168).

To establish the validity of the resilience scale and further explore the psychometric properties, Wagnild and Young used the instrument against four other well-established apparatus. This study used a randomly selected sample of 810 community-dwelling older adults (53 to 95 years old with a mean age of 71.1 years) from the readership of a significant senior citizen periodical in the Northwest. The research used the following four validated and reliable instruments:

1. The life satisfaction index A (LSI-A) measured life satisfaction. This scale determined concurrent validity under the belief that a positive correlation should exist between resilience and life satisfaction.

2. The Philadelphia geriatric center morale scale (PGCMS) assessed morale. This instrument established concurrent validity under the belief that higher resilience scores correlate with higher morale scores.

3. The Beck depression inventory (BDI) measured depression. This survey confirmed concurrent validity under the notion that a negative correlation should exist between depression and resilience.

4. The self-report method assessed physical health using one to five score points. This method determined concurrent validity under the notion that a positive correlation between health and resilience should exist.

Overall, the study determined that the resilience scale showed no significant relationships between age, income, gender, and education. Internal consistency reliabilities for the four scales were acceptable. Alpha coefficients measured at 0.78 for the PGCMS, 0.78 for the BDI, and 0.77 for the LSI-A. Reliability of the resilience scale was high. The alpha coefficient measured at 0.91. Item-to-total correlations were all significant at $p \leq 0.001$, and ranged from 0.37 to 0.75, with the majority falling between 0.50 and 0.70 (Wagnild & Young, 1993, pp. 171-172). Concurrent validity existed, with all hypotheses confirmed and statistically significant at $p \leq 0.001$. Higher resilience scores showed a relationship with lower depression scores, and high life satisfaction, physical health, and morale scores (Wagnild & Young, 1993, p. 173).

Theoretical definitions of resilience had a multidimensional construct, with Personal Competence and Acceptance of Self and Life emerging as factors. These two constructs showed the following characteristics:

1. Comprised of 17 items, personal competence associated resilience with qualities of independence, determination, self-reliance, mastery, resourcefulness, invincibility, and perseverance.

2. Containing 8 items, acceptance of self and life linked resilience with qualities of flexibility, balance, and a balanced perspective of life (Wagnild & Young, 1993, pp. 174-175).

Wagnild and Young further tested the validity and reliability of the resilience scale in 2009, by evaluating the results of studies using the instrument from 1999 to 2007. To showcase the transferability and generalizability of the tool, Wagnild and Young chose 12 scientific works under the direction of various researchers that utilized the instrument with multiple populations:

1. A 1999 American study conducted on 51 at-risk adolescents aged 16 to 18, centralizing around participants' perceptions of resilience.

2. A 2000 American study conducted on 100 Irish immigrants to the United States with a mean age of 31 years. The study examined the relationship between resilience and psychological well-being, life satisfaction, and demographic variables.

3. A 2001 American study conducted on 59 homeless adolescents, with ages ranging from 15 to 22 years and a mean age of 18.6 years. The research determined viable predictors for resilience by examining the relationship between resilience and selected risk and protective factors.

4. A 2002 American study conducted on 67 mothers, with ages ranging from 27 to 44 years and a mean age of 33.1 years, that possessed preschool children. The research examined the relationships between resilience, family health-promoting lifestyle practices, and family health work.

5. A 2003 American study conducted on 50 battered women living in shelters, with ages ranging from 19 to 60 years and a mean age of 33.9 years, examining human responses to trauma.

6. A 2004 American study conducted on 91 young military wives aged 18 to 28 years who had undergone a 4-week childbirth education course focusing on postpartum role adaption.

7. A 2004 Canadian study conducted on 41 single-parent adolescent mothers, with ages ranging from 18 to 23 years and a mean age of 20 years, investigating the mothers' resilience, health-promoting lifestyle practices, and family health promotion.

8. A 2004 Australian study conducted on 83 older adults, with ages ranging from 58 to 85 years and a mean age of 71.6 years, examining the relationship between life adversity and resilience in late life.

9. A 2005 Swedish study conducted on 125 older adults, with ages ranging from 85 to 95 years and a mean age of 89 years, studying the relationship between perceived physical and mental health and self-transcendence, resilience, purpose of life, and sense of coherence.

10. A 2005 American study conducted on 497 older adults living in a planned community, with ages ranging from 39 to 92 years and a mean age of 65.4 years, that studied the relationship between forgiveness and resilience.

11. A 2005 German study conducted on 599 older adults with a mean age of 69.6 years that examined resilience as a protective personality factor for physical well-being.

12. A 2007 American study conducted on 20 older women living in a frontier community, with ages ranging from 66 to 85 years and a mean age of 75.7 years. The research examined the relationships between resilience, self-reported health status, and health-promoting behaviors (Wagnild & Young, 2009, pp. 107-111).

From the 12 studies assessed, Wagnild and Young maintained their claim of high internal consistency, instrument validity, and construct validity regarding the resilience scale. In 11 of the scientific works, Cronbach's alpha coefficient ranged from 0.85 to 0.94, while the 12th study reported an alpha coefficient of 0.72 (Wagnild & Young, 2009, p. 112). Results from the 12 studies established instrument and construct validity. The hypotheses of all 12 studies were statistically significant, jointly claiming the following: (a) resilience scale scores are inversely related to hopelessness, anxiety, loneliness, stress, and depression; and (b) a positive correlation exists between psychological well-being, health-promoting activities, forgiveness, morale, purpose in life, sense of coherence, and

resilience scale scores for individuals identified as resilient (Wagnild & Young, 2009, p. 112).

  Operationalization. For the study's focus on coping styles and professional quality of life facets as predictors for hardiness and resilience, two scales measure the independent variables, and two scales assess the dependent variables. The DRS 15-R (Bartone, 1995, 2008) and the RS14 (Wagnild & Young, 1993, 2009; The Resilience Center, 2015) measures the dependent variables of hardiness and resilience, respectively. The shortened version of the COPE inventory (Carver, Scheier, and Weintraub, 1989) known as the BriefCOPE (Carver, 1997) and the ProQOL (Stamm, 2010) measures the independent variables on coping styles and compassion, respectively. Both dependent variables seek definition from their respective scales.

  The dependent variable of hardiness is assessed from interval scale known as the DRS 15-R (Bartone, 1995, 2008). *Hardiness* contains three facets: commitment, challenge, and control. There are three interval subscales for each of these facets. *Commitment* pertains to seeing the world as exciting and meaningful. *Challenge* relates to the tendency to embrace new experiences and changes as opportunities to learn and develop. The quality of *control* encompasses the self-perpetuating belief in one's ability to control, manage, or influence events (Bartone, 2008).

  The measurement of hardiness derives from the DRS 15v3.2, based on of Bartone's 2006 and 2007 research in Norway. This version of the scale contains five items each to measure commitment, challenge, and control, with six negatively-keyed

statements to maintain balance negative and positive elements. Hardiness scoring will fall

into five bands based on normative samples for both men and women: 39+ (Very High),

34-38 (High), 28-33 (Average), 22-27 (Low), and 22 and below (Very Low).

Assessment of the dependent variable of resilience is defined from the RS14

interval scale (Wagnild & Young, 1993, 2009; The Resilience Center, 2015). *Resiliency*

contains five core characteristics: perseverance, meaningfulness, equanimity, self-

reliance, and existential aloneness. *Perseverance* consists of persistence despite

discouragement or adversity; it is the self-disciplined action to carry on in the face of

hardship. *Meaningfulness* involves the sense of life having a purpose; it includes the

valuation of one's contributions to giving life meaning. *Equanimity* refers to a balanced

perspective on one's life and experiences. *Self-reliance* involves the recognition of

strengths and limitations, combined with a healthy belief of competencies and

capabilities. *Existential aloneness* consists of the sense of freedom and uniqueness; it

includes the balanced acceptance of the realization that some events in life are

experienced alone while others are shared (Wagnild & Young, 1993, pp. 167-168). On

the resilience scale's 14-item version a score of 73 or lower denotes less to more

moderate resilience, and a score of 91 or more indicates high resilience (The Resilience

Center, 2015).

Both independent variables seek definition from their respective scales. The

BriefCOPE (Carver, 2013) addresses the independent variable on coping methods. The

instrument consists of 14 interval scales that have two items each. Through the use of the

ordinal scale below, participants assign numerical values from one to four to evaluate the

degree that 28 behavioral statements align with their coping methods:

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.*

The BriefCOPE's 14 interval scales are broken into behaviors as follows:

Practices that align more with aspects of problem-focused coping consist of

active coping, planning, behavioral disengagement, and use of instrumental support. The

goal of problem-focused strategies is to reduce or remove a stressor that is controllable.

The scales associated with these behaviors have one for each action and two items in

each scale.

Practices that align more with aspects of emotion-focused coping consist of

acceptance, positive reframing, religion, humor, and use of emotional social support.

Emotion-focused strategies are effective when a stressor is uncontrollable. The scales

associated with these responses have one for each behavior and two items in each scale.

Practices that align more with aspects of less useful forms of coping consist of

substance use, denial, self-blame, and the venting. There are two items in each scale and

one scale used for each response (Carver, 2013).

There are two methods that Carver recommends that researchers can choose from

to analyze the resulting data from the COPE inventory: (a) looking at each scale

separately and determining its relationship to other variables; (b) creating second-order

factors from among the scales and using these elements as predictors (Carver, 2013, p. 3).

The ProQOL addresses the independent variable regarding professional quality of

life through states of compassion (Stamm, 2008): (a) *compassion fatigue* consists of

negative aspects associated with helping individuals that experience traumatic stress and

suffering. There are two components contained in it: burnout and secondary traumatic

stress. *Burnout* consists of anger, depression, frustration, and exhaustion. *Secondary*

traumatic stress consists of negative feelings that are driven by work-related trauma and

fear. Injury can be primary, direct, secondary, or contain aspects of both. There are 20

items on the scale associated with compassion fatigue, with 10 associated with burnout

and 10 associated with secondary traumatic stress; (b) *compassion satisfaction* consists of

the pleasure an individual derives from work. Enjoyment can encompass experiencing

joy when helping a colleague, or merely having positive feelings derived from one's

contribution to a work setting or society as a whole (Stamm, 2015). There are 10 items on

the scale that have an association with compassion satisfaction.

This study uses the ProQOL 5 English version to assess compassion. It consists of

30 statements that respondents are to assign values on an ordinal scale from one to five

on (1: *never*; 2: *rarely*; 3: *sometimes*; 4: *often*; 5: *very often*) to assess how accurately the

statements fits their feelings about helping others professionally. Specific statements

correspond to one of the three interval scales (i.e., burnout, secondary traumatic stress,

and compassion satisfaction). Scores of 43 or less have an association with low values.

Average scores will consist of 44 to 56. High levels of these elements include counts of

57 or more on the instruments (Stamm, 2009).

Data analysis plan. This study uses quantitative methods to investigate the

relationship between professional quality of life and mental fortitude. The initial intention

is to analyze data through both multiple linear regression and multivariate analysis with a

95% confidence interval and a significance level of 0.05 using IBM'S SPSS Statistical

Software.

Three different scales are necessary to answer the research question regarding the

relationship between resilience and hardiness theories and coping mechanisms. Data for

the dependent variables derive from the RS-14 and the DRS 15-R to determine the

amount of resiliency and hardiness a participant possesses, respectively. To determine if a

relationship exists between different coping mechanisms and individual levels of

resilience and hardiness, data for the independent variable comes from the BriefCOPE.

Similarly, three different scales answer the research questions regarding the

relationship between resilience and hardiness theories and professional quality of life

(i.e., compassion satisfaction, compassion fatigue). Participant results from the RS-14

and the DRS 15-R obtain the dependent variable data. To assess whether a relationship

exists between compassion satisfaction, burnout, and secondary traumatic stress with

resilience and hardiness, data for the independent variable comes from the ProQOL.

Specifically, tests will provide data for the following questions:

RQ1: How do coping mechanisms affect resilience and hardiness facets among those that enforce policy and law?

RQ2: How do professional quality of life factors (compassion satisfaction, burnout, and secondary traumatic stress) affect resilience and hardiness profiles among those that enforce policy and law?

Concerns regarding test assumptions. There is some concern that multicollinearity between predictor variables and the presence of heteroscedasticity could pose an issue. There should be no perfect linear relationship present that would cause the predictor variables to correlate too much (Field, 2013, p. 312). This occurrence could be problematic because issues with the *b* could imply that the equations are untrustworthy, or that the sample is unrepresentative of the actual population. The measure of the correlation between the predicted values of the outcome and the observed values, also known as R, may have limitations.

There are multiple ways to verify multicollinearity. SPSS can run collinearity diagnostics such as the variance inflation factor (VIF) of the linear regression (1/T, where T represents the tolerance statistic), tolerance statistics (1/VIF or $1-R^2$), correlation matrixes, or condition indexes (Statistics Solutions, 2016a, Multicollinearity is Checked Against 4 Key Criteria section). For the correlation matrix, Pearson's bivariate correlation could be used to determine if multicollinearity is present, causing a relationship between two of the predictor variables. Should multicollinearity exist, centering the data by deducting the mean score will correct it.

There are several processes to determine if heteroscedasticity exists within a study, as well as a few different ways to correct it. The most accessible visual way to identify heteroscedasticity is to create a scatterplot. Using this method will place the residuals against the predicted values of the dependent variables to see if a cone-shaped pattern recognizing heteroscedasticity is present (Statistics Solutions, 2013). Another simple option is to conduct Levene's test using a one-way ANOVA on the deviation scores (i.e., the absolute difference between each score and the mean of the group from which it came) with a null hypothesis stating that the variances in different groups are equal. If the result of the test is significant with p not equal to 0.05, rejection of the null hypothesis can occur for the variances are significantly different with heteroscedasticity. If Levene's test is non-significant with p >0.05, then the differences are roughly equal (Field, 2013, p. 193).

There are multiple paths for correcting heteroscedasticity. The model itself may need fixing; essential variables may be missing from the model, there could be subgroup differences, the effects of variables may not be linear, or there may be some other issue that relates to the appropriateness of the model (Williams, 2015, p. 6). Once an investigation into this is exhausted, a possible fix for heteroscedasticity is to use weighted least squares regression by weighting each case with a function of its variance (Field, 2013, p. 311). Many researchers prefer to complete the weighted least squares process in SPSS because it helps to determine the best weighting scheme, unlike other programs such as Stata (Williams, 2015, pp. 15-16). The weighted least squares method is a

difficult option to employ but is beneficial to solving the issue if it works correctly. The problem with the weighted least squares method is knowing, or being able to identify or justify through theory, the weighted amount that should be applied (Williams, 2015, p. 8).

After exploring various ways to correct the model itself, the use of robust standards errors is another option to fix heteroscedasticity (Williams, 2015, pp. 6-8). Huber-White's Robust Standard Errors Method can analyze the standard errors. This process of examination can be complicated in SPSS, which not equipped to carry out the method with continuous data. A possible way to get around the SPSS issue is to put the data into Excel to obtain robust standard errors. Stata can also perform the Huber-White's Robust Standard Errors Method.

A linear relationship between the independent and dependent variables must also be determined to assess model fit. Scatter plots can verify linearity. Since multiple linear regression is extremely sensitive to outliers, this step can also help determine if there are any present. It is recommended to remove outliers from the data set, as they will inflate or deflate a parameter such as the mean of the sample. The rationale of this is that the mean of the sample is supposed to be representative of the population, and the outlier is biasing the sample. Outliers will also affect the sum of squared errors, standard deviation, standard error estimate, and confidence intervals around the parameter estimate. Primarily, because these figures are sequentially used to determine one another, outliers are incredibly problematic, biasing a series of subsequent and essential figures (Field, 2013, p. 167).

Multivariate normality must also exist between variables. This concept is vital to assure the accuracy of the confidence intervals around the parameter estimates, such as the *b* in model equations or the mean. In turn, the normalcy of the estimate related to the sampling distribution is extremely important to ensure the validity of significance tests for models. Similarly, the normality of the residuals or error in the model equations is also necessary to maintain accurate parameter estimates (Field, 2013, pp. 168-169). However, in regards to the application of central limit theorem, there are some truths to remember. Often, the larger the sample size, the more normal the distribution will appear. Thus, if the distribution seems to be non-normal with a given sample size, a possible way to correct this is to increase the sample size until the distribution appears more normal. With this said, this may also help to correct for any skewness or kurtosis that may be present, keeping the distribution from looking to be normally distributed. If a sample is large enough, the shape of a data distribution will not affect significance tests. Thus, normalcy matters little in this regard with large samples. The method of least squares can be used to garner an estimate of the model parameter that minimizes error. Therefore, the linear model can be fitted in this regard, without relying solely on normality (Field, 2013, pp. 170-172).

The determination of normality can also be achieved visually through P-P plots, Q-Q plots, and histograms. P-P plots and Q-Q-plots are similar in interpretation, with deviations of dots from the diagonal line representing departures from normality. The main difference between the choice of whether to use a P-P plot or a Q-Q plot rests on the

amount of data. The more data points to plot, the more worthwhile the use of a Q-Q plot becomes for observed quantiles are plotted as individual points. With this said, if a reasonably small amount of data is needed, a P-P plot can be used instead, which will merely plot every score point (Field, 2013, p. 185). As for the employment of a histogram with a fitted line, a simple histogram that focuses on the frequencies of scores for a single variable or a stacked histogram that focuses on grouping variables can be used depending on the type of study. Through the use of the fitted line to the data represented on the histogram, the normalcy of the distribution can be relatively easy to identify (Field, 2013, pp. 127-131).

Threats to Validity

Validity in an experiment relates primarily to the instruments and methods used to extract and manipulate data. It is difficult for researchers to obtain predictive validity when intangible concepts such as evaluating perceptions of reality amongst participants are necessary for analysis. The scales used to investigate the relationship between professional quality of life and mental fortitude have high validity and reliability (Carver, 1997, 2013; Stamm, 2008, 2015; Wagnild, 2015; Bartone, 2008, 2010). While both these methods of analysis chosen to examine associations in the data cannot correctly evaluate feelings and beliefs, they are both adequate for modeling acceptable representations of data associated with them. Multiple regression predicts characteristics off of objective criteria. Multivariate analysis can also realistically model less measurable constructs. (Field, 2013, pp. 12-13).

Threats to External Validity

A primary component of external validity rests in sound sampling that allows for generalizability (Trochim, 2006k). Study respondents are professional responders that currently work or have worked enforcing government policy and law from the state, local, and federal forces (i.e., military, corrections, investigators, special agents, security, and protection, etc.). The assumption is that many of these respondents may be from the Eastern part of the United States with the many possibly coming from the New England area. A possible convenience population in the Greater Boston and Boston areas may need to be used to obtain enough participants for statistical power. The convenience population may pose a threat to generalizability. However, if this were to occur, the State of Massachusetts is regionally known for its diversity.

Massachusetts is home to individuals of many backgrounds, experiences, cultures, ethnicities, and economic and education levels. The characteristics of the State offer professional responders a variety of opportunities to respond to several different types of incidents containing individuals that are tourists, longtime residents, transplants, refugees, illegal sanctuary aliens, and immigrants. The State lays claim to large portions of historical land that is urban, rural, and suburban. It is a part of the country that enjoys four seasons and has a considerable amount of biodiversity with its mountains, woods, and ocean coastlines. Massachusetts is also home to numerous industries and businesses, with some major and growing and others smaller and stable.

While it is evident that Massachusetts does not share its story with every State in America, its unique characteristics allow for a diverse population of government employees available for research. Massachusetts, being considered amongst some of the wealthier States in the nation, can potentially have opportunities for different types of training that other States may not be able to finance. Participation in specialized training can further increase the resilience and hardiness of the respondent group, which can be helpful for research. Proximal similarity for generalizability is still possible since a large number of States share similar aspects to Massachusetts. Patterns regarding residents, weather, industries, historical importance, and ownership of major cities and rural and suburban areas exist in Pennsylvania, Illinois, New York, and other States.

Another method to ensure external validity exists within the study pertains to cross-validation of the model. Two methods can prove the fit of a model: Calculating Adjusted R^2 allows for investigation into the number of data points that fall within the line of regression. The difference between R^2 and Adjusted R^2 indicates the amount of variance contained in Y accounted for by the regression model. SPSS can find Adjusted R^2 through Wherry's Equation. The value of this calculation describes how much variance comes from the population the study's sample yielded. Wherry's Equation fails to exhibit how well the regression model predicts scores if a new sample was taken from the same population and used in the model. Since the purpose of obtaining the Adjusted R^2 value is to indicate the loss of predictive power, Stein's Formula is a better option to

assess the model and justify generalizability claims (Field, 2013, p. 312). Stein's Formula is as follows:

Adjusted $R^2 = 1 - [((n-1)/(n-k-1))*((n-2)/(n-k-2))*((n+1)/n)]*(1-R^2)$

Where: n is the number of participants, k is the number of predictors in the model, and R^2 is the unadjusted value

Data Splitting is a useful option to prove the soundness of a model and assess generalizability through cross-validation. It is also relatively easy to perform. This method involves randomly splitting the sample data, conducting a regression on both halves, and comparing the resulting R^2 and b-values in the 2 newly made models (Field, 2013, p. 313). The higher the value for R^2, the better the model fit. As for the b-values, these scores by definition represent the direction and amount of change in the dependent variable from a 1-unit change in the independent variable. Inspecting beta values can balance this analysis by measuring how strongly the independent variable influences the dependent variable. The better the outcomes for these scores, the easier it is to see if the model produces generalizable data.

The stepwise method of data splitting as another option to evaluate model fit. It is recommended to apply the stepwise process on about 80% of the cases and force the remaining 20% of data on the model (i.e., the order of the predictor variables will not be stepwise and be loaded all at once) (Field, 2013, p. 313). Part of the issue with the stepwise process is that it by nature it adds the most reliable predictor into the equation, the one that possesses the highest simple correlation with the outcome, and then removes

the least useful predictor from the equation. Since this repeats until there are no more predictors present, this process can lead to shortcomings, bias, and incompleteness. The fit of variables used in the model become based on the other variables in the model. The reliance of variables on one another is problematic. Since the contribution of the remaining predictors gets reassessed as predictors join the model, there is a possibility of wrongly considering variables as bad predictors and leaving them out of the model. Eliminated predictors may be suitable predictors that should have remained in the model; had they been put in first, or all at once with the other variables, they would have stayed in the model (Field, 2013, pp. 322-323).

Threats to Internal Validity

Internal validity is contingent upon whether the results of an experiment derive from an intervention, a program used by the researcher, or something that is alleged to solicit the effect by the researcher) (Trochim, 2006d). Issues with internal validity can be difficult to determine, for alternative causes must be ruled out. It can be arduous to prove temporal precedence regarding a reason an effect is solicited (Trochim, 2006e). Case and point, this study desires to look at predictors of hardiness and resilience. It may be tasked to determine whether high levels of compassion fatigue cause low levels of hardiness, or if low levels of hardiness cause high levels of compassion fatigue. An unwavering standpoint that low hardiness comes before high compassion fatigue or vice versa may not arise in this study. In fact, it may be impossible to claim this relationship since there is no intervention, no pre-test or post-test, nor a need for a control group. In natural

settings, it may not be possible to determine that a high level of control is present. It is difficult to manipulate the independent and dependent variables and achieve a cause and effect result organically (Frankfort-Nachmias & Nachmias, 2007, p. 95). Still, there are other options to create stronger claims that internal validity does exist within a study.

The covariation of cause and effect is a more practical relationship for internal validity (Trochim, 2006e). Using a corresponding relationship with the independent and dependent variables can prove the correlation between the variables. This confirmation is necessary for covariation, internal validity, and as a requisite for a sound research design (Frankfort-Nachmias & Nachmias, 2007, p. 94). An association of variables is determinable since the study will be assessing the entire range of levels (i.e., low and high) for the independent and dependent variables. Hypothetically, the data could show the presence of low levels of hardiness occurring with high levels of burnout and secondary traumatic stress. Just as the presence of high levels of hardiness could have an association with low levels of burnout and secondary traumatic stress, also noted as high levels of compassion satisfaction.

Another element to consider for internal validity involves instrumentation. The study's scales underwent a rigorous examination to prove their reliability and validity. The creators adjusted the instruments to ensure that they can continuously gather data on phenomena and characteristics as time and information progress. To maintain confidence in the devices' quality, the creators also examined results of subsequent studies

conducted by other researchers using the instruments. This pool of research employed

diverse populations, further establishing the tools' validity and reliability.

Threats to Statistical Conclusion Validity

Statistical conclusion validity is the degree that ultimate claims regarding the data

reasonably or correctly describe the relationship among variables. It is equally

problematic to claim that there is no relationship between the variables when there is, as

it is to argue that there is a relationship between the variables when there is none. Finding

no connection between the variables when one is present can be due to the low reliability

of measures such as reduced question wording, insufficient instruments, improper design,

or respondents that are heterogeneous as a group (Trochim, 2006c). Finding a

relationship between the variables when one is not present can occur when multiple

analyses treat each study as independent by not adjusting the significance level or error

rate to reflect the number of reviews. This phenomenon is problematic as it forces a

contrived result by differing conditions or assumptions slightly and running studies under

the guise of independence until significant effects occur. This process is not

representative of a population but rather a manipulation of probability. False connections

can also arise in statistical conclusions violating test assumptions, causing a spurious

relationship to appear or a real link to be unseen.

There are three ways to improve conclusion validity that should be evaluated for

implementation to design a sound study (Trochim, 2006a). Not every facet of each option

may be available or even practical based on the circumstances or focus of a particular

study. For the study in question, the following elements will be considered to achieve this task:

Increasing statistical power can result in higher statistical conclusion validity. The level of statistical power that is usually accepted by the scientific community is 0.8 or more (Trochim, 2006a, 2006b; Field, 2013). As advised for psychological studies, the future research on hardiness and resiliency predictors will be using a value of 0.95 for power, a value of 0.15 for a medium effect size, an alpha level of 0.05, and a sample size of at least 276 participants. Enlarging the effect size can be helpful for determining a relationship. A more significant effect size decreases the population number, which is not advisable since larger populations can be more efficient for deciding the existence of significance (Trochim, 2006a).

Ensuring reliability can result in higher statistical conclusion validity. The employment of quality methods or instruments used to gather data and measure data supports reliability (Trochim, 2006a). The chosen scales for hardiness and resiliency predictors are deemed valid and reliable by the scientific community, as are the tools to measure these elements (Carver, 1997, 2013; Stamm, 2008, 2015; Wagnild, 2015; Bartone, 2008, 2010).

Maximizing quality implementation can achieve greater statistical conclusion validity. It is essential to maintain an experimental environment that contributes to obtaining reliable data (Trochim, 2006a). Respondents should be in a testing environment that is not going to skew and bias data results. For the upcoming study, respondents will

be completing questionnaires electronically to increase the likelihood and ease of participation. This approach can make it easier for people to participate. Electronic survey participation can open up some threats since officers control the environment they are responding in; however, the benefit of anonymity that comes from filling out electronic questionnaires in a "respondent-driven" environment can lead to more truthful answers.

Ethical Procedures

Regardless of whether a study is qualitative, quantitative, or mixed methods, common and unforeseen moral issues that may trouble participants need acknowledgment. In professional fields that are plagued by mental health stigmas, ethical standards related to research and disclosure of data are always a primary concern for researchers and participants alike. This study explores the mental fortitude and professional quality of life of persons that work or have worked enforcing government policy and law within the state, local, and federal forces (i.e., military, corrections, uniformed policing divisions of federal agencies, special agents, investigators, etc.) to examine the coping patterns and professional quality of life facets associated with resilience and hardiness. To support ethical practices research adheres to IRB policies by disclosing to respondents matters concerning their participation, consent, privacy, and data security.

Maintaining confidentiality and nondisclosure of the opinions and statements associated with respondents' answers are taken very seriously, whether such responses

are positive or negative reflections. Participant statements are completely confidential, anonymous, private, and not shared with outside groups or used for purposes other than pooling results for summative analyses. Collected data is unattached to the actual name of the participant. Respondents are grouped by score points for resiliency and hardiness levels and assessed for predictive trends associated with coping styles and compassion (i.e., satisfaction or fatigue components). Respondent participation consent forms:

- Brief respondents on the content and associated measurement of survey questions.

- Explain to participants that consent to participate in the study occurs by clicking on a link to the survey.

- Disclose that regardless of how the respondent became aware of the study (i.e., through the researcher, through an electronic platform, through a professional peer, through a professional supervisor, etc.), participation in the research will not positively or negatively leverage personal or professional relationships.

- Notify participants to separate the researcher from other known roles.

- Encourage respondents to reach out to the institution or researcher with any questions related to the study. Respondents will receive contact information for the researcher and the school such as email addresses and telephone numbers.

- Remind participants of their ability to opt out of the study at any point without penalty.

- Inform respondents that their results on the surveys are anonymous and not shared with anyone; the researcher will not even know who they are.

- Provide respondents with information about mental health resources that can provide additional assistance. There will be a list of contact information for these services such as telephone numbers and websites.

- Reassure participants that SSL encryption secures survey responses.

- Notify respondents that data will be kept for 5 years and never shared with third parties.

- Explain to participants how data will be collected and used.

- Provide respondents with a synopsis of the nature and background of the study.

Recruitment and Treatment of Human Participants

Recruitment for the study on resilience and hardiness will occur primarily through electronic and physical advertisements (i.e., Facebook, LinkedIn, flyers placed in public locations, etc.) and by word-of-mouth. There are no community partners in this study and no participants from Walden's Participant Pool. To participate in the study, individuals are required have either serve or have served enforcing government policy and law on the federal, state, local, or tribal level. All races and ages are encouraged to participate in the research. This study is not targeted towards any specific race or age group, and has no built in way of gathering this information. This review is also not aimed towards any particular gender; it is impossible to know the gender of respondents, as participation is done anonymously.

It is possible that individuals conceived as members of vulnerable groups may participate in this study by choice. The participation of vulnerable groups, while not

purposely intended, is felt to add diversity and a "real world" aspect of the data. The experiences of such individuals are valuable to understanding the human experience, allowing the possible unintended inclusion of persons classified as vulnerable. Vulnerable groups and their qualifications for participation are listed below:

- Minors are excluded from participating in the study, as they must be old enough to work.

- Clients or potential clients of the researcher do not currently exist.

- It will be impossible to tell if adult residents of any facility (i.e., prison, treatment facility, nursing home, assisted living, group home, etc.) or the elderly participate in the study. They are not discouraged from participating, provided they have worked enforcing government policy and law. Similar to non-vulnerable groups, these individuals will obtain a consent form that informs of their right not to participate, as well as about protections provided for privacy, security, and health. Likewise, these individuals will receive a list of mental health resources and services they can contact if they desire.

- Mentally disabled individuals, albeit not directly sought as respondents, are unlikely to participate in this study. A small percentage may fit the criteria to participate; their participation would not be known by the researcher.

- It will be difficult to tell if emotionally disabled individuals participate in the study. They are not discouraged from participating, provided they have served enforcing government policy and law. Similar to non-vulnerable groups, these

individuals will receive consent forms discussing the right not to participate and protections provided for privacy, security, and health. Likewise, these individuals will also receive a list of mental health resources and services they can contact.

- It will be impossible to tell if pregnant women are participating in the study. They are not discouraged from participating in the study, as many may have served or are currently serving to enforce government policy and law. They have the same protections, disclosures, and mental health resources as non-vulnerable groups.

- It will be difficult to know if subordinates or students of the researcher participate in the study. These individuals are not discouraged from participating in the research, as many of them have served or are currently serving to enforce government policy and law. However, participation is voluntary, and respondents can quit the study at any point without penalty. Participants are directed to separate the researcher from other roles and informed that the researcher would not know if any specific person participates or not. Subordinates or students of the researcher have the same protections, disclosures, and mental health resources as non-vulnerable groups.

- It is impossible to discern if individuals that are economically disadvantaged or in crisis (i.e., natural disaster victims or persons with an acute illness) participate in the study. These individuals are not discouraged from participating, provided they have worked or are currently worked enforcing government policy and law. They

receive the same protections, disclosures, and mental health resources as non-vulnerable groups.

- It is possible that individuals less fluent in English may participate in the study without the researcher's knowledge. It is unlikely that those less fluent in English would have the ability to access the survey on the English-based version of the electronic platforms. Similar to non-vulnerable groups, individuals can contact the researcher and institution with any questions they have related to the study. These individuals are not discouraged from participating in the study, should they have worked or are currently worked enforcing government policy and law and feel confident that they can answer the research questions in English. There are non-English versions of the surveys that can also be provided by participant request. Similar to non-vulnerable groups, these individuals are also offered the same protections, disclosures, and mental health resources as other participants.

It is arduous to eliminate risk while performing scientific inquiries, especially the occurrence of potentially minor risks to participants. For this study, there will be no administration of drugs to participants that may jeopardize physical health. Participants must assess general statements as they apply to themselves and their feelings and behaviors. This process could bring up negative or positive emotions. Survey statements are broad and without specifics, making it difficult to determine possible emotional consequences towards mental health. Participants will be given contact information for public mental health resources to access should they desire to discuss any psychological

health-related issues (i.e., suicide prevention, physical abuse resources, alcohol and substance abuse resources, counseling resources, etc.).

There are further preventative measures in place to minimize and eliminate identifiable risk for respondents. The following is a list of the potential dangers, measures of possible threats (i.e., nonexistent, minor, or significant), and actions to minimize and address risks:

- The unintended disclosure of confidential information is highly unlikely. No sensitive information tied to participants' identities will occur: participant identity is unknown, medical records are unnecessary, and educational and work (to include paid and unpaid) histories are not required. There will be no collection of information that identifies any organizations and the locations of said organizations.

- There is a minimal risk for participants to experience psychological stress higher than what one would encounter in daily life. Respondents will assess general statements from surveys as they apply to professional and personal experiences, thoughts, and behaviors. It is likely that these comments may cause the respondent to access memories that create negative or positive emotions. It is impossible to determine the impact that any memories can have on a respondent. Participants are given a list of mental health resources to self-referral, should they need assistance coping with any memories or emotions brought up by the study.

- Participation is anonymous. Consent is granted by clicking on a link and does not require any signatures. There are no open response questions included in this study. Participants' personal information (i.e., family history, sexual practices, substance abuse, mental health, physical health, illegal behavior, etc.) is irrelevant to the research, and not collected at any point. Participants are to rank the applicability of statements involving coping practices and personal feelings towards situations. Some survey components refer to maladaptive practices such as coping with substances; however, participants' responses are not tied to personal information, nor shared with third parties.

- Threats related to unwanted solicitation, intrusion, or observation in public places for participants is nonexistent in this study. Respondents are asked to partake in the research electronically and informed of their anonymity. There is no solicitation afterward by the researcher or third parties, whether persons participate or not.

- There are no associated dangers of unwanted intrusions of privacy by others not involved in the study (e.g., participants' families). There is no connection between responses and participants' personal information, as no personal information is gathered. The pairing of identifying information with individual results cannot occur, especially with third parties.

- There is minimal risk for participants to experience social or economic loss from participating in the study. The survey does not link participants' identities with

information that employers or medical professionals could use to impact

employability or reputation. Third parties will not receive any identifying

information from the study. The results of the study will only be shared publicly

in a summative, aggregate form with individual responses undistinguishable. All

identifiable information from participants is unknown at all stages of the study

such as whether an individual completes the study, stops at some point during the

study, or decides not to participate in the study at all. Any steps taken to

acknowledge and respond to the results earned on the study's surveys rests

entirely on the respondent. The participant is responsible for any consequences

related to releasing or disclosing any results earned on the examinations.

- A minimal danger to respondents exists related to benefits or coercion.

  Participants receive no monetary compensation, or pressure to partake in the

  research. Respondents cannot leverage their relationship with the researcher, or

  any entity that the researcher might be perceived to represent. Respondents are

  told on the consent form to separate the researcher from any Instructor, military,

  or other known roles. There is a reminder that the researcher will not know

  whether any person completes the surveys, quits at any point during the research,

  or does not participate at all. Consent forms notify respondents that participation

  in the study is voluntary and without payment and that participants can quit at any

  time with no penalty, or choose not to participate without penalty.

- The risk to respondents of a misunderstanding as a result of experimental deception, such as placebo treatment or use of research assistants posing as someone else, is nonexistent. There is no placebo or control group in this study. Participation in the study also does not involve any observation. Access to surveys is electronic and can occur wherever the respondent chooses on any technological browsing device.

- Participation in the study will not cause any significant adverse effects on respondents' health. Administration of drugs is not a part of this study. There is a possibility that some participants may experience minor impacts to well-being caused by psychological stress. On the consent form associated with the survey, there is a disclosure to respondents of the voluntary nature of the study. There is also a warning that a potential risk for unpleasant memories may arise during the investigation. An additional list of mental health resources will be available to participants that would like help coping with memories brought up by survey statements.

Security and Treatment of Data

Survey Monkey and Qualtrics maintain data collection, security, privacy, exportation, and temporary storage of study results. Survey Monkey and Qualtrics will not maintain rights to the data; the researcher retains the following rights: data access, restrictions, rectification, erasure, portability, consent withdrawal, and the right to object to processing. Surveys have anonymous electronic consent and data collection procedures

that protect results from being tied to specific participants. The researcher will be

unaware of respondent identities and associated data. To further protect data during

collection, SSL encryption will establish a secure connection between the participant

taking the online survey and the server. This process involves converting information into

a code and transmitting the data through the web page. The exportation of data from

Survey Monkey and Qualtrics into SPSS is also secure.

To access data, Survey Monkey and Qualtrics have added protective features. The

website can create read-only shared data pages that are password-protected. Entrance into

Survey Monkey and Qualtrics to retrieve, view, or export the study's data requires

passwords and knowledge of account information. Survey Monkey and Qualtrics can

continue to house, secure, and protect the data during and after the research for 5 years.

The researcher will store data for a period of 5 years, regardless of whether the option to

use Survey Monkey and Qualtrics to store data is exercised. The researcher, Survey

Monkey, and Qualtrics will never share the data with identifiable information to third

parties. Respondents are informed on the Consent Form that if the study is accessed from

an electronic platform, they should acquaint themselves with the data tracking policies of

that medium. Participants are encouraged to use the URL from Survey Monkey and

Qualtrics in a browser if they have concerns about having their data tracked by an

electronic platform.

Other data sharing procedures are in place to inform respondents and

stakeholders. Respondents and interested parties can contact the researcher to obtain

results of the study. Results cannot be broken down to individual participants and will only be shared in the aggregate. Consent forms, recruitment flyers, and electronic recruitment posts will provide information to interested persons about how to contact the researcher for aggregate study results.

Summary

The investigation into the relationship between professional quality of life and mental fortitude can further safeguard psychological and physical health. Regardless of whether a person enforces government policy and law on the state, local, federal, or tribal level, by the nature of the work they perform, these helping professionals persistently experience stressful work-related conditions. This quantitative study uses purposive sampling that may include some vulnerable groups without the researcher's knowledge, to acquire participants. SPSS will perform a predictive analysis of data received by Survey Monkey and Qualtrics. The researcher will upload four different scales with high values for validity and reliability into Survey Monkey and Qualtrics to obtain resilience, hardiness, professional quality of life, and coping data anonymously from participants that have worked or are currently worked enforcing government policy and law. Survey Monkey and Qualtrics are responsible for maintaining the privacy of participants through anonymity, the security of data through SSL encryption, and the protection of data through storage and password logins.

Data from the four uploaded scales in Survey Monkey and Qualtrics will be exported to SPSS. Each of the variables are assessed as follows: ProQOL to measure

states of compassion (independent variable), DRS 15-R to measure hardiness (dependent

variable), RS-14 to measure resilience (dependent variable), and BriefCOPE to determine

coping style (independent variable). Data garnered from the ProQOL, and the BriefCOPE

scales will evaluate if these independent variables are predictors for specific levels (i.e.,

high or low) of resilience and hardiness obtained from the RS-14 and DRS 15-R. This

knowledge has the potential to further the understanding of relationships between the

maintenance and building of mental fortitude among those enforcing policy and law,

especially through coping and professional quality of life.

Chapter 4: Results

Introduction

The current study sought to investigate the relationship between professional quality of life and coping mechanisms with resilience and hardiness. Results can guide organizations on types of mental health offerings they can provide to better protect well-being and overall health of those enforcing law and policy. Two research questions guided the study:

RQ1: How do coping mechanisms affect resilience and hardiness facets among those that enforce policy and law?

$H_0$1: Coping mechanisms have no statistically significant relationships with resilience and hardiness facets among those that enforce policy and law.

$H_1$1: Problem-focused coping has a direct relationship with resilience, hardiness, and sensation seekers for hardiness (low control and commitment with high levels of challenge) among those that enforce policy and law.

$H_2$1: Problem-focused coping has an indirect relationship with rigid control for hardiness (medium to high control and commitment with low levels of challenge) among those that enforce policy and law.

$H_3$1: Emotional-focused coping has an indirect relationship with hardiness and resilience, and a direct connection with rigid control for hardiness (medium to high control and commitment with low levels of challenge) among those that enforce policy and law.

H_41: Emotion-focused coping has an indirect relationship with sensation seekers for hardiness (low control and commitment and high challenge) among those that enforce policy and law.

H_51: Less productive coping practices have an indirect relationship with sensation seekers for hardiness (low control and commitment and high challenge) among those that enforce policy and law.

H_61: Less productive coping practices have an indirect relationship with hardiness and resilience while having a direct link with rigid control for hardiness (medium to high in control and commitment and low in challenge) among those that enforce policy and law.

RQ2: How do professional quality of life factors affect resilience and hardiness profiles among those that enforce policy and law?

H_02: There is no relationship between professional quality of life (compassion satisfaction, burnout, and secondary traumatic stress) factors and resilience and hardiness profiles among those that enforce policy and law.

H_12: Burnout and secondary traumatic stress has an indirect relationship with resiliency, hardiness, and sensation seekers for hardiness (low control and commitment and high challenge) among those that enforce policy and law.

H_22: Burnout and secondary traumatic stress have a direct relationship with rigid control for hardiness (medium to high control and commitment and low challenge) among those that enforce policy and law.

$H_3$2: Compassion satisfaction has a direct relationship with resiliency, hardiness,

and sensation seekers for hardiness (low control and commitment and high

challenge) among those that enforce policy and law.

$H_4$2: Compassion satisfaction has an indirect relationship with rigid control for

hardiness (medium to high control and commitment and low challenge) among

those that enforce policy and law.

To answer these questions, a sample population of those who enforce policy and

law around the nation provided input. Results were analyzed using IBM's SPSS Version

25.

Data Collection

Data collection for the study deviated from the original collection plan slightly.

Prior to the study commencing, there was an assumption that a convenience sample

would exist among the location that respondents resided. Instead, a wider national sample

was obtained with the most common attribute among respondents being military service

at one point in their professional lives. This characteristic still allowed for the sample

population to remain representative, as many individuals also currently work, or have

worked, for a government entity enforcing law and policy. To obtain a more random

sample beyond location, the collection of data spanned approximately four months and

allowed for the number of participants to reach 341. Of this sample, 26 responses were

eliminated for missing data, causing the usable sample to be 315. The required number of

participants to obtain enough power for the study was a minimum of 276. Respondents were located by word of mouth and electronic or physical advertisements.

Analysis for the study differed from original plans. All dependent and independent variables were assessed linearly through either multiple linear regression or hierarchical regression. The rigid control profile for hardiness and its associated coping mechanisms and professional quality of life facets were assessed linearly and logistically. The original plan for the study was to run a multiple linear regression and MANOVA. Plans for the MANOVA were altered due to the nature in which independent variables were examined. The descriptive statistics for all variables are listed in Table 1 and Table 2.

Table 1

Descriptive Statistics: Dependent Variables

Dependent variable	N	Range	Min. value	Max. value	Mean	Mean *SE*	*SD*
Resilience	315	69	29	98	80.33	0.594	10.541
Hardiness	315	38	6	44	28.54	0.378	6.708
Rigid control	90	16	22	38	29.6556	0.3386	3.2122

Table 2

Descriptive Statistics: Independent Variables

Independent variable	N	Range	Min. value	Max. value	Mean	Mean *SE*	*SD*
Compassion satisfaction	315	40	10	50	36.29	0.443	7.864
Burnout	315	34	10	44	22.86	0.377	6.682
Secondary traumatic stress	315	37	10	47	18.80	0.367	6.519
Less productive coping	315	24	8	32	14.29	0.270	4.785
Emotion-focused coping	315	30	10	40	22.94	0.354	6.287
Problem-focused coping	315	27	10	37	23.00	0.311	5.515
Rigid control_less productive coping	90	24	8	32	14.2444	0.51332	4.86979
Rigid control _emotion-focused coping	90	30	10	40	24.3778	0.64314	6.10135
Rigid control _problem-focused coping	90	27	10	37	23.9444	0.55539	5.26886
Rigid control _compassion satisfaction	90	28	22	50	37.2222	0.66381	6.29745
Rigid control_burnout	90	25	10	35	21.6778	0.57079	5.41498
Rigid control _secondary traumatic stress	90	26	10	36	18.7556	0.61124	5.79870

Results

Prior to running the statistical analyses into IBM's SPSS Version 25, data were organized and cleaned in Excel. As the dependent variables were organized, some of the initial assumptions regarding unbalanced hardiness profiles did not show up in the data. For example, sensation seekers is an unbalanced hardiness profile that represents an individual with low commitment, low control, and high challenge. Of the 315

respondents, only one showed this profile. There were 13 respondents who showed low commitment, low control, and average challenge, but that profile does not fit the accepted definition of a sensation seeker for hardiness. Therefore, the sensation seeker hardiness profile was eliminated from the study entirely, as no statistically significant relationship could be determined from the collected data. As a result of this omission, all hypotheses related to the sensation seeker hardiness profile were eliminated: $H_1 1$, $H_4 1$, $H_5 1$, $H_1 2$, and $H_3 2$.

The independent variables associated with coping techniques and professional quality of life stayed in numerical form. The 14 subscales of the BriefCOPE were organized into three groups based on the literature: (a) problem-focused, (b) emotion-focused, and (c) less productive. Problem-focused contained the following subscales: (a) active, (b) planning, (c) behavioral disengagement, (d) instrumental support, and (e) self-distraction. Emotion-focused contained the following subscales: (a) positive reframing, (b) emotional support, (c) religion, (d) humor, and (e) acceptance. Less productive contained the following subscales: (a) substance use, (b) venting, (c) self-blame, and (d) denial. The three subscales of the ProQOL remained apart and stayed continuously measured: (a) compassion satisfaction, (b) burnout, and (c) secondary traumatic stress. Stamm (2008) frequently discussed that burnout and secondary traumatic stress comprise compassion fatigue but did not provide guidance on joining and interpretation of scores when these two facets are placed together.

Multiple and hierarchical linear regressions examined the relationships between resilience, hardiness, coping, and professional quality of life. Using these regressions to isolate and assess the relationship for hardiness the equation for this test is:

$$Y_{pred} = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + e$$

- Y is the predictor variable for hardiness
- b_0 is the sample intercept
- b_1, b_2, and b_3 are the sample parameters
- X_1, X_2, and X_3 are independent variables for the coping mechanisms (i.e., less productive coping, emotion-focused coping, and problem-focused coping)
- e is the sample errors/residuals

The same equation assesses the relationship between total resilience and coping mechanisms, where Y is the predictor variable for total resilience and X is the independent variable for coping mechanisms as described above. Similarly, the linear regression equation for total resilience and professional quality of life facets is:

$$Y_{pred} = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + e$$

- Y is the predictor variable for total resilience
- b_0 is the sample intercept
- b_1, b_2, and b_3 are the sample parameters

- X_1, X_2, and X_3 are the independent variable for professional quality of life facets (i.e., compassion satisfaction, burnout, and secondary traumatic stress)

- e is the sample errors/residuals

The same linear regression equation is used to examine the relationship between total hardiness and professional quality of life, where Y is the predictor variable for total resilience and X is the independent variable for professional quality of life facets.

The rigid control hardiness profile was prevalent in the data amongst the participant group with 90 respondents meeting the criteria. Binary logistic regression models assessed the relationship between rigid control, coping mechanisms, and professional quality of life facets. The binary logistic regression equation for rigid control and coping mechanisms is:

Logit $(Y) = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + e$

- Logit (Y) is the predictor variable for rigid control (yes, no)

- b_0 is the sample intercept

- b_1, b_2, and b_3 are the sample parameters

- X_1, X_2, and X_3 are the independent variable for coping mechanisms (i.e., less productive coping, emotion-focused coping, and problem-focused coping)

- e is the sample errors/residuals

The binary logistic regression equation for rigid control and professional quality of life facets is similar:

$$\text{Logit}(Y) = b_0 + b_1X_1 + b_2X_2 + b_3X_3 + e$$

- Logit (Y) is the predictor variable for rigid control (yes, no)

- b_0 is the sample intercept

- b_1, b_2, and b_3 are the sample parameters

- X_1, X_2, and X_3 are the independent variable for professional quality of life facets (i.e., compassion satisfaction, burnout, and secondary traumatic stress)

- e is the sample errors/residuals

RQ1: How Do Coping Mechanisms Affect Resilience and Hardiness Facets?

Based on the results of the data organization and linear regression, alternative hypotheses were removed from the study and the null hypotheses was rejected. The study assessed the following coping mechanism hypotheses through the linear regression:

$H_0$1: Coping mechanisms have no statistically significant relationships with resilience and hardiness facets amongst those that enforce policy.

$H_1$1: Problem-focused coping has a direct relationship with resilience and hardiness, and an indirect relationship with rigid control for hardiness (medium to high control and commitment with low levels of challenge) among those that enforce policy and law.

$H_2$1: Emotional-focused coping has an indirect relationship with hardiness and resilience, and a direct connection with rigid control for hardiness (medium to high control and commitment with low levels of challenge) among those that enforce policy and law.

$H_3$1: Less productive coping practices have an indirect relationship with hardiness and resilience, while having a direct link with rigid control for hardiness (medium to high in control and commitment and low in challenge) among those that enforce policy and law.

Problem-focusing coping was found to have no statistically significant relationship with hardiness, resilience, or the rigid control profile causing $H_1$1 to be rejected. Emotion-focused coping had statistically significant relationships with both resilience and hardiness, but the relationship was direct, which was not what was hypothesized in $H_2$1. Emotion-focused coping was found in the stepwise linear regression to have no statistically significant relationship with the rigid control profile, but to have a statistically significant relationship in the binomial logistic regression, with the likelihood of the profile increasing as emotion-focused coping was used. Less productive coping had a statistically significant relationship with hardiness, as $H_3$1 had anticipated. Less productive coping only had a statistically significant relationship with resilience when problem-focused coping techniques were removed from the regression model. As usage of less productive coping decreases, hardiness and resilience increase. Rigid control and

less productive coping had no statistically significant relationships in the logistic and linear regressions.

The multiple linear regression model for hardiness and coping mechanisms has a R^2 of 13.2% and an Adjusted R^2 of 12.4%. The model for resilience and coping mechanisms has a R^2 of 6.3% and an Adjusted R^2 of 5.4%. Both models indicate small effect sizes, explaining 12.4% and 5.4% of the variance between the dependent and independent variables. Both models in Table 3 have statistically significant regressions at $p < 0.05$.

Table 3

Multiple Linear Regression for Coping Models: Fit and Regression Significance

Dependent variable	Independent variable	R	R^2	Adj. R^2	Regression significance
Hardiness	Less productive coping				
	Emotion-focused coping	0.364	0.132	0.124	0.000
	Problem-focused coping				
Resilience	Less productive coping				
	Emotion-focused coping	0.251	0.063	0.054	0.000
	Problem-focused coping				

The multiple regression model for hardiness and coping mechanisms statistically significantly predicted $F_{(3, 311)} = 15.826$, $p < 0.001$, with Adjusted $R^2 = 12.4\%$, as shown in Table 4. Emotion-focused coping and less productive coping are statistically significant to the model at $p < 0.05$, with a 95% CI [0.108, 0.464] for emotion-focused coping and a 95% CI [-0.694, -0.273] for less productive coping. The multiple regression model for resilience and coping mechanisms statistically significantly predicted F (3,

311) = 6.999, p < 0.001, with Adjusted R^2 = 5.4%. Emotion-focused coping is statistically

significant to the model at p < 0.05, with a 95% CI [0.284, 0.866].

Table 4

Multiple Linear Regression Results for Coping Model

Dependent variable	Independent variables	Unstandardized B	Coefficients *SE*	Standardized coefficients Beta	95% CI upper	95% CI lower
Hardiness	Intercept	32.068	1.542		29.034	35.102
	Less productive coping	-0.484	0.107	-0.345*	-0.694	-0.273
	Emotion-focused coping	0.286	0.91	0.268*	0.108	0.464
	Problem-focused coping	-0.138	0.131	-0.114	-0.396	0.119
Resilience	Intercept	78.729	2.518		73.776	83.683
	less productive coping	-0.250	0.175	-0.113	-0.594	0.940
	Emotion-focused coping	0.575	0.148	0.343*	0.284	0.866
	Problem-focused coping	-0.349	0.214	-0.182	-0.769	0.072

Note. * p < 0.05.

Both resilience and hardiness were also assessed via hierarchical linear regression

to determine the impact of each independent variable as predictors. Data is shown in

Table 5.

Table 5

Hierarchical Multiple Regression: Predicting Resilience From Less Productive Coping, Emotion-Focused Coping, and Problem-Focused Coping

	Model 1		Model 2		Model 3	
Variable	B	β	B	β	B	β
Constant	83.287*		77.341*		78.729*	-0.113
Less productive coping	-0.207	-0.094	-0.433*	-0.197	-0.250	0.343
Emotion-focused coping			0.400*	0.239	0.575*	-0.182
Problem-focused coping					-0.349	
R^2	0.009		0.055		0.063	
F	2.779		9.118*		6.999*	
Δ R^2	0.009		0.046		0.008	
Δ F	2.779		15.331*		2.663	

Note. N = 315. * $p < 0.05$.

The models shown in Table 5 for less productive coping, emotion-focused coping, problem-focused coping to predict resilience had independence of residuals, as assessed by a Durbin-Watson statistic of 1.915. There was homoscedasticity, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. There was linearity as assessed by partial regression plots and a plot of studentized residuals against the predicted values. There was no evidence of multicollinearity, as assessed by tolerance values greater than 0.1. Problem-focused coping and emotion-focused coping have a Pearson correlation value of 0.768. Problem-focused coping and less productive coping have a Pearson's correlation value of 0.702. All other variable combinations have Pearson correlations less than 0.7. There were three values found with standardized residuals greater than +/- 3 standard deviations. There were no leverage values greater than 0.2, and no values for Cook's distance were above 1. There assumption of normality was met, as assessed by Q-Q Plot. The addition of emotion-

focused coping to the prediction of resilience (Model 2) led to a statistically significant

increase in R^2 of 0.046, F (1, 312) = 15.331, p < 0.0005. The addition of problem-focused

coping to the prediction of resilience (Model 3) led to a statistically nonsignificant

increase in R^2 of 0.008, F (1, 311) = 2.663, p = 0.104. As previously stated, the full

model of less productive coping, emotion-focused coping, and problem-focused coping to

predict resilience was statistically significant, R^2 = 0.063, F (1, 311) = 6.999, p < 0.001,

Adjusted R^2 = 0.054.

Table 6

Hierarchical Multiple Regression: Predicting Hardiness From Less Productive Coping,
Emotion-Focused Coping, and Problem-Focused Coping

	Model 1		Model 2		Model 3	
Variable	B	β	B	β	B	β
Constant	34.736*		31.516*		32.068*	
Less productive coping	-0.434*	-0.309	-0.556*	-0.397	-0.484*	-0.345
Emotion-focused coping			0.217*	0.203	0.286*	0.268
Problem-focused coping					-0.138	-0.114
R^2	0.096		0.129		0.132	
F	33.133*		23.171*		15.826*	
Δ R^2	0.096		0.034		0.003	
Δ F	33.133*		12.039*		1.118	

Note. N = 315. * p < 0.05.

As shown in Table 6, the model for less productive coping, emotion-focused

coping, problem-focused coping to predict hardiness had independence of residuals, as

assessed by a Durbin-Watson statistic of 1.998. There was homoscedasticity, as assessed

by visual inspection of a plot of studentized residuals versus unstandardized predicted

values. There was linearity as assessed by partial regression plots and a plot of

studentized residuals against the predicted values. There was no evidence of

multicollinearity, as assessed by tolerance values greater than 0.1. Problem-focused

coping and emotion-focused coping have a Pearson correlation value of 0.768. Problem-

focused coping and less productive coping have a Pearson's correlation value of 0.702.

All other variable combinations have Pearson Correlations less than 0.7. There were two

values found with standardized residuals greater than +/- 3 standard deviations. There

were no leverage values greater than 0.2, and no values for Cook's distance were above

1. There assumption of normality was met, as assessed by Q-Q Plot. The addition of

emotion-focused coping to the prediction of hardiness (Model 2) led to a statistically

significant increase in R^2 of 0.034, F(1, 312) = 12.039, p = 0.001. The addition of

problem-focused coping to the prediction of hardiness (Model 3) led to a statistically

nonsignificant increase in R^2 by 0.003, F (1, 311) = 1.118, p = 0.291. As previously

stated, the full model of less-productive coping, emotion-focused coping, and problem-

focused coping to predict hardiness was statistically significant, R^2 = 0.132, F (3, 311) =

15.826, p < 0.001, Adjusted R^2 0.124.

As shown in Table 7, the rigid control hardiness profile was also assessed via

hierarchical linear regression to determine the impact of each predictor to the model. The

model for less-productive coping, emotion-focused coping, and problem-focused coping

for predicting the rigid control hardiness profile had an independence of residuals, as

assessed by a Durbin-Watson statistic of 1.443. There was homoscedasticity, as assessed

by visual inspection of a plot of studentized residuals versus unstandardized predicted

values. There was linearity as assessed by partial regression plots and a plot of

studentized residuals against the predicted values. There was no evidence of

multicollinearity, as assessed by tolerance values greater than 0.1. Problem-focused

coping and emotion-focused coping have a Pearson correlation value of 0.788. Problem-

focused coping and less productive coping have a Pearson's correlation value of 0.681.

All other variable combinations have Pearson correlations less than 0.7. There were no

standardized residuals greater than +/- 3 standard deviations. There were no leverage

values greater than 0.2, and no values for Cook's distance were above 1. There

assumption of normality was met, as assessed by Q-Q Plot. The addition of emotion-

focused coping to the prediction of the rigid control hardiness profile (Model 2) led to a

non-statistically significant increase in R^2 of 0.270, F (1, 87) = 2.380, p = 0.126. The

addition of problem-focused coping to the prediction of the rigid control hardiness profile

(Model 3) led to a non-statistically significant increase in R^2 of 0.000, F(1, 86) = 0.028, p

= 0.867. The full model of less productive coping, emotion-focused coping, and problem-

focused coping to predict the rigid control hardiness profile was non-statistically

significant, R^2 = 0.270, F(3, 86) = 0.800, p = 0.497, Adjusted R^2 = -0.007.

Table 7

*Hierarchical Multiple Regression: Predicting Rigid Control Hardiness Profile From Less
Productive Coping, Emotion-Focused Coping, and Problem-Focused Coping*

	Model 1		Model 2		Model 3	
Variable	B	β	B	β	B	β
Constant	29.517*		27.952*		27.842*	
Less productive coping	0.010	0.015	-0.046	-0.700	-0.055	-0.084
Emotion-focused coping			0.097	0.184	0.085	0.162
Problem-focused coping					0.022	0.036
R^2	0.000		0.270		0.270	

F	0.019	1.200	0.800
Δ R^2	0.000	0.027	0.000
Δ F	0.019	2.380	0.028

Note. N = 90. * p < 0.05.

Information pertaining to the logistical models is shown in Table 8, Table 9,

Table 10, Table 11, and Table 12; specifically, the rigid control hardiness profile's

relationship with coping mechanisms. Binomial logistic regressions were used to assess

the relationships between the rigid control hardiness profile with coping mechanisms.

The rigid control model that contained all three of the coping mechanisms (i.e., less

productive coping, emotion-focused coping, and problem-focused coping) assessed

linearity of the continuous variables using the Box-Tidwell (1962) procedure. A

Bonferroni correction was used on all seven terms, resulting the acceptance of statistical

significance at p < 0.00714 (Tabachnick & Fidell, 2014). Based on the criteria, all

independent variables were found to be linearly related to the logit of the dependent

variable. No standardized residuals needed to be excluded from the study at the threshold

of +/- 2 standard deviations. The logistic regression model was statistically significant at

X^2 (3) = 9.550, p < 0.023. Using Nagelkerke R^2, the model explained 4.3% of the

variance in rigid control and correctly classified 71.4% of cases. Sensitivity was 1.1 %,

specificity was 99.6%, positive predictive value was 50.0%, and negative predictive

value was 71.6%. Of the three predictors, none were found to be statistically significant.

As shown in Table 8, Table 9, Table 10, and Table 12, the second model used to

assess rigid control and coping mechanisms removed problem-focused coping due to its

association with both less productive coping and emotion-focused coping. The logistic

regression model was statistically significant at $X^2 (2) = 8.390$, $p < 0.015$. Using

Nagelkerke R^2, the model explained 3.8% of the variance in rigid control and correctly

classified 70.8% of cases. Sensitivity was 0.0%, specificity was 99.1%, positive

predictive value was 0.0%, and negative predictive value was 71.3%. Of the two

predictors, emotion-focused coping was statistically significant. For each unit increase in

emotion-focused coping, the odds of showing the rigid control profile increases by 1.02.

Table 8

Logistic Coping Models Fit and Significance

Dependent variable	Independent variables	Omnibus tests of model coefficients significance	Hosmer–Lemeshow test significance	Cox & Snell R^2	Nagelkerke R^2
Rigid control	Less productive coping Emotion-focused coping Problem-focused coping	0.023*	0.867	0.030	0.043
Rigid control	Less productive coping Emotion-focused coping	0.015*	0.324	0.026	0.038

Table 9

Linearity for Logistic Coping Models: Box-Tidwell & Bonferroni Correction for Significance

Dependent variable	Independent variables	Significance
Rigid control	Nat log LPC by less productive coping	0.495
	Nat log PFC by problem-focused coping	0.961
	Nat log EFC by emotion-focused coping	0.755
	Constant	0.583

Note. Bonferroni Correction makes * $p < 0.0125$.

Table 10

Logistic Coping Models: Category Prediction

Dependent variable	Independent variables	% accuracy in classification	Sensitivity %	Specificity %	Positive predicted value	Negative predicted value
Rigid control	Less productive coping Emotion-focused coping Problem-focused coping	71.4%	1.1%	99.6%	50.0%	71.6%
Rigid control	Less productive coping Emotion-focused coping	70.8%	0.0%	99.1%	0.0%	71.3%

Note. Cut value is 0.500.

To further assess model fit the ROC curve was used and the area under the curve was assessed for both models, as shown in Table 11. Table 12, which showcases the likelihood values, should be looked at in conjunction with the ROC curve data from Table 11 as a basis for comparison of model suitably. The area under the ROC curve for the rigid control and all coping mechanisms model was 0.616 (95% CI, 0.548 to 0.685), Rigid Control with Less Productive Coping and Emotion-Focused Coping were 0.609 (95% CI, 0.541 to 0.687). All values for the area under the ROC Curve indicate that the models are accurate about half of the time, having a less than adequate level of discrimination. As stated, Table 11 below demonstrates the comparison of the models.

Table 11

Logistic Coping Models: Area Under ROC Curve

Dependent variable	Independent variables	AUC	Asymptotic 95% CI lower	Asymptotic 95% CI upper
Rigid control	Less productive coping Emotion-focused coping Problem-focused coping	0.616	0.548	0.685
Rigid control	Less productive coping Emotion-focused coping	0.609	0.541	0.687

Table 12

Logistic Regression Predicting Likelihood of Rigid Control Hardiness Profile Based on Coping Mechanisms

Dependent variable	Independent variables	B	SE	Wald	df	p	Odds ratio	95% CI odds ratio lower	95% CI odds ratio upper
	Less productive coping	-0.065	0.039	2.800	1	0.094	0.937	0.868	1.011
Rigid control	Emotion-focused coping	0.039	0.032	1.497	1	0.221	1.040	0.977	1.107
	Problem-focused coping	0.051	0.047	1.155	1	0.283	1.052	0.959	1.154
	Constant	-2.084	0.585	12.693	1	0.000*	0.124		
	Less productive coping	-0.038	0.029	1.682	1	0.195	0.963	0.909	1.020
Rigid control	Emotion-focused coping	0.064	0.022	8.187	1	0.004*	1.066	1.020	1.114
	Constant	-1.864	0.540	11.899	1	0.001*	0.155		

Note. * $p < 0.05$

RQ2: How Do Professional Quality of Life Factors Affect Resilience and Hardiness Facets?

Professional quality of life facets were also examined in the study. The null hypothesis was rejected. Regression models in the study assessed the following hypotheses:

RQ2: How do professional quality of life factors affect resilience and hardiness profiles amongst those that enforce policy?

$H_0 2$: There is no relationship between professional quality of life (compassion satisfaction, burnout, and secondary traumatic stress) factors and resilience and hardiness profiles amongst those that enforce policy.

$H_1 2$: Burnout and secondary traumatic stress have an indirect relationship with resiliency and hardiness, and a direct relationship with rigid control for hardiness (medium to high control and commitment and low challenge) among those that enforce policy and law.

$H_2 2$: Compassion satisfaction has a direct relationship with resiliency and hardiness, and an indirect relationship with rigid control for hardiness (medium to high control and commitment and low challenge) among those that enforce policy and law.

$H_1 2$ was partially correct in its assumptions. Burnout had a statistically significant relationship with both hardiness and resilience, but secondary traumatic stress did not show any statistically significant relationships with either variable. As burnout decreased, resilience and hardiness increased. The rigid control hardiness profile showed a

statistically significant indirect relationship with burnout in the logistic regression model; no such relationship was found with secondary traumatic stress. When a linear rigid control model was used that contained only the variables for burnout and compassion satisfaction, burnout showed a statistically significant relationship that was indirect. Similarly, when a linear rigid control model was used that contained only secondary traumatic stress and compassion satisfaction, secondary traumatic stress showed an indirect relationship that is statistically significant.

$H_2$2 was partially correct in its assumptions. Compassion satisfaction was found to have a statistically significant direct relationship with both resilience and hardiness in the linear models. Compassion satisfaction had a statistically significant direct relationship with rigid control in the linear models, but showed no statistically significant relationship with rigid control in the logistic regression model.

As shown in Table 13, the multiple linear regression model for hardiness and professional quality of life facets had a R^2 of 50.5%, indicating a large effect size. The model for resilience had a medium effect size, explaining 29.3% of the variance. Adjusted R^2 for these models is 50.0% and 28.6%, respectively. Both these models have statistically significant regressions at $p < 0.05$.

Table 13

Professional Quality of Life Models: Fit and Regression Significance

Dependent variable	Independent variables	R	R^2	Adjusted R^2	Regression significance
Hardiness	Compassion satisfaction Burnout Secondary traumatic stress	0.711	0.505	0.500	0.000
Resilience	Compassion satisfaction Burnout Secondary traumatic stress	0.541	0.293	0.286	0.000

Note. N =315.

As shown in Table 14, the multiple regression model of compassion satisfaction, burnout, and secondary traumatic stress to predict hardiness statistically significantly predicted F (3, 311) = 105.792, p < 0.001, with Adjusted R^2 = 50.%. Compassion satisfaction and burnout are statistically significant to the model at p < 0.05, with a 95% CI [0.230, 0.423] for compassion satisfaction and a 95% CI [-0.561, -0.285] for burnout. This model had an independence of residuals, as assessed by a Durbin-Watson statistic of 2.124. There was homoscedasticity, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. There was linearity as assessed by partial regression plots and a plot of studentized residuals against the predicted values. There was no evidence of multicollinearity, as assessed by tolerance values greater than 0.1. Compassion satisfaction and burnout have a Pearson correlation value of -0.650. All other variable combinations have Pearson correlations less than 0.7.

There was one value found with standardized residuals greater than +/- 3 standard deviations. There were no leverage values greater than 0.2, and no values for Cook's distance were above 1. There assumption of normality was met, as assessed by Q-Q Plot.

Also shown in Table 14, the multiple regression model of compassion satisfaction, burnout, and secondary traumatic stress to predict resilience statistically significantly predicted F (3, 311) = 42.866, p < 0.001, with Adjusted R^2 = 28.6%. compassion satisfaction and burnout are statistically significant to the model at p < 0.05, with a 95% CI [0.241, 0.604] for compassion satisfaction and a 95% CI [-0.761, -0.242] for burnout. This model had an independence of residuals, as assessed by a Durbin-Watson statistic of 2.050. There was homoscedasticity, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. There was linearity as assessed by partial regression plots and a plot of studentized residuals against the predicted values. There was no evidence of multicollinearity, as assessed by tolerance values greater than 0.1. Compassion satisfaction and burnout have a Pearson correlation value of -0.650. All other variable combinations have Pearson correlations less than 0.7. There were four values found with standardized residuals greater than +/- 3 standard deviations. There were no leverage values greater than 0.2, and no values for Cook's distance were above 1. There assumption of normality was met, as assessed by Q-Q Plot.

Table 14

Professional Quality of Life Models: Multiple Linear Regression Results

Dependent variable	Independent variables	Unstandardized B	Coefficients SE	Standardized coefficients beta		95% CI upper	95% CI lower
	Intercept	25.291	2.699			19.980	30.601
Hardiness	Compassion satisfaction	0.326	0.049	0.383	*	0.230	0.423
	Burnout	-0.423	0.070	-0.423	*	-0.561	-0.285
	Secondary traumatic stress	0.057	0.055	0.056		-0.051	0.166
	Intercept	72.760	5.070			62.785	82.736
Resilience	Compassion satisfaction	0.423	0.092	0.315	*	0.241	0.604
	Burnout	-0.502	0.132	-0.318	*	-0.761	-0.242
	Secondary traumatic stress	0.197	0.103	0.122		-0.006	0.400

Note. * $p < 0.05$.

Table 15 shows information for the model for burnout, secondary traumatic stress, and compassion satisfaction for predicting the rigid control hardiness profile, which had an independence of residuals, as assessed by a Durbin-Watson statistic of 1.671. There was homoscedasticity, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. There was linearity as assessed by partial regression plots and a plot of studentized residuals against the predicted values. There was no evidence of multicollinearity, as assessed by tolerance values greater than 0.1. Burnout and secondary traumatic stress have a Pearson correlation of 0.643. All other variable combinations have Pearson correlation values less than 0.7. Only one value was found to have a standardized residual greater than +/- 3 standard deviations. There were

no leverage value greater than 0.2, and no values for Cook's distance were above 1.

There assumption of normality was met, as assessed by Q-Q Plot.

As shown in Table 15, the addition of compassion satisfaction to the prediction of

the rigid control hardiness profile (Model 2) led to a statistically significant increase in R^2

by 0.073, F (1, 87) = 8.839, p = 0.004. The addition of secondary traumatic stress to the

prediction of rigid control (Model 3) led to a non-statistically significant increase in R^2 of

0.004, F (1, 86) = 0.440, p = 0.509. The full model of burnout, compassion satisfaction,

and secondary traumatic stress to predict the rigid control hardiness profile was

statistically significant, $R^2 = 0.290$, F(3, 86) = 11.711, p < 0.001, Adjusted $R^2 = 0.265$.

Table 15

Hierarchical Multiple Regression: Predicting Rigid Control Hardiness Profile from Burnout, Compassion Satisfaction, and Secondary Traumatic Stress

Dependent variable	Independent variable	Model 1			Model 2			Model 3		
		B		β	B		β	B		β
	Constant	35.603	*		27.655	*		27.079	*	
Rigid control	Burnout	-0.274	*	-0.463	-0.181	*	-0.305	-0.139		-0.235
	Compassion satisfaction				0.159	*	0.312	0.174	*	0.342
	Secondary traumatic stress							-0.047		-0.086
	R^2	0.214			0.286			0.290		
	F	23.947	*		17.460	*		11.711	*	
Δ	R^2	0.214			0.073			0.004		
Δ	F	23.947	*		8.839	*		0.440		

Note. N = 90. * p < 0.05.

As shown in Table 16, the addition of compassion satisfaction to the prediction of the rigid control hardiness profile (Model 2) led to a statistically significant increase of R^2 by 0.202, F (1, 87) = 24.103, p < 0.001. The addition of burnout to the prediction of rigid control (Model 3) led to a non-statistically significant increase in R^2 of 0.021, F(1, 86) = 2.486, p = 0.119. The full model of secondary traumatic stress, compassion satisfaction, and burnout to predict the rigid control hardiness profile was statistically significant, R^2 = 0.290, F(3, 86) = 11.711, p < 0.001, Adjusted R^2 = 0.265.

Table 16

Hierarchical Multiple Regression: Predicting Rigid Control Hardiness Profile from Secondary Traumatic Stress, Compassion Satisfaction, and Burnout

	Independent variable	Model 1			Model 2			Model 3		
		B		β	B		β	B		β
	Constant	32.348	*		23.479	*		27.079	*	
Rigid control	Secondary traumatic stress	-0.144	*	-0.259	-0.127	*	-0.229	-0.047		-0.086
	Compassion satisfaction				0.230	*	0.451	0.174	*	0.342
	Burnout							-0.139		-0.235
	R^2	0.067			0.270			0.29		
	F	6.334	*		16.05	*		11.711	*	
Δ	R^2	0.067			0.202			0.021		
Δ	F	6.334	*		24.103	*		2.486		

Note. N = 90. * p < 0.05.

Information pertaining to the logistic models are shown in Table 17, Table 18, Table 19, and Table 20. The rigid control model for professional quality of life facets assessed linearity of the continuous variables using the Box-Tidwell (1962) procedure. A Bonferroni correction was used on all seven terms in the model, resulting the acceptance

of statistical significance at p < 0.00714 (Tabachnick & Fidell, 2014). Based on the

criteria, all independent variables were found to be linearly related to the logit of the

dependent variable. No standardized residuals needed to be excluded from the study at

the threshold of +/- 2 standard deviations. The logistic regression model was not

statistically significant at X^2 (3) = 6.210, p < 0.102. Using Nagelkerke R^2, the model

explained 2.8% of the variance in rigid control and correctly classified 71.1% of cases.

Sensitivity was 0.0 %, specificity was 99.6%, positive predictive value was 0.0%, and

negative predictive value was 71.3%. Of the three predictors, burnout was found to be

statistically significant. For each unit reduction in burnout, the odds of showing the rigid

control profile increases by 1.08. Thus, increases in burnout are associated with a

reduction in the rigid control characteristics for hardiness.

Table 17

Logistic Regression Predicting Likelihood of Rigid Control Hardiness Profile Based on Coping Mechanisms and Professional Quality of Life Facets

Dependent variable	Independent variables	B	SE	Wald	df	p	Odds ratio	95% CI odds ratio lower	95% CI odds ratio upper
Rigid control	Compassion satisfaction	-0.014	0.024	0.325	1	0.569	0.987	0.942	1.034
	Burnout Secondary traumatic	-0.072	0.035	4.174	1	0.041*	0.930	0.868	0.997
	stress	0.038	0.026	2.120	1	0.145	1.039	0.987	1.094
	Constant	0.485	1.319	0.135	1	0.713	1.624		

Note. * p < 0.05

Table 18

Linearity for Professional Quality of Life: Box-Tidwell & Bonferroni Correction for Significance

Dependent variable	Independent variables	Significance
	Nat log CS by compassion satisfaction	0.063
Rigid control	Nat log burnout by burnout	0.475
	Nat log STS by secondary traumatic stress	0.198
	Constant	0.011

Note. Bonferroni Correction makes * $p < 0.0125$

As shown in Table 19, the model for rigid control and professional quality of life facets did not achieve statistical significance on the omnibus tests of model coefficients or the Hosmer–Lemeshow Test. The explained variation for the dependent variable for this model is 2.8%, according to the Nagelkerke R^2.

Table 19

Professional Quality of Life Logistic Model: Fit and Significance

Dependent variable	Independent variables	Omnibus tests of model coefficients significance	Hosmer–Lemeshow Test significance	Cox & Snell R^2	Nagelkerke R^2
Rigid control	Compassion satisfaction Burnout Secondary traumatic stress	0.102	0.419	0.020	0.028

Note. * $p < 0.05$

The model assessing rigid control and professional quality of life facets has a percent accuracy classification is 71.1%. The percent of cases that have true positives predicted correctly by the model shows a sensitivity of 0.0%, and the percent of cases that had true negatives predicted correctly by the model shows a specificity of 99.6%.

The percentage of correctly predicted cases with the observed characteristic compared to the total number of cases predicted as having the observed characteristic is 0.0%, while the percentage of correctly predicted cases without the observed characteristic compared to the total number of cases predicted as not having the characteristic is 71.3%. Table 20 below shows the result of the model category predication via the classification tables from SPSS.

Table 20

Professional Quality of Life Logistic Model: Category Prediction

Dependent variable	Independent variables	Percent accuracy in classification	Sensitivity percentage	Specificity percentage	Positive predicted value	Negative predicted value
Rigid control	Compassion satisfaction Burnout Secondary traumatic stress	71.1%	0.0%	99.6%	0.0%	71.3%

Note. Cut value is 0.500

To further assess model fit the ROC curve was used and the area under the curve was assessed for both models. As shown in Table 21, the area under the ROC curve for rigid control and professional quality of life mechanisms was 0.579 (95% CI, 0.512 to 0.646). The values for the area under the ROC curve indicate that the model is accurate about half of the time, having a less than adequate level of discrimination.

Table 21

Professional Quality of Life Logistic Model: Area Under ROC Curve

Dependent variable	Independent variables	AUC	Asymptotic 95% CI lower	Asymptotic 95% CI upper
Rigid control	Compassion satisfaction Burnout Secondary traumatic stress	0.579	0.512	0.646

Summary

Coping mechanisms showed statistically significant relationships with resilience and hardiness facets at p < 0.05. Emotion-focused coping techniques have statistically significant relationships with both resilience and hardiness. The more these types of practices are used by those working in enforcement of policy and law, the more likely it is for individuals to exhibit resiliency and hardiness. The rigid control hardiness profile did not show a statistically significant relationship with emotion-focused coping practices in the linear regression, but did show a statistically significant relationship with the profile in the logistic model that had poor discriminatory ability. Less productive coping techniques have a statistically significant relationship with hardiness, when placed in a model containing all three types of coping styles, but only show a statistically significant relationship with resilience when problem-focused coping techniques were removed from the regression model. As usage of less productive techniques decrease, hardiness and resilience increase. The rigid control hardiness profile did not exhibit a statistically

significant relationship with this less functional style of coping in the logistic and linear regressions.

Professional quality of life facets exhibit statistically significant relationships with hardiness facets and resilience at $p < 0.05$ among persons that enforce law and policy. Burnout had an indirect statistically significant relationship with both hardiness and resilience, but secondary traumatic stress did not show any statistically significant relationships with either variable in the linear models. The rigid control hardiness profile does not have a statistically significant relationship with secondary traumatic stress, but possesses an indirect statistically significant relationship with burnout in the logistic regression model. In the linear rigid control model containing only the variables for burnout and compassion satisfaction, burnout has a statistically significant indirect relationship with rigid control. Similarly, in the linear model containing only the variables for secondary traumatic stress and compassion satisfaction, secondary traumatic stress symptoms have a statistically significant indirect relationship with rigid control. The variable compassion satisfaction has a statistically significant direct relationship with both resilience and hardiness in the linear models. This variable also possesses a statistically significant direct relationship with rigid control in the linear models, but does not show a statistically significant relationship with rigid control in the logistic regression model that has poor discriminatory abilities.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

This study investigating coping mechanisms and professional quality of life facets among individuals enforcing policy and law revealed multiple statistically significant relationships at p < 0.05. Emotion-focused coping techniques and compassion satisfaction both possess statistically significant direct relationships with resilience and hardiness. Less productive coping techniques and the variable burnout both exhibit statistically significant indirect relationships with hardiness. Burnout also shows a statistically significant relationship with resilience, while the variable less productive coping only shows a statistically significant indirect relationship with resilience when problem-focused coping techniques are absent from the regression model.

The examination of the rigid control hardiness profile also revealed statistically significant relationships at p < 0.05 with coping mechanisms and professional quality of life facets. The linear model showed the variable compassion satisfaction exhibiting a statistically significant direct relationship with rigid control. In the linear rigid control model containing only the variables for burnout and compassion satisfaction, burnout shows a statistically significant indirect relationship with rigid control, while compassion satisfaction shows a statistically significant direct relationship. Similarly, in the linear model containing only the variables for secondary traumatic stress and compassion satisfaction, secondary traumatic stress symptoms have a statistically significant indirect relationship with rigid control, while compassion satisfaction shows a statistically

significant direct relationship. In the logistic models for rigid control, a statistically

significant direct relationship occurs with emotion-focused coping techniques when

placed in a model that excludes problem-focused coping practices. The variable burnout

also shows a statistically significant indirect relationship with rigid control in the logistic

model.

Interpretation of Findings

The data from both linear and logistic regressions offer statistically significant

results at $p < 0.05$ that support the existing literature for both coping and professional

quality of life. The use of hierarchical regressions added to the understanding of the

relationships between independent variables and the dependent variables of resilience,

hardiness, and the rigid control hardiness profile. Problem-focused coping did not show

hypothesized relationships with the dependent variables, regardless of the regression

methods. Findings related to statistically significant relationships with rigid control

meaningfully add to the current literature. The focus on this unbalanced hardiness profile

is relatively new compared to the traditional study of balanced hardiness profiles and the

unbalanced profile of sensation seeker that is absent from this study due to its scarcity.

The statistically significant relationships with emotion-focused coping that result from

the data analysis add a new layer of insight that is more noteworthy than the statistically

significant relationships present with compassion satisfaction, burnout, secondary

traumatic stress, and less productive forms of coping.

Coping Mechanisms

Emotion-focused coping techniques showed statistically significant direct relationships with resilience and hardiness at $p < 0.05$. Resilience and hardiness are associated with well-being and a positive outlook (Wagnild & Young, 1993; Wagnild & Young, 2009; Kobasa, 1979). This finding supports Wasserman, Meiring, and Becker's (2018) findings professing that individuals involved in enforcing laws tend to use more emotion-focused coping techniques to manage daily stress such as social support seeking and positive reappraisal. As a stress management technique, emotion-focused coping tends to be employed more when individuals desire to address emotional responses prior to engaging in activities that could be classified as problem-focused coping techniques, such as planning, creation of lists, and other organizational activities (Probst & Jiang, 2016; Liang, Xue, Pinsonneault, & Wu, 2019; Lazarus & Folkman, 1984, 1988).

Thomassen, Hystad, Johnsen, Johnsen, and Bartone (2018) found that individuals possessing hardiness believe in their ability to control and influence the course of events, as challenges are potential opportunities for growth and learning. With this outlook, it could follow that maintaining emotional stability through emotion-focused coping would maintain the emotional mindset necessary to allow for control. This idea supports the notion of emotion-focused coping being the preferred initial action for managing stressors before engaging in problem-focused coping techniques (Liang et al., 2019). According to Lazarus and Folkman (1984), emotion-focused coping as a tactic can facilitate or impede problem-focused coping techniques. As a facilitator, emotion-focused

coping is practiced to restore the feeling of stability enough to allow an individual to engage in problem-focused coping techniques in the future. The choice between the use of emotion-focused coping and problem-focused coping techniques often relies on perception of ability to control a stressor. When people feel they cannot control a stressor, they tend to employ the use of emotion-focused coping techniques over problem-focused coping practices, which tend to use when there is a perception of control over a stressor.

Regardless of the techniques used to cope, no single coping style is better than another all the time (Lazarus & Folkman, 1984; Carver et al., 1989). Coping is a contextual practice that relies on the appraisal of a stressor (Liang et al., 2019; Lazarus & Folkman, 1984; Min & Ho, 2017). The participant group in this study that exhibited high resilience and hardiness most likely prefer emotion-focused coping techniques as a first action toward stress management. Liang et al. (2019) found that problem-focused coping is function-orientated and used to identify and work on the cause of the stress, whereas emotion-focused coping tends to pacify or control the emotions as a result of a stressor. Two types of emotion-focused coping exist that are stimulated by perceived threat: inward and outward (Liang et al., 2019). Inward emotion-focused coping impedes problem-focused coping activities, while outward emotion-focused coping facilitates problem-focused coping. Inward emotion-focused coping strategies can include wishful thinking, denial, and psychological distancing. These strategies can cause less stress and restore emotional balance by altering the perception of a stressor to a more desirable prospect. Outward emotion-focused coping is applied after negative emotions are

generated that can be observed by others, involving a direct adjustment of emotional responses, such as communicative strategies to regulate the impact of negative physiological and experimental aspects of emotions (Ladstätter et al., 2018; Carver et al., 1989).

When placed in a logistic model that excludes problem-focused coping, emotion-focused coping techniques exhibit a statistically significant direct relationship with rigid control at $p < 0.05$. Individuals with the rigid control hardiness profile tend to be mid to high on commitment, mid to high on control, and low on challenge (Ladstätter et al., 2018; Carver et al., 1989). The level of control and commitment that this hardiness profile possesses may be the reason emotion-focused coping techniques are prevalent in the data. Individuals who employ emotion-focused coping tactics and are also rigid control most likely already have a perception of control internally due to the nature of the unbalanced hardiness profile being higher in control. Those meeting this criterion for hardiness may find emotional stability through emotion-focused coping techniques to be more critical toward achieving or maintaining their sense of peace. Therefore, the employment of problem-focused coping techniques that tend to relate contextually to the nature of a stressor only may not be as helpful to this group's maintenance of internal calmness (Ladstätter et al., 2018; Carver et al., 1989; Folkman & Lazarus, 1984).

Less productive coping techniques exhibit a statistically significant indirect relationship with hardiness at $p < 0.05$. When problem-focused coping practices are absent from the linear model, less productive coping techniques show a statistically

significant indirect relationship with resilience. Less hardy individuals tend to have a lower commitment, lower challenge, and lower control than hardier persons (Kobasa, 1979; Ladstätter et al., 2018). According to Ladstätter et al. (2018), less hardy persons tend to lack the courage and motivation to reframe stressors as opportunities. These individuals are not interested in learning new skills, prefer routine, do not believe they have a tremendous amount of influence, and care little for others, events, and things. As Yen et al. (2019) point out, less productive forms of coping have linkages with psychological distress, reduced life satisfaction, depression, anxiety, and psychosomatic symptoms. The relationship shown in the data with less productive forms of coping having an indirect relationship with resilience appears because resilient persons have positive relationships with self-efficacy, personal competence, self-regulation, acceptance, problem-solving, and the capacity to recover (Lin et al., 2018; Wagnild & Young, 1993). Persons lacking resilient and hardier traits have less of an ability to manage stress by their nature. This deficiency tends to cause an increase in the use of less productive forms of coping such as venting, self-blame, substance use, and denial to have the potential to worsen mental and physical health further.

Professional Quality of Life

Burnout exhibits a statistically significant indirect relationship with hardiness and resilience at $p < 0.05$. These findings support the study by Garrosa et al. (2010) that found that burnout is less likely to occur amongst hardy persons. The research of Ladstätter et al. (2018) also confirms that those with hardy profiles are less likely to

exhibit the consequences associated with burnout. Hardiness, which is comprised of commitment, control, and challenge (Kobasa, 1979), causes persons to believe in their own ability to control and influence the course of events, reframing challenges and new events as potential opportunities for growth and learning (Thomassen et al., 2018). The personal characteristics of acceptance, problem-solving skills, the capacity to recover, self-regulation, personal competence, and self-efficacy have an association with resilience (Yen et al., 2019). According to Yen et al. (2019), resilience decreases the likelihood of stress-induced depression, enabling people to adapt to stress and emotional difficulty, avoiding stress-related disorders. Jakimowicz, Perry, and Lewis's (2018) study on burnout and hardiness discovers that job tenure is a predictor for burnout, with fewer years on a job causing a higher incidence of burnout. This outcome is more likely to occur as the development of personal characteristics necessary to thrive in a specific job may not have yet developed to activate hardy and resilient traits in the workplace or someone's character. Still, it should not be overlooked that Jakimowicz et al. (2018) did find differences in burnout levels between one organization and another, causing them to postulate that organizational atmosphere may also be a factor in the presence or level of burnout.

When placed in a hierarchical linear regression for rigid control with secondary traumatic stress removed, burnout and compassion satisfaction were both found to be statistically significant at $p < 0.05$. Burnout shows a statistically significant indirect relationship with rigid control, while compassion satisfaction exhibits a statistically

significant direct relationship with rigid control. As previously stated, the rigid control

hardiness profile marks a person with medium to high commitment, medium to high

control, and low challenge. The indirect nature of the relationship between burnout and

rigid control that resulted in the data supports the findings of Ladstätter et al. (2018), with

the challenge facet of the rigid control profile being negatively correlated to emotional

exhaustion. Rigid controllers by their nature cannot manage challenges, which is why

they have a propensity to exhibit burnout and exhaustion when faced with stressors

framed as a challenge. Rigid controllers, being low in challenge, characteristically prefer

routines and enjoy staying within the same skillset. Their high control factor causes them

to feel that they can make an influence on things, and their element of high commitment

drives their devotion and care regarding people and events. When not placed in a

particularly challenging environment, a rigid controller manifesting compassion

satisfaction makes sense. Compassion satisfaction, the joy a person derives from helping

others (Stamm, 2008, 2002; Figley, 1995), is not a static trait. States of compassion (i.e.,

compassion satisfaction and compassion fatigue, comprised of burnout and secondary

traumatic stress) the unfixed nature of these elements is contingent on personal

perception (Flarity et al., 2016). In this sense, the context of a task challenging a rigid

controller may cause that individual to experience burnout, while a routine task for such a

person has a propensity to cause feelings of compassion satisfaction.

 Similar to burnout, statistically meaningful relationships arise at $p < 0.05$ in the

rigid control model when it contains only the variables for secondary traumatic stress

(STS) and compassion satisfaction. STS symptoms end up showing a statistically

significant indirect relationship with rigid control, while compassion satisfaction presents

a statistically significant direct relationship. Hotchkiss (2019) also found that STS

mediates the relationship between compassion satisfaction and burnout. STS manifests

among those working in helping professions from knowledge about traumatizing events

that someone else has experienced. STS includes symptoms similar to those found among

people that have directly experienced the traumatic event such as anxiety, precursors for

PTSD, and other mental and physical ailments. Unlike burnout, STS takes place more on

the emotional level and may not necessarily cause a loss of productivity (Stamm, 2008;

Whitt-Woosley & Sprang, 2018; Hotchkiss, 2019).

In light of the profile of rigid control, those experiencing STS are most likely

challenged beyond what they can handle but remain dedicated to their work and the

broader impact that work has on others. Whitt-Woosley and Sprang's (2018) respondents

that qualified for STS most frequently stated that they have difficulty staying objective

when working with people that are either experiencing or have experienced trauma. This

same group also stated that they felt the nature of their work did not move fast enough to

make a significant difference in the lives of those experiencing trauma, which bothered

respondents in that group. These feelings align well with the rigid control profile, due to

the routine nature of the work and the high level of caring that rigid controllers possess

(Ladstätter et al., 2018). Just as stated before, rigid controllers can experience compassion

satisfaction within their professional roles when they do not perceive the nature of their

work to be challenging beyond what they can manageably handle. When obstacles such as an inability to affect swift change, or subjective identification with another's trauma, comes into action, rigid controllers begin to experience declines in their mental health.

Compassion satisfaction possesses statistically significant direct relationships with resilience and hardiness at $p < 0.05$. Persons possessing compassion satisfaction are joyful and fulfilled (Stamm, 2002; Radey & Figley, 2007). Compassion satisfaction can lead to mental fortitude, as positive perceptions improve psychological and physical health (Flarity et al., 2016; Folkman et al., 1986). Resilience has an association with the personal characteristics of acceptance, problem-solving skills, the capacity to recover, self-regulation, personal competence, and self-efficacy (Yen et al., 2019). As stated, hardiness is associated with higher levels of control, commitment, and challenge (Kobasa, 1979). Persons moving towards higher thresholds in these categories can handle change effectively due to the challenge facet, feel that they have the power to manage tasks due to the control facet, and care very much about people and things due to the commitment facet (Ladstätter et al., 2018). Therefore, individuals that are resilient and hardy will experience compassion satisfaction while helping others professionally.

Limitations of the Study

As with every study, this study on the relationship between coping mechanisms, professional quality of life facets, resilience, and hardiness has limitations. There was an exclusion of demographic information from the study in the hopes that the added level of anonymity would promote a desire to participate. In retrospect, demographic information

could have been beneficial in terms of tenure at a position, age, and gender. A disproportionate and unexpected number of individuals working as police officers did not want to participate in the research. Persons with military experience, current or past, were more willing to offer their opinions by participating in the study. The motivations for the latter group to participate is unknown but could have a great deal to do with high suicide numbers and VA hospital issues plaguing the group as a whole.

Dependent Variables

The rigid control hardiness profile was very prevalent in the data amongst the participant group. Fewer studies focus on this profile in the scientific literature, as compared to the sensation seeker profile that has a more extended history. The rigid control hardiness profile defined as moderate to high control, moderate to high commitment, and low challenge was more abundant in the data than initially thought with 90 participants fitting the criteria. In retrospect, this larger number makes sense since the threshold for commitment and control ranges from moderate to high, allowing more individuals to meet the definition of this profile established by the scientific body of literature. Two binary logistic regression models assessed the relationship between rigid control, coping mechanisms, and professional quality of life facets. The discriminatory ability of both models fell into the "poor" classification. Neither model had sensitivity percentages above 1.1%. The statistically significant relationship found with emotion-focused coping, in the rigid control model examining only less productive coping and emotion-focused coping (problem-focused coping is absent due to its high Pearson's

correlations with other independent variables), could not be fully trusted for this reason.

The model fit examining professional quality of life facets was not statistically

significant, nor was the constant in the model at 0.713, causing the statistically significant

relationship found between rigid control and burnout to be seemly suspicious with

questionable reliability, as well.

Independent Variables

The scale used to determine coping mechanisms may have been problematic.

Problem-focused coping techniques were correlated by approximately 0.7 to both

emotion-focused coping techniques and less productive forms of coping. The models

used to determine the relationships between resilience and hardiness with coping

mechanisms did not explain as much of the variance as the models for professional

quality of life facets with the dependent variables. The measurement of coping practices

by only two items for each of the 14 subscales may be part of the issue. A more robust

scale or three entirely separate scales could have explained more of the variance in the

models.

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Recommendations

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Several interesting future studies can arise out of this research. As previously

stated, there is a general deficit of scientific literature involving the rigid control

hardiness profile. There is also a general lack of scientific literature on unbalanced

hardiness profiles and the relationships that these profiles have towards mental health and

work. It could be meaningful to the scientific body of literature to determine if balanced

hardiness profiles become unbalanced, and vice versa, due to a person's work environment. It is unknown whether the personalities of military persons are a factor in the results of this study's data.

Ladstätter et al.'s (2018) sample of nurses had a similar number of participants with the same approximate number of individuals showing the rigid control profile. The researchers' participant group also did not contain individuals with the sensation seeker hardiness profile (i.e., low commitment, low control, high challenge). Johnsen et al.'s (2014) study on soldiers was successful in identifying both rigid control and sensation seeker hardiness profiles. Since hardiness is not static, the work environment could be a factor for determining hardiness. For example, do individuals enter more rigid helping professions, such as those in the enforcement of law and policy, with one type of hardiness profile and alter to another profile as time goes on due to the line of work performed? If so, does that hardiness profile change upon exiting that field or shifting to a less rigid form of that professional field? For example, could a person enter military work and manifest an unbalanced hardiness profile but upon leaving that field shift to a less demanding environment such as a civilian government investigator role and change to a more balanced hardiness profile? Jakimowicz et al. (2018) saw statistically significant differences in professional quality of life based on the organization an intensive care nurse worked. The data from the current study supports the statistically significant relationship between hardiness and professional quality of life facets. A work location's characteristics could mediate that relationship.

The scientific body of literature could also benefit from conducting studies on the relationship between coping mechanisms and professional quality of life exclusively. The mitigating and mediating roles of the variables that comprise compassion fatigue (i.e., burnout and secondary traumatic stress) are worthy of examining closer. There is a deficit in the scientific body of literature regarding secondary traumatic stress, and more research remains to be done to understand burnout fully. In the linear models of this study for both resilience and hardiness, compassion satisfaction and burnout have statistically significant relationships with the dependent variables. In the full linear model for rigid control, where all three facets of professional quality of life are present, only compassion satisfaction has a statistically significant relationship with the dependent variable.

Interestingly, when one of the elements of compassion fatigue is absent from the model, the remaining element of compassion fatigue (i.e., either STS or burnout, whichever one remains in the model) shows a statistically significant relationship with the dependent variable. The variables that comprise compassion fatigue are different, with STS not necessarily impacting productivity, and burnout affecting productivity (Whitt-Woosley & Sprang, 2018). Understanding if such a relationship with compassion fatigue variables exist among different types of coping styles could add meaningfully to the scientific body of literature. Tying the results of such studies into differences in the work environment for those in helping professions could also beneficial towards helping to preserve mental health and making better organizational decisions.

Implications

The purpose of the undertaken study on the relationship between professional quality of life facets, coping mechanisms, resilience, and hardiness was to help scholar-practitioners and organizations understand what factors to focus their attention when trying to understand stress management in helping professions. By determining the positive relationship between emotion-focused coping and compassion satisfaction with resilience and hardiness among individuals that enforce law and policy, there is an allowance to train employees on practices that fall within this coping style to improve mental and physical health. The indirect relationship between less productive forms of coping, burnout, and secondary traumatic stress with resilience and hardiness can also help scholar-practitioners and organizations preserve the mental and physical wellbeing of employees in helping professions through awareness of habits to avoid or monitor. On the individual level, persons in helping professions can aid in knowledge of therapeutic practices to manage stress and increase their health and outlook. This type of self-awareness towards monitoring one's behavior to manage stress in healthier ways can benefit families, as well as decrease sick time, maladaptive patterns escalating into self-harm, and the intangible and tangible costs of workforce turnover rates.

Conclusion

Stress management, employee retention, health, mental fortitude, and professional quality of life are essential not only to public sector employers but to families and the larger society. This study serves to inform multiple groups about the potential costs

associated with inadequate and adequate coping methods by showcasing the relationships that exist between work-related stress management practices among persons employed to enforce law and policy. Professional quality of life facets identified among the rigid control hardiness profile offers new information towards how unbalanced hardiness profiles are affected by work-related stress. Since coping techniques are contingent on stress appraisal and context (Lazarus & Folkman, 1984), the statistically significant relationship at $p < 0.05$ with emotion-focused coping techniques offers new insight to protect mental health in fields that enforce law and policy. More research is necessary to make a more substantial impact on creating training and awareness amongst organizations and persons. The identified relationships the predictor variables exhibit help to fill the gap in the scientific literature while simultaneously offering new ideas for relevant future studies.

References

Adams, R. E., Figley, C. R., & Boscarino, J. A. (2008). The comparison fatigue scale: Its use with social workers following urban disaster. *Research on Social Work Practice, 18*(3), 238–250. doi:10.1177/1049731507310190.

Adbi, H. (n.d.). *Factor rotations in factor analyses.* Retrieved from https://www.utdallas. edu/~herve/Abdi-rotations-pretty.pdf

Alter, A. L., Aronson, J., Darley, J. M., Rodriguez, C., & Ruble, D. N. (2010). Rising to the threat: Reducing stereotype threat by reframing the threat as a challenge. *Journal of Experimental Social Psychology, 46,* 166–171. Retrieved from www.elsevier.com/jesp

American Psychological Association. (2011). *What do psychologists do at disaster sites?* Retrieved from www.apa.org/helpcenter/disaster-site.aspx

American Psychological Association. (2013a). *APA Disaster Response Network helping communities in time of crisis: Making a difference in challenging times*. Retrieved from http://www.apa.org/practice/programs/drn/brochure.pdf

American Psychological Association. (2013b). *Disaster Response Network*. Retrieved from www.apa.org/practice/programs/drn/index.aspx

Andersen, J. P., Papazoglou, K., Koskelainen, M., & Nyman, M. (2014). Knowledge and training regarding the link between trauma and health. *SAGE Open*, *5*(2), 1–12. doi:10.1177/2158244015580380

Andersen, J. P., & Papazoglou, K. (2015). Compassion fatigue and compassion satisfaction among police officers: An understudied topic. *International Journal of Emergency Mental Health and Human Resilience, 17*(3), 661–663. doi:10.4172/1522-4821.1000259

Andersen, J. P., Papazoglou, K., Arnetz, B. B., & Collins, P. I. (2015). Mental preparedness as a pathway to police resilience and optimal functioning in the line of duty. *International Journal of Emergency Mental Health and Human Resilience*, *17*(3), 624–627. doi:10.4172/1522-4821.1000243

Andersen, J. P., Papazoglou, K., Koskelainen, M., Nyman, M., Gustafsberg, H., & Arnetz, B. B. (2015). Appling resilience promotion training amongst special forces police officers. *SAGE Open, 5*(2), 1–8. doi:10.1177/2158244015590446

Arnetz, B., Arble, E., Backman, L., Lynch, A., & Lublin, A. (2013). Assessment of a prevention program for work-related stress among urban police officers. *International Archives of Occupational and Environmental Health*, *86*(1), 79–88. doi:10.1007/s00420-012-0748-6

Arnold, M. B. (1945). Physiological differentiation of emotional states. *Psychological Review*, *52*(1), 35–48. doi:10.1037/h0061746

Arnold, M. B. (1968). In defense of Arnold's theory of emotion. *Psychological Bulletin*, *70*(4), 283–284. doi:10.1037/h0026252

Aytac, S. (2015). The sources of stress, symptoms of stress and anger styles as a psychosocial risk at occupational health and safety: A case study on Turkish

police officers. *Procedia Manufacturing, 3*, 6421–6428. doi:10.1016/j.promfg.2015.07.915

Bacharach, S. B., Bamberger, P. A., & Doveh, E. (2008). Firefighters, critical incidents, and drinking to cope: The adequacy of unit-level performance resources as a source of vulnerability and protection. *Journal of Applied Psychology, 93*(1), 155–169. doi:10.1037/0021-9010.93.1.155

Baker, J., & Berenbaum, H. (2007). Emotional approach and problem-focused coping: A comparison of potentially adaptive strategies. *Cognition & Emotion*, *21*(1), 95–118. doi:10.1080/02699930600562276

Bartone, P. T. (1984). *Stress and health in Chicago transit authority bus drivers* (Doctoral dissertation). Retrieved from www.hardiness-resilience.com/docs/Bartone-dissertation-all-1984.pdf

Bartone, P. T. (1995). *A short hardiness scale.* Retrieved from www.hardiness-resilience.com/docs/APS95HAN1.pdf

Bartone, P. T. (2006). Resilience under military operational stress: Can leaders influence hardiness? *Military Psychology, 18,* 131–148. doi:10.1207/s15327876mp1803s _10

Bartone, P. T. (2007). Test-retest reliability of the Dispositional Resilience Scale-15, a brief hardiness scale. *Psychological Reports*, *101*(3), 943–944. doi:10.2466/ pr0.101.3.943-944

Bartone, P. T. (2008). *DRS tools.* Retrieved from www.hardiness-resilience.com/drs-tools/

Bartone, P. T., Hystad, S. W., Eid, J., & Brevik, J. I. (2012). Psychological hardiness and coping style as risk/resilience factors for alcohol abuse. *Military Medicine*, *177*(5), 517–524. doi:10.7205/milmed-d-11-00200

Bartone, P. T., Eid, J., Hystad, S. W., Jocoy, K., Laberg, J. C., & Johnsen, B. H. (2015). Psychological hardiness and avoidance coping are related to risky alcohol use in returning combat veterans. *Military Behavioral Health*, *3*(4), 274–282. doi:10.1080/21635781.2015.1085931

Belsley, D. (1991). *Conditioning diagnostics: Collinearity and weak data in regression.* New York, NY: John Wiley & Sons.

Belsley, D. A., Kuh, E., & Welsch, R. E. (1980). The condition number. In *Regression diagnostics: Identifying influential data and sources of collinearity* (pp. 100–104). New York, NY: John Wiley & Sons.

Benard, B. (n.d.). *The foundations of the resiliency framework.* Retrieved from www.resiliency.com/free-articles-resources/the-foundations-of-the-resiliency-framework/

Benedek, D. M., Fullerton, C., & Ursano, R. J. (2007). First responders: Mental health consequences of natural and human-made disasters for public health and public safety workers. *Annual Review of Public Health, 28,* 55–68. doi:10.1146/annurev.publhealth.28.021406.144037

Bergeron, J. D., Biziak, G., & Krause, G. W. (2005). Well-being of the first responder. In *First responder* (7th ed.) (pp. 33–51). Retrieved from www.prenhall.com/division sect/app/bradybooks/newbrady/catalog/content/samplechapters/0131089900.pdf

Beutler, L. E., Reyes, G., Franco, Z., & Housley, J. (2007). The need for proficient mental health professionals in the study of terrorism. In Bongar, B., Brown, L. M., Beutler, L. E., Breckenridge, J. N., & Zimbardo, P. G. (Eds.), *Psychology of terrorism* (pp. 32–55). New York, NY: Oxford University Press.

Booth, B. (n.d.). *Training for mental health response.* Retrieved from http://theinteractgroup.com/blog/training-for-mental-health-response/

Box, G. E. P., & Tidwell, P. W. (1962). Transformation of the independent variables. *Technometrics, 4,* 531–550. doi:10.1080/00401706.1962.10490038

Brauser, D. (2011, September 23). *Genes plus environment may predict PTSD.* Retrieved from www.medscape.com/viewarticle/750335

Bride, B. E., Radey, M., & Figley, C. R. (2007). Measuring compassion fatigue. *Clinical Social Work Journal, 35*, 155–163. doi:10.1007/s10615-007-0091-7

Brouneus, K. (2014, March). On return from peacekeeping: A review of current research on psychological well-being in military personnel returning from operational deployment. *Journal of Military and Veterans' Health, 22*(1), 24–29. Retrieved from http://jmvh.org

Brown, S. G., & Daus, C. S. (2015). The influence of police officers' decision-making style and anger control on responses to work scenarios. *Journal of Applied*

Research in Memory and Cognition, 4, 294–302. doi:10.1016/j.jarmac.2015.04.

001

Burns, C. M., Morley, J., Bradshaw, R., & Domene, J. (2008). The emotional impact on

and coping strategies employed by police teams investigating internet child

exploitation. *Traumatology*, *14*(2), 20–31. doi:10.1177/1534765608319082

Butler, L., Morland, L. A., & Leskin, G. A. (2007). Psychological resilience in the face of

terrorism. In B. Bongar, L. M. Brown, L. E. Beutler, J. N. Breckenridge, &

P. G. Zimbardo (Eds.), *Psychology of terrorism* (pp. 400-417). New York, NY: Oxford

University Press.

Campbell, D. T., & Stanley, J. C. (1963). *Experimental and quasi-experimental designs*

for research. Chicago, IL: Rand McNally & Company.

Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider

the Brief COPE. *International Journal Of Behavioral Medicine*, *4*(1), 92. doi:

10.1207/s15327558ijbm0401_6

Carver, C. S. (2013). *COPE Inventory.* Retrieved from www.midss.org/content/cope-

inventory

Carver, C. S., Scheier, M., & Wientraub, J. (1989). Assessing coping strategies: A

theoretically based approach. *Journal of Personality and Social Psychology,*

56(2), 267-283. Retrieved from http://129.171.58.17/media/college-of-arts-and-

sciences/content-assets/psychology/documents/faculty/p89_COPE.pdf

Carver, C. S., & Connor-Smith, J. (2010). Personality and coping. *Annual Review of Psychology, 61,* 679-704. doi:10.1146/annurev.psych.093008.100352

Cerney, M. S. (1995). Treating the "heroic treaters." In C.R. Figley (Ed.), *Compassion fatigue: Coping with secondary traumatic stress disorder in those who treat the traumatized* (pp. 131-149). New York, NY: Taylor & Francis Group.

Chakraborty, R., Agrawal, M., & Rao, H. R. (2014). Information processing under stress: A study of Mumbai Police first responders. *IIMB Management Review, 26*, 91-104. doi:10.1016/j.iimb.2014.03.001

Cheng, C., Kogan, A., & Chio, J. H. (2012, July). The effectiveness of a new, coping flexibility intervention as compared with a cognitive-behavioral intervention in managing work stress. *Work & Stress, 26*(3), 272-288. doi:10.1080/ 02678373.2012.710369

Cheng, C., Lau, H. B., & Chan, M. S. (2014). Coping flexibility and psychological adjustment to stressful life changes: A meta-analytic review. *Psychological Bulletin*, *140*(6), 1582-1607. doi:10.1037/a0037913

Chopko, B. A., & Schwartz, R. C. (2009). The relation between mindfulness and posttraumatic growth: A study of first responders to trauma-inducing incidents. *Journal Of Mental Health Counseling, 31*(4), 363-376. doi:10.17744/ mehc.31.4.9w6lhk4v66423385

Cole, D., & Dempsey, J. X. (2006). *Terrorism and the constitution: Sacrificing civil liberties in the name of national security.* New York, NY: The New Press.

Collins, S. S., & Long, A. A. (2003). Working with the psychological effects of trauma: Consequences for mental health-care workers – A literature review. *Journal of Psychiatric & Mental Health Nursing, 10*(4), 417-424. doi: 10.1046/j.1365-2850.2003.00620.x

Commonwealth of Massachusetts. (2015a). *2015 police promotional education and experience claim.* Retrieved from www.governmentjobs.com/careers/ massachusetts/ jobs/1253472/2015-police-promotional-education-and-experience-claim

Commonwealth of Massachusetts. (2015b). *The official website of the Executive Office for Administration and Finance: Examination schedule.* Retrieved from www.mass.gov/anf/employment-equal-access-disability/civil-serv-info/exam-info/exam-sched/exam-schedule-2015.html

Conrad, D., & Kellar-Guenther, Y. (2006). Compassion fatigue, burnout, and compassion satisfaction among Colorado child protection workers. *Child Abuse & Neglect, 30*, 1071-1080. doi:10.1016/j.chiabu.2006.03.009

Coppens, C. M., de Boer, S. F., & Koolhaas, J. M. (2010). Coping styles and behavioral flexibility: Towards underlying mechanisms. *Philosophical Transactions of The Royal Society Biological Sciences, 365*, 4021-4028. doi:10.1098/rstb.2010.0217

Corrigan, P. W., & Shapiro, J. R. (2010). Measuring the impact of programs that challenge the public stigma of mental illness. *Clinical Psychology Review, 30*, 907-922. doi:10.1016/j.cpr.2010.06.004

Covey, J. T., Shucard, J. L., Violanti, J. M., Lee, J., & Schucard, D. W. (2013). The effects of exposure to traumatic stressors on inhibitory control in police officers: A dense electrode array study using a Go/NoGo continuous performance task. *International Journal of Psychophysiology, 87*(3), 363-375. doi:10.1016/ j.ijpsycho.2013.03.009

Craigie, M., Osseiran-Moisson, R., Hemsworth, D., Aoun, S., Francis, K., Brown, J., ... Rees, C. (2016). The influence of trait-negative affect and compassion satisfaction on compassion fatigue in Australian nurses. *Psychological Trauma: Theory, Research, Practice, And Policy*, *8*(1), 88-97. doi:10.1037/tra0000050

Creamer, T. L., & Liddle, B. J. (2005, February). Secondary traumatic stress among disaster mental health workers responding to the September 11 attacks. *Journal of Traumatic Stress, 18*(1), 89-96. doi:10.1002/jts.20008.

Creswell, J. W. (2011). *Research design: Qualitative, Quantitative, and Mixed Methods Approaches* (3rd ed.). New Delhi, India: Sage Publications India

Creswell, J. W. (2013). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). Thousand Oaks, CA: Sage Publications

Cukor, J., Wyka, K., Mello, B., Olden, M., Jayasinghe, N., Roberts, J., ... Difede, J. (2011). The longitudinal course of PTSD among disaster workers deployed to the World Trade Center following the attacks of September 11th. *Journal of Traumatic Stress, 24*(5), 506-514. doi:10.1002/jts.20672

Davies, E., Maybury, B., Colquhoun, M., Whitfield, R., Rossetti, T., & Vetter, N. (2008). Public access defibrillation: Psychological consequences in responders. *Resuscitation, 77*, 201-206. doi:10.1016/j.resuscitation.2007.11.012

Decker, J. T., Constantine Brown, J. L., Ong, J., & Stiney-Ziskind, C. A. (2015). Mindfulness, compassion fatigue, and compassion satisfaction among social work interns. *Social Work & Christianity*, *42*(1), 28-42. Retrieved from https://psycnet.apa.org/record/2015-04782-003

Dysvik, E., Natvig, G. K., Eikeland, O. J., Lindstrøm, T. C. (2005). Coping with chronic pain. *International Journal of Nursing Studies, 42*, 297–305. doi:10.1016/j.ijnurstu.2004.06.009

Elinson, Z. (2016, Jul 27). U.S. police deaths rose in first half of year; sixty-seven law-enforcement officers died in the line of duty. *Wall Street Journal (Online).* Retrieved from https://www.wsj.com/articles/u-s-police-deaths-rise-in-first-half-of-year-1469632736

Engel, C. C., Bray, R. M., Jaycox, L. H., Freed, M. C., Zatzick, D., Lane, M. E., … Katon, W. J. (2014). Implementing collaborative primary care for depression and posttraumatic stress disorder: Design and sample for a randomized trial in the U.S. military health system. *Contemporary Clinical Trials, 39,* 310-319. doi:10.1016/j.cct.2014.10.002

European Commission. (2019). European civil protection and humanitarian aid

    operations: Disaster preparedness [Fact sheet]. Retrieved from

    https://ec.europa.eu/echo/what/humanitarian-aid/disaster_preparedness_en

Faul, F., Erdfelder, E., Lang, A. G., & Buchner, A. (2007). G*Power 3: A flexible

    statistical power analysis program for the social, behavioral, and biomedical

    sciences. *Behavior Research Methods, 39*(2), 175-191. Retrieved from

    http://www.gpower.hhu.de

Faul, F., Erdfelder, E., Buchner, A., & Lang, A. G. (2009). Statistical power analyses

    using G*Power 3.1: Tests for correlation and regression analyses. *Behavior*

    Research Methods, 41(4), 1149-1160. doi:10.3758/BRM.41.4.1149

Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4th ed.). Thousand

    Oaks, CA: Sage Publications

Figley, C. R. (1995). Compassion fatigue: Toward a new understanding of the costs of

    caring. In B. H. Stamm (Ed), *Secondary traumatic stress: Self-care issues for*

    clinicians, researchers, and educators (pp. 3-28). Baltimore, MD: The Sidran

    Press.

Flarity, K., Nash, K., Jones, W., & Steinbruner, D. (2016). Intervening to improve

    compassion fatigue resiliency in forensic nurses. *Advanced Emergency Nursing*

    Journal, 38(2), 147-156. doi:10.1097/TME.0000000000000101

Fleming, J., & Ledogar, R. J. (2008). Resilience, an evolving concept: A review of literature relevant to aboriginal research. *Pimatisiwin*, *6*(2), 7–23. Retrieved from www.ncbi.nlm.nih.gov/pmc/articles/PMC2956753/

Folkman, S., & Lazarus, R. S. (1988). Coping as a mediator of emotion. *Journal of Personality and Social Psychology, 54*(3), 466-475. Retrieved from https://www.ncbi.nlm.nih.gov/pubmed/3361419

Folkman, S., Lazarus, R. S., Dunkel-Schetter, C., DeLongis, A., & Gruen, R. J. (1986). Dynamics of a stressful encounter: Cognitive appraisal, coping, and encounter outcomes. *Journal of Personality and Social Psychology*, *50*(5), 992-1003. Retrieved from https://psycnet.apa.org/PsycARTICLES/journal/psp/118/1

Forbes, C. E., & Leitner, J. B. (2014). Stereotype threat engenders neural attentional bias toward negative feedback to undermine performance. *Biological Psychology, 102,* 98-107. doi:10.1016/j.biopsycho.2014.07.007

Fortney, L., Luchterhand, C., Zakletskaia, L., Zgierska, A., & Rakel, D. (2013). Abbreviated mindfulness intervention for job satisfaction, quality of life, and compassion in primary care clinicians: A pilot study. *The Annals of Family Medicine*, *11*(5), 412-420. doi:10.1370/afm.1511

Frankfort-Nachmias, C., & Nachmias, D. (2008). *Research methods in the social sciences* (7th ed.). New York, NY: Worth Publishers.

Freedman, T. G. (2004). Voices of 9/11 first responders: Patterns of collective resilience. *Clinical Social Work Journal, 32*(4), 377-393. Retrieved from http://old.impact-kenniscentrum.nl/doc/kennisbank/1000011188-1.pdf

Freedman, V. A., Slifkin, R. T., & Patterson, P. D. (2009). Recruitment and retention in rural and urban EMS: Results from a national survey of local EMS directors. *Journal of Public Health Management & Practice, 15*(3), 246-252. doi:10.1097/Phh.0b013e3181a117fc

Galatzer-Levy, I. R., Steenkamp, M. M., Brown, A. D., Qian, M., Inslicht, S., Henn-Hasse, C., … Marmar, C. R. (2014). Cortisol response to an experimental stress paradigm prospectively predicts long-term distress and resilience trajectories in response to active police service. *Journal of Psychiatric Research, 56,* 36-42. doi:10.1016/j/psychires.2014.04.020

Garrosa, E., Rainho, C., Moreno-Jimenez, B., & Monteiro, M. J. (2010). The relationship between job stressors, hardy personality, coping resources and burnout in a sample of nurses: A correlational study at two time points. *International Journal of Nursing Studies, 47*, 205-215. doi:10.1016/j.ijnurstu.2009.05.014

Gill, J., Lee, H., Barr, T., Baxter, T., Heinzelmann, M., Rak, H., & Mysliwiez, V. (2014). Lower health related quality of life in U.S. military personnel is associated with service-related disorders and inflammation. *Psychiatry Research, 216*(1), 116-122. doi:10.1016/j.psychres. 2014.01.046

Gist, R. (2007). Promoting resilience and recovery in first responders. In Bongar, B.,

    Brown, L. M., Beutler, L. E., Breckenridge, J. N., & Zimbardo, P. G. (Eds.),

    Psychology of terrorism (pp. 418-433). New York, NY: Oxford University Press.

Greenhill, J. (2019). Lengyel: Israeli readiness, preparedness, set an example. Retrieved

    from https://www.army.mil/article/230283/lengyel_israeli_readiness

    _preparedness_set_an_example

Habersaat, S. A., Geiger, A. M., Abdellaoui, S., & Wolf, J. M. (2015). Health in police

    officers: Role of risk factor clusters and police divisions. *Social Science &*

    Medicine, 143, 213-222. doi:10.1016/j.socscimed. 2015.08.043

Hannan, S., Gallagher, M. A., & Perrin, A. M. (2015). Military active and reserve

    component mix: The grey space. *Interfaces*, *45*(4), 283-292. doi:/10.1287/

    inte.2015.0795

Harr, C. (2013). Promoting workplace health by diminishing the negative impact of

    compassion fatigue and increasing compassion satisfaction. *Social Work &*

    Christianity, *40*(1), 71-88. Retrieved from https://www.nacsw.org/

    publications/journal-swc/

Herman, J. L., & Tetrick, L. E. (2009). Problem-focused versus emotion-focused coping

    strategies and repatriation adjustment. *Human Resource Management, 48*(1), 69-

    88. doi:10.1002/hrm.20267

Hotchkiss, J. T. (2018). Mindful self-care and secondary traumatic stress mediate a

    relationship between compassion satisfaction and burnout risk among hospice

care professionals. *The American Journal of Hospice & Palliative Care, 35*(8), 1099-1108. doi:10.1177/1049909118756657

Hox, J., & van de Schoot, R. (2013). Robust methods for multilevel analysis. In M. Scott, J. Simonoff, & B. Marx (Eds.), *The SAGE handbook of multilevel modeling* (pp. 387-403). London, England: SAGE Publications Ltd. doi:10.4135/ 9781446247600.n22

International Association of Chiefs of Police. (2016). *Types of law enforcement agencies.* Retrieved from http://discoverpolicing.org/whats_like/?fa=types_jobs

Inzlicht, M., & Kang, S. K. (2010). Stereotype threat spillover: How coping with threats to social identity affects aggression, eating, decision making, and attention. *Journal of Personality and Social Psychology,* 99(3), 467-481. doi:10.1037/ a0018951

Jacobson, J. M. (2012). Risk of compassion fatigue and burnout and potential for compassion satisfaction among employee assistance professionals: Protecting the workforce. *Traumatology, 18*(3), 64-72. doi:10.1177/15347656 11431833

Jakimowicz, S., Perry, L., & Lewis, J. (2018). Compassion satisfaction and fatigue: A cross-sectional survey of Australian intensive care nurses. *Australian Critical Care, 31*(6), 396–405. doi:10.1016/j.aucc.2017.10.003

Janesick, V. J. (2011). *"Stretching" exercises for qualitative researchers* (3rd ed.). Thousand Oaks, CA: Sage Publications.

Jo, Y., & Shim, H. S. (2015). Determinants of police job satisfaction: Does community matter? *International Journal of Law, Crime and Justice, 43*, 235-251. doi:10.1016/j.ijlcj.2014.09.002

Johnsen, B. H., Hystad, S. W., Bartone, P. T., Laberg, J. C., & Eid, J. (2014). Hardiness profiles: Defining clusters of the Dispositional Resilience Scale and their relation to soldiers' health. *Military Behavioral Health*, *2*(2), 123-128. doi:10.1080/ 21635781.2013.867789

Kaiseler, M., Querios, C., Passos, F., & Sousa, P. (2014). Stress appraisal, coping, and work engagement among police recruits: An exploratory study. *Psychological Reports: Employment Psychology & Marketing, 114*(2), 635-646. doi:10.2466/ 01.16.PR0.114k21w2

Kanter, J. (2007). Compassion fatigue and secondary traumatization: A second look. *Clinical Social Work Journal, 35*, 289-293. doi: 10.1007/s10615-007-0125-1

Kato, T. (2012). Development of the Coping Flexibility Scale: Evidence for the coping flexibility hypothesis. *Journal of Counseling Psychology, 59*(2), 262-273. doi: 10.1037/a0027770

Kavetski, B. (2016). *High turnover among public safety employees.* Retrieved from https://www.linkedin.com/pulse/high-turnover-among-public-safety-employees-a-a-s-nremt-p

Klausen, J., Campion, S., Needle, N., Nguyen, G., & Libretti, R. (2016). Toward a behavioral model of "homegrown" radicalization trajectories. *Studies in Conflict & Terrorism*, *39*(1), 67–83. doi:10.1080/1057610X.2015.1099995

Kleim, B., & Westphal, M. (2011). Mental health in first responders: A review and recommendation for prevention and intervention strategies. *Traumatology, 17*(4), 17-24. doi:10.1177/1534765611429079

Kobasa, S. C. (1979). Stressful life events, personality, and health: An inquiry into hardiness. *Journal of Personality And Social Psychology*, *37*(1), 1-11. doi:10.1037/0022-3514.37.1.1

Ladstätter, F., Cooper-Thomas, H. D., Moreno-Jiménez, B., Ponsoda, V., Song, S., & Garrosa, E. (2018). Deciphering hardiness: Differential relationships of novelty seeker, rigid control, and hardy profiles on nurses' burnout and their effects. *Nursing and Advanced Health Care, 1*(010), 1-9. Retrieved from www.researchgate.net/publication/326522102

Laureate Education, Inc. (Executive Producer). (2010a). *Doctoral research: Ensuring quality in qualitative research*. Baltimore, MD: Laureate Education.

Laureate Education, Inc. (Executive Producer). (2010b). *Doctoral research: Interviewing techniques, part I.* Baltimore, MD: Laureate Education.

Laureate Education, Inc. (Executive Producer). (2010c). *Doctoral research: Interviewing techniques, part II.* Baltimore, MD: Laureate Education.

Lazarus, R. S., & Alfert, E. (1964). Short-circuiting of threat by experimentally altering

cognitive appraisal. *The Journal of Abnormal and Social Psychology*, *69*(2), 195-

205. doi:10.1037/h0044635

Lazarus, R. S., and Folkman, S. (1984). *Stress, appraisal, and coping.* New York, NY:

Springer Publishing Company.

Levone, B. R., Cryan, J. F., & O'Leary, O. F. (2015). Role of adult hippocampal

neurogenesis in stress resilience. *Neurobiology of Stress, 1,*147-155.

doi:10.1016/j/ynstr.2014.11.003

Levush, R. (2019). Israel: Military draft law and enforcement. *Library of Congress.*

Retrieved from https://www.loc.gov/law/help/military-draft/israel.php

Liang, H., Xue, Y., Pinsonneault, A., & Wu, Y. A. (2019). What users do besides

problem-focused coping when facing IT security threats: An emotion-focused

coping perspective. *MIS Quarterly, 43*(2), 373–394. doi:10.25300/MISQ/

2019/14360

Luthans, F., Vogelgesang, G. R., & Lester, P. B. (2006). Developing the psychological

capital of resiliency. *Human Resource Development Review, 5*(1), 25-44.

doi:10.1177/15344843 05285335

Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical

evaluation and guidelines for future work. *Child Development*, *71*(3), 543–562.

Retrieved from www.ncbi.nlm.nih.gov/pmc/articles/PMC1885202/

Maier, S. F., & Watkins, L. R. (2010). Role of the medial prefrontal cortex in coping and resilience. *Brain Research, 1355,* 52-60. doi:10.1016/j.brainres.2010.08.039

Mandal, A. (2017). *What is neurogenesis?* Retrieved from https://www.news-medical.net/health/What-is-Neurogenesis.aspx

Marmar, C. R., McCaslin, S. E., Metzler, T. J., Best, S., Weiss, D. S., Fagan, J., ... Neylen, T. (2006). Predictors of posttraumatic stress in police and other first responders. *Annals of The New York Academy of Sciences, 1071*(1), 1-18. doi:10.1196/annals.1364.001

Maynard, M. T., & Kennedy, D. M. (2016). *Team adaptation and resilience: What do we know and what can be applied to long-duration isolated, confined, and extreme contexts.* Retrieved from https://ston.jsc.nasa.gov/collections/TRS/_techrep/TM-2016-218597.pdf

McClain, D. (2016). Black lives matter. *Nation, 302*(19/20), 18-21. Retrieved from www.thenation.com

McKoy, K. D. (2013). *The impact of stress on first responders: A phenomenological study* (Doctoral dissertation). Retrieved from ProQuest Dissertations and Theses Database. (Publication no. 3419233). Retrieved from http://udini.proquest.com/view/the-impact-of-stress-on-first-goid:756749159/

Miller, H. A., Mire, S., & Kim, B. (2009). Predictors of job satisfaction among police officers: Does personality matter? *Journal of Criminal Justice, 37*(5), 419-426. doi:10.1016/j.jcrimjus.2009.07.001

Miller, L. (2005). Police officer suicide: Causes, prevention, and practical intervention

strategies. *International Journal of Emergency Mental Health, 7*(2), 101-114.

Retrieved from https://www.psychceu.com/miller/Miller_Pol_Ofcr_Suicide.pdf

Morgan, C. A., Hazlett, G., Wang, S., Richardson, E. G., Schnurr, P., & Southwick, S. M.

(2001). Symptoms of dissociation in humans experiencing acute, uncontrollable

stress: A prospective investigation. *The American Journal of Psychiatry, 158*(8),

1239-1247. Retrieved from http://search.proquest.com/docview/220463045

?accountid=14872

Nash, W. P., Boasso, A. M., Steenkamp, M. M., Larson, J. L., Lubin, R. E., & Litz, B. T.

(2014). Posttraumatic stress in deployed marines: Prospective trajectories of early

adaptation. *Journal of Abnormal Psychology*, doi:10.1037/abn0000020

National Institute of Justice. (2004). Improving law enforcement. In *2004 Annual Report*

(pp. 11-16). Retrieved from https://www.ncjrs.gov/pdffiles1/nij/209274d.pdf

Oakley, R. H., & Cidlowski, J. A. (2010). *Cellular processing of the glucocorticoid*

receptor gene and protein: New mechanisms for generating tissue specific actions

of glucocorticoids. Retrieved from http://www.jbc.org/content/early/2010

/12/13/jbc.R110.179325.full.pdf

Olatunji, B. O., Armstrong, T., Qianqian, F., & Mimi, Z. (2014). Risk and resiliency in

posttraumatic stress disorder: Distinct roles of anxiety and disgust sensitivity.

Psychological Trauma: Theory, Research, Practice & Policy, 6(1), 50-55.

doi:10.1037/a0029682

Papazoglou, K. (2013). Conceptualizing police complex spiral trauma and its applications in the police field. *Traumatology, 19*(3), 196-209. doi:10.1177/ 1534765612466151

Parker, J. D. A., & Endler, N. S. (1992). Coping with coping assessment: A critical review. *European Journal of Personality*,*6*(5), 321–344. doi:10.1002/ per.2410060502

Paton, D., & Violanti, J. M. (2007). Terrorism stress risk assessment and management. In B. Bongar, L. M. Brown, L. E. Beutler, J. N. Breckenridge, & P. G. Zimbardo (Eds.), *Psychology of terrorism* (pp. 225-246). New York, NY: Oxford University Press.

Pearlin, L. I., and Schooler, C. (1978). The structure of coping. *Journal of Health and Social Behavior, (19)*, 2–21. doi:10.2307/2136319

Pesaran, M. H. (2015). The multicollinearity problem. In *Time series and panel data econometrics* (pp. 67-72). New York, NY: Oxford University Press.

Pietrzak, E., Pullman, S., Cotea, C., & Nasveld, P. (2012, August). Effects of deployment on mental health in modern military forces: A review of longitudinal studies. *Journal of Military and Veterans' Health, 20*(3), 24-36. Retrieved from http://jmvh.org/article/effects-of-deployment-on-mental-health-in-modern- military-forces-a-review-of-longitudinal-studies/

Pines, E. W., Rauschhuber, M. L., Norgan, G. H., Cook, J. D., Canchola, L., Richardson, C., & Jones, M. (2012). Stress resiliency, psychological empowerment and

conflict management styles among baccalaureate nursing students. *Journal of Advanced Nursing*, *68*(7), 1482-1493. doi:10.1111/j.1365-2648.2011.05875.x

Possemato, K., Acosta, M. C., Fuentes, J., Lantiga, L. J., Marsch, L. A., Maisto, S. A., … Rosenblum, A. (2014). A web-based self-management program for combat veterans with PTSD and substance misuse: Program development and veteran feedback. *Cognitive and Behavioral Practice,* 1-14. doi:10.1016/ j.cbpra. 2014.03.005

Probst, T. M., and Jiang, L. (2016). Mitigating physiological responses to layoff threat: An experimental test of the efficacy of two coping interventions. *International Journal of Environmental Research and Public Health, 13,* 338-353. doi:10. 3390/ijerph13030338

Psychology Department of the University of Miami. (2007). *Brief COPE.* Retrieved from www.psy.miami.edu/faculty/ccarver/sclBrCOPE.html

Pulido, M. L. (2007, July). In their words: Secondary traumatic stress in social workers responding to the 9/11 terrorist attacks in New York City. *Social Work, 52*(3), 279-281. doi:10.1093/sw/52.3.279

Radey, M., & Figley, C. R. (2007). The social psychology of compassion. *Clinical Social Work Journal*, *35*(3), 207-214. doi:10.1007/s10615-007-0087-3

Rahn, M. (2016). *Factor analysis: A short introduction, part 2 – rotations.* Retrieved from www.theanalysisfactor.com/rotations-factor-analysis

Rahnama, M., Shahdadi, H., Bagheri, S., Moghadam, M. P., & Absalan, A. (2017). The relationship between anxiety and coping strategies in family caregivers of patients with trauma. *Journal of Clinical and Diagnostic Research, 11*(4), IC06–IC09. doi:10.7860/JCDR/2017/25951.9673

Rao, V., & Singh, S. (2017). Job stress, well-being and coping: A correlational study among police personnel. *The International Journal of Indian Psychology, 4*(3), 30-34. doi:10.25215/0403.144

Rusch, N., Todd, A. R., Bodenhausen, G. V., & Corrigan, P. W. (2010). Biogenetic models of psychopathology, implicit guilt, and mental illness stigma. *Psychiatry Research 179*, 328-332. doi:10.1016/j.psychres.2009.09.010

Rutkow, L., Gable, L., & Links, J. M. (2011). Protecting the mental health of first responders: Legal and ethical considerations. *Journal of Law, Medicine & Ethics, 39*, 56-59. doi:10.1111/j.1748-720X.2011.00567.x

Rutter, M. (1985). Resilience in the face of adversity: Protective factors and resistance to psychiatric disorder. *The British Journal of Psychiatry, 147*(6), 598-611. doi:10.1192/bjp.147.6.598

Ruzek, J. I., Marguen, S., & Litz, B. T. (2007). Evidence-based interventions for survivors of terrorism. In B. Bongar, L. M. Brown, L. E. Beutler, J. N. Breckenridge, & P. G. Zimbardo (Eds.), *Psychology of terrorism* (pp. 247-272). New York, NY: Oxford University Press.

Sadler, M. S., Meagor, E. L., & Kaye, K. E. (2012). Stereotypes of mental disorders

    differ in competence and warmth. *Social Science & Medicine, 74*, 915-922.

    doi:10.1016/j.socscimed.2011.12.019

Sandvik, A. M., Bartone, P. T., Hystad, S. W., Phillips, T. M., Thayer, J. F., & Johnsen,

    B. H. (2013). Psychological hardiness predicts neuroimmunological responses to

    stress. *Psychology, Health & Medicine*, *18*(6), 705-713.

    doi:10.1080/13548506.2013.772304

Schoenmakers, E. C., van Tilburg, T. G., & Fokkema, T. (2015). Problem-focused and

    emotion-focused coping options and loneliness: How are they related? *European*

    Journal of Ageing, *12*(2), 153–161. doi:10.1007/s10433-015-0336-1

Schultz, M., Glickman, M. E., & Eisen, S. V. (2014). Predictors of decline in overall

    mental health, PTSD, and alcohol use in OEF/OIF veterans. *Comprehensive*

    Psychiatry, 55, 1654-1664. doi:10.1016/j.comppsych.2014.06.003

Shaw, D., Scully, J., & Hart, T. (2014). The paradox of social resilience: How cognitive

    strategies and copying mechanisms attenuate and accentuate resilience. *Global*

    Environmental Change, 25, 194-203. doi:10.1016/j.gloenvcha.2014. 01.006

Speisman, J. C., Lazarus, R. S., Mordkoff, A., & Davison, L. (1964). Experimental

    reduction of stress based on ego-defense theory. *The Journal of Abnormal And*

    Social Psychology, *68*(4), 367-380. doi:10.1037/h0048936

Sprang, G. S., Clark, J. J., & Whitt-Woosley, A. (2007). Compassion fatigue,

    Compassion satisfaction, and burnout: Factors impacting a professional's quality

of life. *Journal of Loss & Trauma*, *12*(3), 259-280. doi:10.1080/
15325020701238093

Stamm, B. H. (2002). Measuring compassion satisfaction as well as fatigue:
Developmental history of the Compassion Satisfaction and Fatigue Test. In C. R.
Figley (Ed.), *Treating compassion fatigue* (pp. 107-119). New York, NY:
Brunner-Routledge.

Stamm, B. H. (2010). The ProQOL (*Professional Quality of Life Scale: Compassion
Satisfaction and Compassion Fatigue).* Pocatello, ID: ProQOL.org, retrieved May
14, 2019, www.proqol.org

Stamm, B. H. (2015)*. Professional Quality of Life Elements Theory and measurement*.
Retrieved from www.ProQOL.org

Stanley, I. H., Hom, M. A., & Joiner, T. E. (2016). A systematic review of suicidal
thoughts and behaviors among police officers, firefighters, EMTs, and
paramedics. *Clinical Psychology Review, 44*, 25-44. doi:10.1016/
j.cpr.2015.12.002

Statistics Solutions. (2013). *Homoscedasticity.* Retrieved from www.statisticssolutions.
com/homoscedasticity/

Statistics Solutions. (2016a). *Assumptions of multiple linear regression.* Retrieved from
www.statistics solutions.com/assumptions-of-multiple-linear-regression/

Statistics Solutions. (2016b). *Conduct and interpret a factor analysis.* Retrieved from
www.statisticssolutions.com/factor-analysis-2

Steffen, L. E., & Smith, B. W. (2013). The influence of between and within-person hope among emergency responders on daily affect in a stress and coping model. *Journal of Research in Personality, 47,* 738-747. doi:10.1016/j.jrp. 2013.06.008

Stellman, J. M., Smith, R. P., Katz, C. L., Sharma, V., Charney, D.S., Herbert, R., Moline, J., Luft, B. J., … Southwick, S. (2008, May). Enduring mental health morbidity and social function impairment in World Trade Center rescue, recovery, and cleanup workers: The psychological dimension of an environmental health disaster. *Environmental Health Perspectives.* doi:10.1289/ehp.11164

Stephens, D., Fiedler, M. L., & Edwards, S. (2013). *OSW group meeting summary: Vehicle operation, risk management, and problem-based learning, April 25, 2012*. Washington, DC: Office of Community Oriented Policing Services. Retrieved from www.cops.usdoj.gov/pdf/e071219497_OSW_Summary.pdf

Szeto, A. C. H., & Dobson, K. S. (2010). Reducing the stigma of mental disorders at work: A review of current workplace anti-stigma intervention programs. *Applied and Preventive Psychology, 14,* 41-56. doi:10.1016/j.appsy.2011.11.002

Tabachnick, B. G., & Fidell, L. S. (2014). *Using multivariate statistics* (6th ed.). Essex, United Kingdom: Pearson.

Taylor, C., & Gibbs, G. R. (2010, June). *How and what to code.* Retrieved from http://onlineqda.hud.ac.uk/Intro_QDA/how_what_to_code.php

Tehrani, N. (2009). Compassion fatigue: Experiences in occupational health, human resources, counselling and police. *Occupational Medicine, 60*(2), 133-138. doi:10.1093/occmed/kqp174

The Resilience Center. (2015). *The Resilience Center: Home of the true resilience scale for researchers.* Retrieved from www.resiliencescale.com/your-resilience/for-researchers/

Thomassen, A. G., Hystad, S. G., Johnsen, B. H., Johnsen, G., E., & Bartone, P. T. (2018) The effect of hardiness on PTSD symptoms: A prospective mediational approach. *Military Psychology, 30*(2), 142-151, doi:10.1080/08995605. 2018.1425065.

Treglown, L., Palaiou, K., Zarola, A., & Furnham, A. (2016). The dark side of resilience and burnout: A moderation-mediation model. *PLoS ONE*, *11*(6), e0156279. doi:10.1371/journal.pone.0156279

Trochim, W. M. K. (2006a). *Conclusion validity: Improving conclusion validity.* Retrieved from www.socialresearchmethods.net/kb/concimp.php

Trochim, W. M. K. (2006b). *Conclusion validity: Statistical power.* Retrieved from www.socialresearchmethods.net/kb/power.php

Trochim, W. M. K. (2006c). *Conclusion validity: Threats to conclusion validity.* Retrieved from www.socialresearchmethods.net/kb/concthre.php

Trochim, W. M. K. (2006d). *Design: Internal validity.* Retrieved from www.socialresearch methods.net/kb/intval.php

Trochim, W. M. K. (2006e). *Design: Internal validity*: *Establishing cause and effect.* Retrieved from www.socialresearchmethods.net/kb/causeeff.php

Trochim, W. M. K. (2006f). *Design: Internal validity: Multiple group threats.* Retrieved from www.socialresearchmethods.net/kb/intmult.php

Trochim, W. M. K. (2006g). *Design: Internal validity: Regression to the mean.* Retrieved from www.socialresearchmethods.net/kb/regrmean.php

Trochim, W. M. K. (2006h). *Design: Internal validity*: *Single group threats.* Retrieved from www.socialresearchmethods.net/kb/intsing.php

Trochim, W. M. K. (2006i). *Design: Internal validity*: *Social interaction threats.* Retrieved from www.socialresearchmethods.net/kb/intsoc.php

Trochim, W. M. K. (2006j). *Qualitative validity.* Retrieved from www.socialresearch methods.net/kb/qualval.php

Trochim, W. M. K. (2006k). *Sampling: External validity.* Retrieved from www.social researchmethods.net/kb/external.php

United States Department of Justice Office of Community Oriented Policing Services. (2012, July). *Safety and health information and education for law enforcement departments: An annotated bibliography*. Retrieved from www.cops.usdoj.gov/ Publications /03128445_Safety_Health_Information.pdf

United States Department of Justice Office of Community Oriented Policing Services. (2014). *National Officer Safety and Wellness Group: 16 priorities.* Retrieved from www.cops.usdoj.gov/Default.asp?Item=2605

Violanti, J. M., & Gehrke, A. (2003). Police trauma encounters: precursors of compassion fatigue. *International Journal of Emergency Mental Health*, *6*(2), 75-80. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/15298078

Wagnild, G. M. (2009). A review of the Resilience Scale. *Journal of Nursing Measurement, 17*(2), 105-113. doi:10.1891/1061-3749.17.2.105

Wagnild, G. M., & Young, H. M. (1993). Development and psychometric evaluation of the Resilience Scale. *Journal of Nursing Measurement, 1*(2), 165-178. Retrieved from www.resiliencescale.com/wp-content/uploads/2014/06/Wagnild-Young-psychom-R.pdf

Waite, P. J., & Richardson, G. E. (2004). Determining the efficacy of resiliency training in the work site. *Journal of Allied Health, 33*(3), 178-183. Retrieved from www.asahp.org/journal-of-allied-health

Wang, X. L., Chan, C. L. W., Shi, Z. B., & Wang, B. (2013). Mental health risks in local workforce engaged in disaster relief and reconstruction. *Qualitative Health Research, 23*(2), 207-217. doi:10.1177/1049732312467706

Wassermann, A., Meiring, D., & Becker, J. R. (2018). Stress and coping of police officers in the South African Police Service. *South African Journal of Psychology*, 1-12. doi:10.1177/0081246318763059

Werner, E. E. (1989). High-risk children in young adulthood: A longitudinal study from birth to 32 years. *American Journal Of Orthopsychiatry*, *59*(1), 72-81. doi:10.1111/j.1939-0025.1989.tb01636.x

Whitt-Woosley, A., & Sprang, G. (2018). Secondary traumatic stress in social science researchers of trauma-exposed populations. *Journal of Aggression, Maltreatment & Trauma*, *27*(5), 475-486. doi:10.1080/10926771.2017.1342109

Williams, R. (2015). *Heteroskedasticity.* Retrieved from https://www3.nd.edu/~rwilliam/stats2/l25.pdf

Wilson, J. M. (2012). Articulating the dynamic police staffing challenge: An examination of supply and demand. *Policing: An International Journal of Police Strategies & Management*, *35*(2), 327-355. doi:10.1108/13639511211230084

Win, S., & Ho, R. (2017). Life satisfaction of seminary final year students in Yangon, Myanmar: a path analytic study of the direct and indirect influences of coping styles being mediated by stress, anxiety and depression. *Scholar: Human Sciences, 8*(2), 18-28. Retrieved from http://assumptionjournal.au.edu

Wood, S. K., & Bhatnagar, S. (2014). Resilience to the effects of social stress: Evidence from clinical and preclinical studies on the role of coping strategies. *Neurobiology of Stress,* 1-10. doi:10.1016/j.ynstr.2014.11.002

Yen, J. Y., Lin, H. C., Chou, W. P., Liu, T. L., & Ko, C. H. (2019). Associations among resilience, stress, depression, and internet gaming disorder in young adults. *International Journal of Environmental Research and Public Health, 16*(17), 3181-3192. doi:10.3390/ijerph16173181.

Zuckerman, M. (1979). *Sensation seeking: Beyond the optimal level of arousal.* Hilldale, NJ: Lawrence Erlbaum Associates, Inc.

Zuckerman, M., Bone, R. N., Neary, R., Mangelsdorff, D., & Brustman, B. (1972). What is the sensation seeker: Personality trait and experience correlates of sensation-seeking scales. *Journal of Consulting and Clinical Psychology, (39)*2, 308-321. Retrieved from https://www.researchgate.net/publication/18761913

Zuckerman, M., & Cohen, N. (1964). Sources of reports of visual and auditory sensations in perceptual-isolation experiments. *Psychological Bulletin, 62*(1), 1-20. Retrieved from https://psycnet.apa.org/PsycARTICLES/journal/bul/146/1

Zuckerman, M., Eysenck, S., & Eysenck, H. J. (1978). Sensation seeking in England and America: Cross-cultural, age, and sex comparisons. *Journal of Consulting* and *Clinical Psychology*, *46*(1), 139 - 149. Retrieved from www.ncbi.nlm.nih.gov/pubmed/627648

Zuckerman, M., Kolin, E. A., Price, L., & Zoob, I. (1964). Development of a sensation-seeking scale. *Journal of Consulting Psychology*, *28*(6), 477-482. doi:10.1037/h0040995

Zuckerman, M., & Link, K. (1968). Construct validity for the Sensation-Seeking Scale. *Journal of Consulting and Clinical Psychology, 32*(4), 420-426. doi:10.1037/h0026047

Appendix A: Recruitment Flyer

VOLUNTEERS WANTED: RESEARCH STUDY
THE RELATIONSHIP BETWEEN PROFESSIONAL QUALITY OF LIFE, COPING
MECHANISMS, AND MENTAL FORTITUDE

Do you currently work or have worked enforcing policy and laws on the federal, state, tribal, or local level in the military, corrections, police departments, detectives, investigators, special agents, security and protection, etc.? Do you know someone that fits this description that you can share this announcement? I am conducting a research study regarding the impact professional quality of life and coping mechanisms used at work have on mental fortitude and would like your input!

Participation in this research can help to investigate coping patterns that positively impact mental health in policing environments. Research results can help to attract, retain, develop, and support workforces better. Results can also help to reduce compassion fatigue, burnout, secondary traumatic stress, and maladaptive coping practices.

This quantitative study uses survey questions from the Dispositional Resilience Scale/DRS 15-R, the Professional Quality of Life Scale/ProQOL, the Resilience Scale/RS14, and the Brief COPE. It will take approximately 10 minutes to complete the questions from all the scales. Research questions can be accessed via the Survey Monkey link.

Participation is voluntary, anonymous, and can be terminated at any time without consequence. Participant rights can be discussed with the Research Participant Advocate at Walden University. Questions can be directed to IRB. The researcher can also be contacted by email for any questions, as well as for aggregate study results.

Appendix B: Electronic Recruitment Announcement

<u>VOLUNTEERS WANTED FOR RESEARCH STUDY:</u> THE RELATIONSHIP BETWEEN PROFESSIONAL QUALITY OF LIFE, COPING MECHANISMS, AND MENTAL FORTITUDE

Do you currently work or have worked enforcing laws on the federal, state, tribal, or local level in the military, corrections, police departments, detectives, investigators, special agents, security and protection, etc.? Do you know someone that fits this description that you can share this announcement? I am conducting a research study regarding the impact professional quality of life and coping mechanisms used at work have on mental fortitude and would like your input!

Participation in this research can help to investigate coping patterns that positively impact mental health in policing environments. Research results can help to attract, retain, develop, and support workforces better. Results can also help to reduce compassion fatigue, burnout, secondary traumatic stress, and maladaptive coping practices.

It will take approximately 5-12 minutes to complete the questions from all the scales. Participation is anonymous and can be terminated at any time without consequence.

If you are interested in supporting this cause, please click on the link for the survey.

Additional questions can be directed to the researcher or the Research Participant Advocate at Walden University. You can also email the IRB.

The researcher can also be contacted to provide aggregate study results to interested persons.

Appendix C: Permission for DRS-15R

Hello,

MHS is happy to grant you the research discount for the DRS-15 for use in your research titled "The Relationship Between Professional Quality Life, Coping Mechanisms, and Mental Fortitude."

Please find attached the DRS-15. You may use this in unlimited quantities for 1 year.

The Auto-Score Form will automatically calculate the scores when you print it. I have also included the Hand Scoring form in case you need this.

I will send you the invoice shortly.

Thank you,

MULTI-HEALTH SYSTEMS INC. (MHS)

Appendix D: Permission for ProQOL

**Permission for Use of the ProQOL (Professional Quality of Life Scale:
Compassion Satisfaction and Compassion Fatigue) www.proqol.org**

Accompanied by the email to you, this document grants you permission to use for your study or project

The ProQOL(Professional Quality of Life Scale: Compassion Satisfaction and Compassion Fatigue) www.ProQOL.org

Prior to beginning your project and the time of any publications, please verify that you are using the latest version by checking the website. All revisions are posted there. If you began project with an earlier version, please reference both to avoid confusion for readers of your work.

This permission covers non-profit, non-commercial uses and includes permission to reformat the questions into a version that is appropriate for your use. This may include computerizing the measure.

Please print the following reference or credit line in all document that include results gathered from the use of the ProQOL.

Stamm, B. H. (2010). The ProQOL (*Professional Quality of Life Scale: Compassion Satisfaction and Compassion Fatigue).* Pocatello, ID: ProQOL.org retrieved [date] www.proqol.org

Help us help all of us. Please consider donating a copy of your raw data to the data bank. You can find more about the data bank and how you can donate at www.proqol.org and www.proqol.org/Donate_Data.html. Data donated to the ProQOL Data Bank allows us to advance the theory of compassion satisfaction and compassion fatigue to improve and norm the measure itself.

Appendix E: Permission for RS-14

INTELLECTUAL PROPERTY LICENSE AGREEMENT

This Intellectual Property License Agreement ("Agreement") is made and effective this ("Effective Date") by and between The Resilience Center, PLLP ("Licensor") and ("Licensee").

Licensor has developed and licenses to users its Intellectual Property, marketed under the names "the Resilience Scale," "RS", "14-item Resilience Scale" and "RS14," and (the "Intellectual Property").

Licensee desires to use the Intellectual Property.

NOW, THEREFORE, in consideration of the mutual promises set forth herein, Licensor and Licensee agree as follows:

1. License.
Licensor hereby grants to Licensee a 1-year, non-exclusive, limited license to use the Intellectual Property as set forth in this Agreement.

2. Restrictions.
Licensee shall not modify, license or sublicense the Intellectual Property, or transfer or convey the Intellectual Property or any right in the Intellectual Property to anyone else without the prior written consent of Licensor. Licensee may make sufficient copies of the Intellectual Property and the related Scoring Sheets to measure the individual resilience of up to 350 subjects, for non-commercial purposes only.

3. Fee.
In consideration for the grant of the license and the use of the Intellectual Property, subject to the Restrictions above, Licensee agrees to pay Licensor the sum.

4. Term.
This license is valid for twelve months, starting at midnight on the Effective Date.

5. Termination.
This license will terminate at midnight on the date twelve months after the Effective Date.

6. Warranty of Title.
Licensor hereby represents and warrants to Licensee that Licensor is the owner of the Intellectual Property or otherwise has the right to grant to Licensee the rights set forth in this Agreement. In the event any breach or threatened breach of the foregoing representation and warranty, Licensee's sole remedy shall be to require Licensor to do one of the following: i) procure, at Licensor's expense, the right to use the Intellectual Property, ii) replace the Intellectual Property or any part thereof that is in breach and replace it with Intellectual Property of comparable functionality that does not cause any breach, or iii) refund to Licensee the full amount of the license fee upon the return of the Intellectual Property and all copies thereof to Licensor.

7. Warranty of Functionality.
Licensor provides to Licensee the Intellectual Property "as is" with no direct or implied warranty.

8. Payment.
Any payment shall be made in full prior to shipment. Any other amount owed by Licensee to Licensor pursuant to this Agreement shall be paid within thirty (30) days following invoice from Licensor. In the event any overdue amount owed by Licensee is not paid following ten (10) days written notice from Licensor, then in addition to any other amount due, Licensor may impose and Licensee shall pay a late payment charge at the rate of one percent (1%) per month on any overdue amount.

9. Taxes.
In addition to all other amounts due hereunder, Licensee shall also pay to Licensor, or reimburse Licensor as appropriate, all amounts due for tax on the Intellectual Property that are measured directly by payments made by Licensee to Licensor. In no event shall Licensee be obligated to pay any tax paid on the income of Licensor or paid for Licensor's privilege of doing business.

10. Warranty Disclaimer.
LICENSOR'S WARRANTIES SET FORTH IN THIS AGREEMENT ARE EXCLUSIVE AND ARE IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

11. Limitation of Liability.
Licensor shall not be responsible for, and shall not pay, any amount of incidental, consequential or other indirect damages, whether based on lost revenue or otherwise, regardless of whether Licensor was advised of the possibility of such losses in advance. In no event shall Licensor's liability hereunder exceed the amount of license fees paid by Licensee, regardless of whether Licensee's claim is based on contract, tort, strict liability, product liability, or otherwise.

12. Support.
Licensor agrees to provide limited, e-mail-only support for issues and questions raised by the Licensee that are not answered in the current version of the *Resilience Scale User's Guide*, available on www.resiliencescale.com, limited to the Term of this Agreement. Licensor will determine which issues and questions are or are not answered in the current *User's Guide*.

13. Notice.
Any notice required by this Agreement or given in connection with it, shall be in writing and shall be given to the appropriate party by personal delivery or by certified mail, postage prepaid, or recognized overnight delivery services.

14. Governing Law.
This Agreement shall be construed and enforced in accordance with the laws of the United States and the state of Montana. Licensee expressly consents to the exclusive forum, jurisdiction, and venue of the Courts of the State of Montana and the United States District Court for the District of Montana in any and all actions, disputes, or controversies relating to this Agreement.

15. No Assignment.
Neither this Agreement nor any interest in this Agreement may be assigned by Licensee without the prior express written approval of Licensor.

16. Final Agreement.
This Agreement terminates and supersedes all prior understandings or agreements on the subject matter hereof. This Agreement may be modified only by a further writing that is duly executed by both Parties.

17. Severability.
If any term of this Agreement is held by a court of competent jurisdiction to be invalid or unenforceable, then this Agreement, including all of the remaining terms, will remain in full force and effect as if such invalid or unenforceable term had never been included.

18. Headings.
Headings used in this Agreement are provided for convenience only and shall not be used to construe meaning or intent.

IN WITNESS WHEREOF, the Parties hereto have duly caused this Agreement to be executed in its name on its behalf, all as of the day and year first above written.

Appendix F: Permission for BriefCOPE

The items below are an abbreviated version of the COPE Inventory. We have used it in research with breast cancer patients, with a community sample recovering from Hurricane Andrew, and with other samples as well. The citation for the article reporting the development of the BriefCOPE, which includes information about factor structure and internal reliability from the hurricane sample is below. The BriefCOPE has also been translated into several other languages, which have been published separately by other researchers (see below).

We created the shorter item set partly because earlier patient samples became impatient at responding to the full instrument (both because of the length and redundancy of the full instrument and because of the overall time burden of the assessment protocol). In choosing which items to retain for this version (which has only 2 items per scale), we were guided by strong loadings from previous factor analyses, and by item clarity and meaningfulness to the patients in a previous study. In creating the reduced item set, we also "tuned" some of the scales somewhat (largely because some of the original scales had dual focuses) and omitted scales that had not appeared to be important among breast cancer patients. In this way the positive reinterpretation and growth scale became positive reframing (no growth); focus on and venting of emotions became venting (focusing was too tied to the experiencing of the emotion, and we decided it was venting we were really interested in); mental disengagement became self-distraction (with a slight expansion of mentioned means of self-distraction). We also added one scale that was not part of the original inventory--a 2-item measure of self-blame--because this response has been important in some earlier work.

You are welcome to use all scales of the BriefCOPE, or to choose selected scales for use. Feel free as well to adapt the language for whatever time scale you are interested in.

Citation: Carver, C. S. (1997). You want to measure coping but your protocol's too long: Consider the BriefCOPE. *International Journal of Behavioral Medicine,* 4, 92-100. [abstract]

Following is the BRIEFCOPE as we are now administering it, with the instructional orientation for a presurgery interview (the first time the COPE is given in this particular study). Please feel free to adapt the instructions as needed for your application.

Scales are computed as follows (with no reversals of coding):
Self-distraction, items 1 and 19
Active coping, items 2 and 7
Denial, items 3 and 8
Substance use, items 4 and 11
Use of emotional support, items 5 and 15
Use of instrumental support, items 10 and 23
Behavioral disengagement, items 6 and 16
Venting, items 9 and 21
Positive reframing, items 12 and 17
Planning, items 14 and 25
Humor, items 18 and 28
Acceptance, items 20 and 24
Religion, items 22 and 27

Self-blame, items 13 and 26

I have had many questions about combining scales into "problem focused" and "emotion focused" aggregates, or into an "overall" coping index. I have never done that in my own use of the scales. There is no such thing as an "overall" score on this measure, and I recommend no particular way of generating a dominant coping style for a give person. Please do NOT write to me asking for instructions to for "adaptive" and "maladaptive" composites, because I do not have any such instructions. I generally look at each scale separately to see what its relation is to other variables. An alternative is to create second-order factors from among the scales (see the 1989 article) and using the factors as predictors. If you decide to do that, I recommend that you use your own data to determine the composition of the higher-order factors. Different samples exhibit different patterns of relations.

If you can not figure out from these instructions how to examine your data, please consult with your own statistical person rather than sending me questions.