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# Testing a Psychological Readiness Training Intervention on PTSD, Depression, Anxiety, & Stress in First Responders

Renee Kosor
*Walden University*

# Walden University

College of Social and Behavioral Sciences

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Renee Kosor

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Dr. Kimberly Farris, Committee Chairperson, Human Services Faculty
Dr. Scott Hershberger, Committee Member, Human Services Faculty
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Chief Academic Officer
Eric Riedel, Ph.D.

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Abstract

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MBA, Liberty University, 2010

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## Abstract

Exposure to traumatic events is rare for the general public but common for first responders. However, there is little proactive emotional health care occurring inside the first responder community. No preventive treatment for depression, anxiety, stress, and PTSD exists. The purpose of this study was to determine the efficacy of a psychological readiness training intervention on 361 police officers and firefighters in a medium-size Midwestern city. A combined positive psychological capital and cognitive behavior therapy approach was used to frame the study. This study used a pretest, posttest quasi-experimental design. The participants were a convenience sample of 119 volunteers from a population of 361 first responders. The participants were first administered pretests using the DASS-21 and the Civilian PTSD Self-Report Scale which measured depression, anxiety, stress, and posttraumatic stress. They were then exposed to the psychological readiness training (PRT) intervention, after which the same posttests measuring depression, anxiety, stress, and posttraumatic stress were again administered. T-test results indicated a significant decrease in all 4 symptom categories post training intervention. Implications include providing first responders with the tools needed to process traumatic events to maintain mental health throughout their careers.

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# Dedication

This research study is dedicated to the men and women of first response organizations who live to serve others first.

# Acknowledgments

Thank you God for sustaining us throughout this doctoral journey. Without You, none of my work is possible. Chesney, you are my motivation and source of joy. Dr. Farris, you have been my anchor and example of grace under fire. Jonathan, you have braved this journey alongside me and I could not have finished without your encouragement. Each of you shares in my success.

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# Chapter 1: Introduction to the Study

## Introduction

The Global Burden of Disease Study, collaboratively conducted by Harvard University, Johns Hopkins University, the University of Washington, the University of Queensland, and the World Health Organization, considers clinical anxiety and depression a serious health issue that is found in every society in the world (Ferrari et al., 2013). With one in 13 people currently affected by anxiety and one in 21 destined to deal with depression, the treatment of such mental health issues costs the United States over $42 billion each year (Anxiety Depression Association of America, 2014). For decades, the symptoms of anxiety disorders and depression have been suffered in silence, but recent media reports of military homicides associated to post-traumatic stress disorder (PTSD) have brought national attention to the need for successful, accessible mental health treatment (Adler, Bliese, McGurk, Hoge, & Castro, 2009).

In 2013, Copeland revealed that Eddie Ray Routh, the man convicted for the murder of Chris Kyle, famed Navy SEAL and hero of the film *American Sniper,* had been diagnosed with PTSD prior to the shooting. A 2009 report on eight homicides within 12 months perpetrated by various soldiers within Fort Carson revealed that the rate of PTSD for these soldiers, who served in the most dangerous areas of Baghdad, was more than three times that of units returning from less dangerous battle zones ("Epidemiological Consultation," 2009). In 2012, the Vets to Cops program and the Staffing for Adequate Fire and Emergency Response granted $111 million in extra funding to police departments and firehouses across the country that give preference to

veterans ("Obama Administration," 2012). As a result, there has been an influx of former military personnel taking on first-responder positions (Adler et al., 2009).

The first-responder community, consisting of human service professionals such as active duty military, veterans, police, firefighters, emergency medical, and emergency room staff, exists in a perpetual state of risk (Breslau, Lucia, & Davis, 2004). The nature of the profession is service to others, particularly in high-crisis situations (Bledsoe, 2003). A phenomenon rarely addressed in available literature is something known as subthreshold PTSD (Levy-Gigi, Richter-Levin, & Kéri, 2014). Although full-blown PTSD is triggered by a traumatic event that leaves the patient feeling helpless and in fear, subthreshold PTSD is found in people who are subjected to trauma over and over again and who experience subthreshold symptomology of PTSD that, due in large part to training, they learn to live with (Marmar et al., 2006). Unfortunately, the belief in legislative circles is that first responders are trained to live with the consequences of their profession's requirements and do not qualify for such considerations as worker's compensation benefits or reimbursement for trauma-associated expenses (*Brandon Bentley v. Spartenburg County and South Carolina Association of Counties SIF,* 2012). Such decisions have strengthened the need for an intervention that alleviates all levels of PTSD so that it does not lead to a major mental illness (Breslau et al., 2004).

Skills training at regular intervals has long been a requirement for first responders (Bledsoe, 2003). In 2015, the International Association of Firefighters (IAFF) made PTSD a focus of their annual conference, and the organization's expectation is that firehouses across the United States will benefit from increased awareness. Bledsoe (2003)

reported that for 30 years, police organizations have addressed crisis response through research endeavors and partnerships with the International Critical Incident Stress Foundation (ICISF). Trainings in stress management, the acclimation from veteran to police officer, crisis intervention, and other critical incident training programs are available through the ICISF. However, no curriculum currently exists specifically for the first-responder audience with a focus on the intervention of the negative mental health impact that high levels of stress, anxiety, depression, and PTSD have on the first responder community over time (Bisson et al., 2007). Programs available to patients with these mental illnesses are reactive in nature, not proactive (Beardslee et al., 2011). Medication, cognitive behavior therapy (CBT), and eye movement desensitization and processing are used to treat the symptoms of anxiety disorders with a focus on the triggering, traumatic event (Bisson et al., 2007). Access to such treatment regiments, however, requires a diagnosis (American Psychological Association, 2013). The psychological readiness training (PRT) course is the first of its kind with a focus on proactive mental well-being and emotional health before a diagnosis is required.

## Cognitive Behavior Therapy

As CBT has been proven to succeed most frequently with the treatment of anxiety disorders and depression, the creation of a prevention program begins with understanding its foundation (Stirman et al., 2013). Cognitive behavior therapy has its roots in the 1960s when Beck identified three primary faulty thought processes in depressed patients (Shaw, 1977). Once the pattern was noticed, Beck began working with clients on reframing their negative, automatic thoughts into more factual, positive realities. According to the Beck

Institute for Cognitive Behavior Therapy (2015), CBT has proven effective in the treatment of 37 mental health disorders including anxiety, depression, substance abuse, and PTSD.

There are two primary components of CBT that must be included in the curriculum delivered in the PRT intervention (Cape, Whittington, Buszewicz, Wallace, & Underwood, 2010). Education about the psychological impacts of exposure to traumatic incidents is first (Diehle, 2015). An understanding of the way the mind responds to horrific images and actions that impact the lives of others is necessary (Adler et al., 2009). Recognition of the mind's impulsive reactions to trauma as well as education about what can be done to decrease the impact is a component of the training intervention (Guenthner, 2012).

The second piece of CBT that is valuable in the PRT intervention is the use of homework that is focused on internalizing the lessons learned, strategizing, and challenging faulty thought processes (Kazantzis & Dattilio, 2010). Immediate internal responses to receiving a call to respond to a traumatic situation can cause first responders anxiety or increased stress (Kehl, Knuth, Hulse, & Schmidt, 2014). Challenging such faulty responses, creating a new way of thinking about them (cognitive), and strategizing new ways of reacting and responding when facing traumatic situations (behavior) are all part of developing the leader's mind (Kleim & Westphal, 2011). Writing these things down in the homework journal known as *The HEROES Playbook* breathes life into the lessons, ensuring that the material learned is actively implemented so that it becomes a

catalyst for a renewed sense of control in uncontrollable situations (Kazantzis & Dattilio, 2010).

## Positive Psychological Capital

To create a prevention program using proven techniques, CBT can be used to inform the process (Hofmann, Asmundson, & Beck, 2013). However, the learning content requires focus on areas of the mind that enhance the characteristics that research has shown are most important in deflecting the impacts of trauma (Hetrick, Purcell, Garner, & Parslow, 2010). Positive psychology has recently been used to initiate progress in the study of human capital (Seligman & Csikszentmihalyi, 2000; Sheldon & King, 2001; Snyder & Lopez, 2002), recognized primarily as the level of education and experience employees bring to their positions, by honing in on what is now commonly referred to as positive psychological capital or PsyCap (Luthans & Youssef, 2004; Luthans, Youssef, & Avolio, 2007). Moving beyond human capital's designation of "who you are," PsyCap concerns itself with "who you are becoming" or ultimately who your "best self" is (Luthans, Youssef, et al., 2007, p. 20). The development of PsyCap is characterized by

> having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resilience) to attain success. (Luthans, Youssef, et al., 2007, p. 3)

For the purposes of the PRT intervention, the hope component of PsyCap was expanded into hope-in-action (Niles, Hyoyeon, & Amundson, 2014). Although the development of hope in PsyCap goes beyond the traditional sense of the word, hope-in-action requires a strategic planning component that raises the cognitive and behavior requirements in the trainee to a level that makes implementation of the concept in real life situations more pragmatic (Kinghorn, 2013). Within *The HEROES Playbook*, trainees identify goals as is required in PsyCap development but take it multiple steps further by classifying mental, emotional, physical, and spiritual goals first and then, for each, outlining potential roadblocks, identifying resources to overcoming challenges, and building contingency plans to ensure ultimate achievement in each category (Knaevelsrud & Maercker, 2007).

According to the latest *Diagnostic and Statistical Manual of Mental Disorders* (DSM-V), feeling empty, sad, or hopeless is a key indicator of major depression (American Psychiatric Association, 2013). The feeling of hopelessness is listed as a risk factor for suicide in multiple studies (Beck, Brown, Berchick, Stewart, & Steer, 1990; Vilhjalmsson, Kristjansdottir, & Sveinbjarnardottir, 1998). In a seminal work, Bandura (1977) introduced the concept of self-efficacy as one of the primary impact factors in the development of hope. Rather than follow fellow psychological behaviorists in the belief that humans are primarily a product of their environments, Bandura (2005) argued that people are agents of their environments, capable of responding and impacting others socially.

Similar to Bandura, Seligman (2006) emerged as a leader in the field of learned optimism due to opposition to the strict beliefs of behaviorists who viewed people as a product of their environment. Speaking specifically to the support of optimism in the development of hope, Seligman called optimistic explanatory style the "stuff of hope" (pp. 48-49). Rutter studied resilience in children and asserted that resilience can only be seen in the face of psychosocial risk experiences. The capacity for resilience, rather than originating internally as the other three constructs of PsyCap do, comes from outside the individual (Fleming & Ledogar, 2008). Resilience factors are found at the family, community, and cultural levels (Rutter, 2000).

In a collaborative approach to preventing stress, depression, anxiety, and PTSD, the PRT program, including a combination of video training sessions and homework assignments, is used to develop hope-in-action, mental efficacy, resilience, and optimism while educating first responders about their risk for mental illness and rounding out the intervention with a socialization feature that provides closure and increased self-awareness (Fariborz, Ahmadreza, Karimi, & Zahra, 2013; Knaevelsrud & Maercker, 2007). Figure 1 depicts the combined elements of PsyCap and CBT.

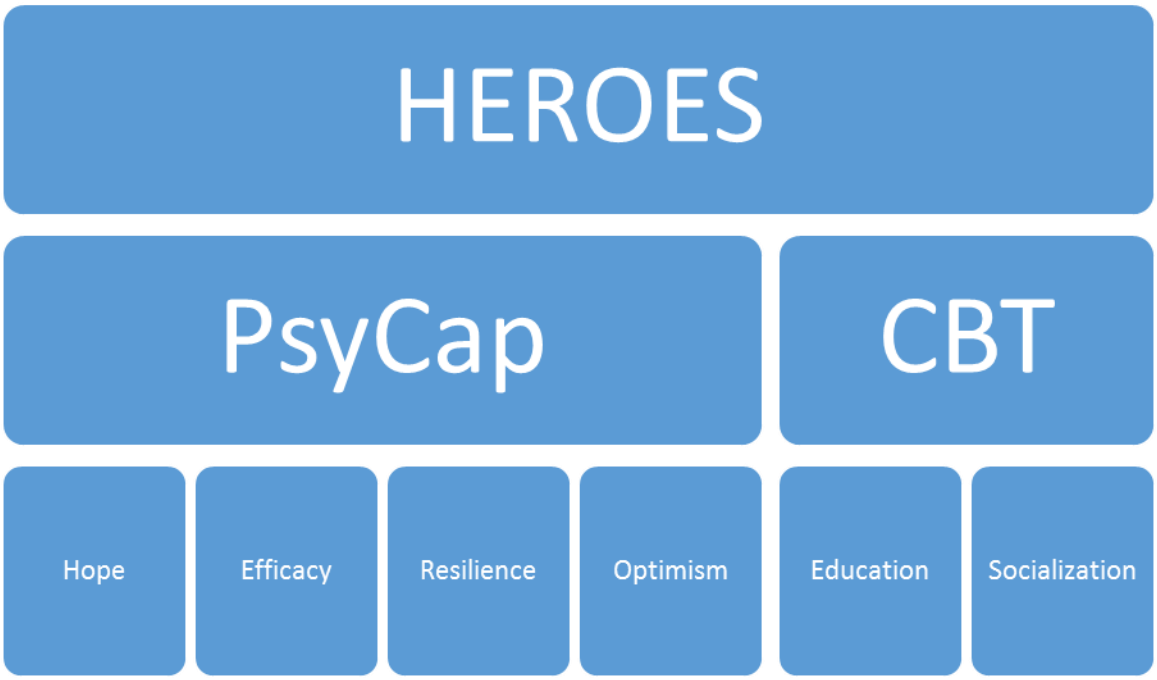


Figure 1. *PRT as a collaboration between PsyCap and CBT*

## Problem Statement

In the course of their career responsibilities, first responders including police, fire, emergency room staff, military service members, and emergency medical technicians are routinely and repeatedly exposed to direct and vicarious traumatic events (Kleim & Westphal, 2011) but are rarely, if ever, tested or treated for subthreshold or acute PTSD (Kehl et al., 2014). Recent research into the impact of traumatic exposure on military veterans is available in abundance but less so for other first-responding professionals (Kornfield, Klaus, McKay, Helstrom, & Oslin, 2012). Studies indicated that prevalence of PTSD in firefighters ranged from 7% to 37% (Corneil, Beaton, Murphy, Johnson, & Pike, 1999; Del Ben, Scotti, Chen, & Fortson, 2006; Haslam & Mallon, 2003), but research into the pervasiveness of PTSD in police officers is not as clear due in part to the

more chronic quality of subthreshold PTSD and the reactive nature of law enforcement psychological testing (Cukor, Wyka, Jayasinghe, & Difede, 2010). According to the DSM-V, subthreshold PTSD does not meet the symptom criteria of a diagnosable disorder, making official diagnosis and treatment very difficult (Carlier, Lamberts, & Gersons, 1997; Grubaugh et al., 2012; Maia et al., 2007; Pietrazak et al., 2012). In departments with 250 first responders, statistics indicate that anywhere from 17 to 92 personnel are living with some degree of PTSD, but few are aware of what the symptoms mean or how to seek treatment (Kornfield et al., 2012).

Even though effective treatment options exist, there are problems with access to care, particularly for those with undiagnosed post-traumatic stress disorder (Levy-Gigi et al., 2014). According to the 2008 Invisible Wounds of War study conducted by the RAND Corporation, 50% of military veterans with diagnosed PTSD do not seek treatment (Tanielian, 2008). Barriers to treatment for first responders suffering from PTSD and anxiety disorders include access to qualified practitioners, the stigma associated with an official diagnosis, the requirement to reveal the traumatic event, and the belief that PTSD and other anxiety disorders only happen to others (Veterans Administration, 2015). Of the treatment options, only two are considered effective but require intensive treatment and time as well as a trusting relationship between practitioner and patient (Hunsley, Elliott, & Therrien, 2014).

According to the Anxiety Depression Association of America (ADAA, 2014), 7.7 million Americans 18 years and older are currently living with PTSD, which is frequently accompanied by depression and other anxiety disorders. The Sidran Institute (2014)

estimated the annual cost of anxiety disorders to be more than $42.3 billion, more than half of which is attributed to the repetitive use of health care services focused on relieving anxiety-related symptoms. The ADAA (2014) reported that anxiety disorders are the most common mental illness in the United States with an affected population of 40 million U.S. adults.

In the last decade, the Development of PsyCap has proven effective at counteracting various anxiety- and stress-related symptoms in the workplace (Avey, Luthans, & Jensen, 2009; Luthans, Avey, Avolio, & Peterson, 2010; Luthans, Youssef, et al., 2007). The development of PsyCap in organizational settings has been shown to elevate emotional intelligence, decrease stress levels, improve organizational commitment, and mediate anxiety for employees in constantly changing work environments (Newman, Ucbasaran, Zhu, & Hirst, 2014). To date, the focus of PsyCap research has largely been organizational, with a great deal of emphasis placed on performance improvement (Luthans, Norman, Avolio, & Avey, 2007). At present, a connection between PsyCap development in first responders and PTSD symptomology has not been established. An additional consideration that warrants examination is whether the development of PsyCap mediates anxiety, depression, and stress levels and the resulting symptomology associated with each.

New research points to the ability of organizations to develop PsyCap in their employees, the results of which improve on-the-job performance (Luthans et al., 2010) and decrease employee stress and turnover (Avey et al., 2009). There exists empirical (Luthans, Avey, & Patera, 2008) and conceptual evidence (Luthans, Avey, Avolio,

Norman, & Combs 2006; Luthans et al., 2007) that PsyCap can be developed in short training interventions. To date, however, there remains a gap in organizational development research, particularly in the first-responder field, on the impact of PsyCap training interventions on the symptoms common in anxiety disorders and depression. If short, electronically accessible training interventions prove effective at treating subthreshold and acute PTSD as well as depression and anxiety as a proactive solution to mental health care, first responders could complete PRT without an official diagnosis.

## Purpose

The purpose of this pretest, posttest comparative quasi-experimental study was to determine the impact of the PRT intervention on symptoms of anxiety, depression, stress, and PTSD in first responders located in a medium-size Midwestern city. The training intervention included the four core components of PsyCap: hope-in-action, mental efficacy, resilience, and optimism as outlined by Luthans, Avey, and Patera (2008) with additional focus given to education and socialization, both mechanisms of CBT with the addition of *The HEROES Playbook* as a journaling resource (Stirman et al., 2013). The training intervention spanned 8 weeks with weekly video workshops made available to participants online and one to two written homework assignments per week over the course of the 8-week training period.

## Psychological Readiness: The Psychological Readiness Training Curriculum Overview

**Hope-in-action.** Hope, consisting of agency and willpower, has a great deal of research support and theoretical development and is viewed as thinking in an

empowering way (Snyder, 1994). Using goal orientation, the construct of hope expands on the development of agency and pathways (Snyder, Rand, & Sigmon, 2002). Agency is indicative of a person's motivation to begin a task and persist until the task is completed (or the goal is accomplished). The development of pathways is particularly beneficial to the notion of hopefulness as it expands the mind's ability to see alternative solutions when one choice or option is blocked (Snyder, 1994, 2000, 2002).

**Efficacy.** Self-efficacy, also known as self-confidence and mental acuity, has been proven to have extensive impact on performance (Sadri & Robertson, 1993; Stajkovic & Luthans, 1998). Rooted in social cognitive theory, self-efficacy is a person's belief in his or her capabilities to gather the necessary cognitive resources, motivation, and courses of action (pathways) to succeed at a task (Stajkovic & Luthans, 1998). Different from optimism in that the belief is specific to a task, efficacy is primarily rooted in a person's capabilities rather than a general belief about positive outcomes.

**Resilience.** Resilience refers to adapting to environmental and situational factors beyond a person's control (Masten & Reed, 2002). Adaptation is more than rebounding from a disappointment; trained resilience enables a stronger recovery from change or disappointment in a shorter time period, and with greater likelihood that adversity will have less of an impact over time (Werner & Smith, 1982). The core of resilience development is found in minimizing organizational risk factors such as having an abusive supervisor or losing a customer account, while developing assets such as mentor relationships or actions leading to a promotion (Masten, 2001; Masten & Reed, 2002).

**Optimism.** Optimism is concerned with a person's broad view of the world. The optimist expects good things to happen while the pessimist expects bad (Carver & Scheier, 2002). The differences between the two are not inconsequential because optimists approach problems and challenges differently than pessimists and handle adversity in different fashions (Luthans et al., 2010). The primary driver in the optimistic process is belief that an increase in effort will result in the desired outcome. With this approach, the optimist continues to try while the pessimist believes that no amount of hard work or effort will ultimately make a difference (Carver & Scheier, 2002).

**Education.** The National Association of Cognitive Behavior Therapists (2014) promotes the education of patients about what they are experiencing mentally and physically to alleviate the fear associated with the symptoms. Adhering to the adage that people fear what they do not understand, the PRT intervention will give participants a clear picture of the physical and psychological symptoms of anxiety disorders, including subthreshold and acute PTSD, depression, and dangerous stress levels. The IAFF (2014) reported that 29% of active duty firefighters abuse alcohol on a regular basis. Due to the prevalence of alcohol abuse as a coping mechanism for anxiety and stress, the training intervention will educate participants about substance abuse as a method of camouflaging symptoms of a mental health problem.

**Socialization.** Homework is a primary component of CBT, particularly for individual clients receiving the treatment online over the course of 16 or more weeks (Knaevelsrud & Maercker, 2007). One of the final pieces of CBT is social sharing, done frequently through the act of writing a letter speaking directly to the impact of a traumatic

situation (Maercker & Horn, 2013). The letter can be read aloud or sent to a specific recipient. *The HEROES Playbook* provides participants with a journaling section to write the letter and the training program and offers the option of reading the letter aloud to a group of their peers, increasing the cultural impact of resilience (Masten & Reed, 2002) and giving closure to traumatic events.

**Conclusion**

The PRT intervention began with actionable hope through the identification and categorization of goals requiring focus, effort, and energy to achieve. Next, the program opened up into the first stage of CBT, that of confronting images from past traumatic events that could potentially derail goal achievement. Additionally, future traumatic events were anticipated to prepare for overcoming them through learned optimism. Cognitive restructuring occurred during the development of self-efficacy. The act of crafting a strategic plan to overcome future roadblocks nurtured in participants both a new perspective of traumatic situations as well as a sense of control over situations that are highly unstable. Stage three in CBT rounded out the curriculum with the social sharing component. Participants were assigned the task of writing a symbolic letter, bidding previous traumas goodbye, and outlining specific steps to overcome similar events in the future.

Research indicated that having even one team member with high levels of PsyCap increases the PsyCap of other team members over time (Luthans et al., 2010). This discovery was instrumental in understanding the impact that development can have on first-responder cultures. PsyCap's proven ability to inoculate the brain to withstand the

negative impacts of uncertainty (Avey, et al., 2009) is attractive to first-responder organizations with high levels of crisis and critical incident response on a recurring basis. Similarly, PsyCap's efficacy at molding thinkers who see beyond obstacles while staying the course using increased levels of initiative make PsyCap development a component of treatment and prevention of depression, PTSD, and other anxiety disorders.

The collaboration between two disciplines, positive organizational psychology and human psychology, provides a potential solution for an immediate need in the human services field. The PRT intervention, using the core constructs of PsyCap development and CBT, prepares first responders who routinely face traumatic events and are at risk for mental illness. The training intervention is intended to inoculate the brain against fear of the unknown and the experiences brought on by traumatic situations while creating a flexible, confident, and resilient mind that responds positively in the face of crisis.

## Research Question

The primary research question focused on whether the PRT intervention had any significant impact on first responders reporting high levels of stress, anxiety, depression, and PTSD in a medium-size Midwestern town. Specifically, did the completion of *The HEROES Playbook*, created for the combined CBT and PsyCap training intervention, have any significant impact on first responder perceptions of depression, anxiety, stress, and PTSD?

## Research Hypotheses

$H_0$1: PRT intervention does not affect depression levels in first responders.

$H_A$1: PRT intervention does affect depression levels in first responders.

$H_0$2: PRT intervention does not affect anxiety levels in first responders.

$H_A$2: PRT intervention does affect anxiety levels in first responders.

$H_0$3: PRT intervention does not affect stress levels in first responders.

$H_A$3: PRT intervention does affect stress levels in first responders.

$H_0$4: PRT intervention does not affect PTSD levels in first responders.

$H_A$4: PRT intervention does affect PTSD levels in first responders.

Although it is possible to train employees in the development of PsyCap, no research has been found to date regarding the effectiveness of such training interventions on first-responder perceptions of mental health. The collaboration of CBT and PsyCap is used to develop actionable hope, efficacy, resilience, and optimism and to enhance a first-responder team's strength, cohesion, and overall health before, during, and after critical incidents. Potential results not measured in this study included increased tenure of valuable staff, high levels of community engagement, personal levels of satisfaction, and awareness of and attitudes toward distress symptoms in individuals within first-responding organizations.

## Theoretical Foundation of PsyCap

The development of positive PsyCap originated in 2005 by Luthans, Youssef, and Avolio. Focused on the study of organizational behavior, these researchers identified the ability of the human brain to be trained to withstand the negative impacts of uncertainty (Luthans et al., 2010). Firmly grounded in positive psychology, PsyCap is defined by Nelson and Cooper (2007) as a person's positive psychological developmental state. Positive constructs such as emotional intelligence, courage, wisdom, and well-being were

considered as potential components of PsyCap, but the core four (hope, efficacy, optimism, and resilience) best meet the criteria of PsyCap due to their state-like nature and their proven impact on performance (Avey et al., 2009).

Previous research on PsyCap's impact on employee performance focused on job performance ratings by supervisors (Peterson, Luthans, Avolio, Walumbwa, & Zhang, 2010), a combatant to workplace stress, and employee intentions to quit (Avey et al., 2009). For many people, feeling demoralized or experiencing helplessness, confusion, and hopelessness is the trigger for seeking help from medical doctors or counselors (Frank & Frank, 1991). It is the central goal of psychotherapists to re-moralize and foster hope in patients who have none. Approaching the phenomenon of PsyCap from a developmental perspective allows researchers to determine the natural impact of hope, efficacy, resilience, and optimism on self-perceptions of anxiety, stress, depression, and symptoms of PTSD.

The development of hope begins with distinguishing between wishful thinking and action-oriented hope (Niles et al., 2014). Snyder's (2002) hope theory specifically rules out wishful thinking and instead requires goal setting and strategic planning for goal achievement. Action-oriented hope is seen when a person goes well beyond setting goals by taking the necessary steps and tapping into personal motivation to achieve those goals (Niles, Yoon, Amundson, & Balin, 2010).

Setting specific, measurable, attainable, realistic, and timely goals is a widely used practice in organizations (Bowman, Mogensen, Marsland, & Lanning, 2011). Goals are generally focused on such things as career advancement, promotional opportunities,

and continuing education (Sujan, Weitz, & Kumar, 1994). Once the goals are set, it becomes the responsibility of the individual to figure out how to achieve those goals. There is no organized strategic planning. Essentially, once the goals are formulated, it is back to business as usual and the goal document is filed away until annual review time (Day & Tosey, 2011). Goals that were written with the best of intentions become nothing more than wishful thinking.

Hope in action takes goal setting to a new level, requiring individual engagement in the journey from identification to achievement (Niles et al., 2014). Once a goal has been identified as meaningful, the brain must adhere to the belief that positive outcomes will happen if the strategic plan is adhered to (Niles et al., 2010). This component of action-oriented hope requires self-efficacy: having the confidence it takes to put in the necessary amount of work required to effectively complete a challenging task. This confidence is developed over time with the celebration of small wins (Avey et al., 2009). With every small win, the mind believes more sincerely in the potential for success and begins to seek out more solutions, possibilities, and pathways to goal achievement (Snyder, 2002).

The three components of developing hope include agency thinking, pathways thinking, and goals (Snyder, 2002). Hope can be viewed as a state of mind in which someone pursues goals with a belief in the probability he or she will attain them (Kinghorn, 2013). Along the way, possible routes to attainment are identified and pursued (pathways thinking) and the pursuit is driven by self-efficacy (agency thinking). Snyder (2000, 2002) distinguished between two types of hope: dispositional hope and

state hope. Dispositional hope endures while state hope is emotionally based and focused on fleeting desires. People with high levels of hope engage in health-maintaining behaviors, cope exceptionally well with adversity and trauma, support close connections with people around them, are less likely to cope with difficulty using avoidance, and are less likely to experience long-term anxiety and depression (Rand & Cheavens, 2009).

A cornerstone of Bandura's (1994) social cognitive theory, emerging from his separatist belief, is a person's perceived self-efficacy: "people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives" (p. 71). According to Bandura (2005), there are four ways to foster self-efficacy: personally mastering a skill, witnessing someone viewed as an equal mastering a skill, verbal persuasion from a respected person, and reducing physiological stress. Increased levels of self-efficacy predict a willingness to pursue challenging goals, to persevere in the face of difficulty, to react to mistakes or failure with a resilient attitude, and to avoid burnout and anxiety (Kinghorn, 2013). Bandura did not specifically speak to self-efficacy as a building block of hope, but it is not difficult to connect self-efficacy with self-perceptions of hope.

Seligman's (2006) early work on learned helplessness demonstrated that people who believe they cannot avoid painful stimuli, no matter how hard they try, eventually give into the pain and accept that there is nothing they can do to avoid it. The result is a defeated, pessimistic attitude. The converse, however, is learned optimism. Seligman showed that optimistic people believe that negative events are temporary and specific to a situation rather than permanent and generalized to the world around them.

Previous research in the field of PsyCap has focused on the use of short training interventions in individual goal setting (Avey et al., 2009; Luthans et al., 2010; Luthans, Norman, et al., 2008). Such focus directs the learner to think in a primarily professional context. The results of those studies were largely focused on an individual's development within a larger organizational framework. Although PsyCap has been shown to positively impact employees in traditional workplace settings, professionals who are at risk for serious mental health issues will benefit greatly from the educational and socialization components of CBT as well as the written homework assigned over the course of the training.

## Theoretical Foundation of CBT

The cornerstone of CBT is the recognition that people with mental disorders tend to permit their biases to distort the way they view internal or external stimuli (Beck, 2006). Such distortion can be due to previous traumatic experiences. The result of this distortion is an attachment of exaggerated emotions to the stimuli, which can cause inappropriate or self-defeating behavior (Stirman et al., 2013). A primary strategy in CBT is to test erroneous beliefs and reframe them in a logical, fact-based way (Hofmann et al., 2013). Shifting PsyCap's focus from traditional organizational settings into one where the audience consistently and repeatedly intercedes in traumatic situations requires additional context. This context is provided in the educational process of CBT.

First responders are at risk for anxiety disorders, high levels of stress, and depression (Levy-Gigi et al., 2014). Educating them about the possibility of mental health issues, their physical and psychological symptoms and side-effects, and the purpose

behind each component of the PRT intervention works to increase their awareness and engagement in the learning process. Without the educational component of CBT, the context surrounding the training intervention would not permit a focus on the impact previous and future critical incidents could have on the hope-in-action or goal-setting process.

The socialization component of the PRT program permits valuable closure to previous traumatic incidents and puts the fear of future ones into a manageable context (Knaevelsrud & Maercker, 2007). The letter speaks to current fears as well as a resolution created by each person on how to handle those fears (Hood, 2009). For participants who have responded to traumatic events and still carry the scars associated with them, the letter provides a sense of release and returned power (Smyth & Helm, 2003). For those who have never experienced a critical incident, the exercise works to bring a dimension of reality to the job at hand as well as give them an opportunity to plan by tapping into the wisdom of their trainee peer group for what to expect in the future (Knaevelsrud & Maercker, 2007).

The final component of CBT in the PRT program is homework. Journaling has long been considered a valuable part of the healing process for those with mental health issues (Wright, 2009). Directing the journaling process will ensure participants' practice and consideration of hope-in-action, learned optimism, and mental efficacy during the execution of their duties throughout the training intervention (Kazantzis & Dattilio, 2010). Doing so surrounded by others instituting the same program will work toward a culture of supported resilience (Mažulytė et al., 2014). The anticipated result over the

course of 8 weeks is a team of first responders who are aware of the mental impacts of repeated exposure to traumatic events and who are equipped with a strategic plan of action for how to handle the roadblocks as they happen.

## Nature of the Study

To bridge the gap in PTSD, depression, and anxiety treatment research, I conducted a test to determine the impact of the PRT program on PTSD in first-response personnel. I also examined the impact of psychological readiness development on depression, stress, and anxiety in the same group of first responders. This quasi-experimental pre- and posttest quantitative study was conducted to determine the efficacy of a combined online and journaling/homework training intervention for police officers and firefighters. The study included 361 first response personnel in a medium-size Midwestern city. The independent variable was the PRT intervention. The dependent variables included self-reported levels of individual anxiety, stress, depression, and PTSD symptomology.

The pretest, posttest quasi-experimental design included a volunteer sample of recruited first-response volunteers from the first-response community. Based on a G* Power sample size calculation of a *t* test with a difference between two dependent means (matched pairs) analysis at 99% power and a .01 alpha, the target sample size was 100 participants. Pre- and posttests included the Depression Anxiety Stress Scale (DASS-21) and the Civilian Self-Reporting PTSD Scale. Participants completed the pre-test 1 week prior to the training intervention and 1 week after the training intervention. Those invitees who chose not to participate in the study were offered the opportunity to engage in the

training program regardless of their participation. To protect the confidentiality of the participants, consent packets were handed out and collected directly by me. Names were coded for additional protection, and I was the only person who handled the consent packets, further ensuring participant confidentiality.

Pretests and posttests were electronically delivered to participant personal email addresses provided in the consent forms. Paired-sample *t* tests were conducted on mean differences at two separate points in time: pre-intervention and post-intervention. Leaders within the police and fire department introduced the PRT program, offering it freely to every officer at role call meetings and every firefighter who attended the monthly training sessions. I was responsible for introducing the study and handing out the consent packets and emailing the pre- and posttests. I had no personal relationship with any of the first responders in the community.

## Definition of Terms

- *Anxiety disorders* are defined as experiencing excessive anxiety to the point that it impacts daily life (Psychology Today, 2015). Anxiety disorders include PTSD, generalized anxiety disorder, obsessive-compulsive disorder, panic disorder, and social phobia.
- *Cognitive behavior therapy*: A short-term, structured, present-oriented type of therapy directed toward modifying dysfunctional behavior and thinking (Beck, 2011).
- *Efficacy*: Confidence in one's motivation, cognitive resources, and abilities to successfully complete a task (Stajkovic & Luthans, 1998).

- *Hope*: The use of agency (willpower) and pathways to empower a person's way of thinking (Snyder, 2000; Snyder et al., 2002).
- *Major depression* occurs when severe symptoms interfere with daily activities such as eating, sleeping, working, studying, and enjoying life (Psychology Today, 2015).
- *Optimism*: Constant, internal, and global causal attributions of positive events and external, unstable, and specific credit of negative occurrences (Seligman, 1998).
- *Post Traumatic Stress Disorder*: an anxiety disorder that results from experiencing a traumatic event that leaves the victim feeling helpless and in fear of threatened or actual physical harm (Psychology Today, 2015).
- *Psychoeducation*: Understanding why the symptoms occur and properly attributing them to the source of the problem (Butler, Chapman, Forman, & Beck, 2006).
- *Psychological capital*: The confidence, positivity, perseverance, and ability to redirect or bounce back in times of disappointment or uncertainty (Luthans, Avey, et al., 2007) and is evaluated through the four core constructs of hope, efficacy, resilience, and optimism.
- *Resilience*: Positively adapting to significant risk or adversity, enabling the ability to bounce back from disappointment (Masten & Reed, 2002).
- *Socialization*: Sharing, either verbally or in written format, previous traumatic experiences and their associated psychological and physical impact. Included

in the sharing process is a plan of action for how to handle current symptomology as well as future incidents (Kazantzis & Dattilio, 2010; Knaevelsrud & Maercker, 2007).

- *Stress:* The American Institute of Stress (2015) considers stress America's number one health problem. Stress impacts every person differently but is frequently seen in psychologically threatening situations outside of a person's control.

The National Institutes of Health (2015) reports that the American Psychological Association has yet to define **subthreshold PTSD**. However, it is common practice to consider a person with at least one symptom in each of the three DSM PTSD categories as having partial or **subthreshold PTSD** (Kornfield, Klaus, McKay, Helstrom, & Oslin, 2012).

## Scope and Limitations

Threats to internal validity included history, maturation, statistical regression, selection, experimental mortality, testing, instrumentation, and design contamination (Campbell & Stanley, 1963).

1. History: Current events occurring throughout the 8-week study could impact the dependent variable because it is impossible to predict the future. To account for current events and their impact, one of the questions posed to each participant addressed whether any life-altering events had occurred over the course of the study.

2. Maturation: No changes in the dependent variable impacted the development process.
3. Statistical regression: Subject performance levels were not a study consideration.
4. Selection: Subjects participated on a voluntary basis, eliminating the threat of selection.
5. Experimental mortality: It was possible that some subjects may have completed the pretest but not the posttest. In the event of a high experimental mortality rate, I planned to conduct post-research feedback to discover why participants chose to drop out. There was no evidence of experimental mortality, so a post-research feedback loop was unnecessary.
6. Testing: It was possible that, once subjects were aware of the questions being asked in both tests, that the pretest could impact the results of the posttest.
7. Instrumentation: The measurement tools used at the launch of the study and at the study's end did not change.
8. Design contamination: The study did have an overarching impact on the police and fire profession, potentially creating in subjects a desire to ensure that the study succeed. However, no there is no evidence that this was a factor.

The threat to external validity is the inability to generalize beyond the study's conditions. The testing of participants in one industry from one fire district and one police force may limit the application of the results to larger groups due to the geographic location of the participants. However, the police and firefighter organizations reflected

the local populace, so the participants represented a good cross-section of the population. Receiving the training in a virtual format may have had a negative impact on the connection between the facilitator and the trainee. First responders receiving the training electronically may not have responded to the intervention as readily as when training is delivered in person. However, the design of the homework assignments was intended to maintain participant engagement in the process. Research subjects were not being removed from their natural environments, ensuring the applicability of the results to similar settings elsewhere.

Police and firefighters are naturally suspicious groups (Colquitt, Lepine, Zapata, & Wild, 2011). A limitation to consider is trust in the facilitator and participant buy-in. If the participants treated the program as suspicious or did not connect with the trainer, the results could have been skewed. Contrary to traditional training research, this study required a respected trainer with a connection to the audience for successful delivery. The absence of proper credentialing for the trainer could easily have undercut participants' belief in the program, greatly impacting study results. Every effort to introduce the study while creating an initial bond of respect between the facilitator and participant group was taken. The trainer in this situation was former military certified in CBT with 10 years of experience as a master organizational development trainer.

## Significance of the Study

In 2006, research into the prevalence of PTSD following a critical incident for 262 Dutch police officers showed that 7% of the officers were diagnosed with PTSD within 12 months and 34% were treated for clinically significant subthreshold PTSD

(Marmar et al., 2006). Police and firefighters are widely recognized as service professionals with one of the most dangerous callings. Their exposure to traumatic situations, known as critical incidents, is part of their job. Responding to motor vehicle crashes, armed confrontations, and violent death is a matter of course for them. However, their willingness to step into the line of fire to serve and protect others does not decrease their susceptibility to psychological trauma; instead, it increases it (Marmar et al., 2006).

Since 1997, CBT and pharmacology have been considered the most effective treatment methodologies for acute and subthreshold anxiety disorders including PTSD (Gould, Otto, Pollack, & Yap, 1997). The CBT process includes exposure, cognitive challenging, physical control, and psychoeducation (Hetrick et al., 2010). Treatment can last anywhere from 5 weeks to 6 months, with extended treatment required for subthreshold cases. According to the Association of Behavior and Cognitive Therapies (ABCT) where practitioners receive CBT licensure, only 58 CBT practitioners in the United States are qualified as PTSD specialists. With more than 130,000 diagnosed patients for each PTSD specialist, access to care is a critical issue (ABCT, 2016). The uptick in anxiety disorders calls for immediate research into alternative treatment options and unconventional methods for delivery. For first responders, their consistent exposure to critical incidents places them in a constant at-risk category for anxiety, depression, stress, and PTSD.

## Social Impact

Professionals in a first-responder field are the first line of defense in crisis situations. Their priority is to protect, serve, and save others from harm. The nature of

their profession requires a ready mindset and a willingness to put themselves in danger's path, both physically and emotionally/psychologically, for the safety of others. The psychological impact of such hyper vigilance and dedication to self-sacrifice can be seen in the first-responder alcoholism, drug abuse, depression, anxiety, and stress statistics (Bordini, 2013). The creation of a proactive intervention program that can be disseminated organization-wide with an online delivery option that best meet the demands of the profession and homework designed to engage participants has the potential to change the way first responders view and handle mental health problems resulting from their work.

Professionals who have been in the first-response business for decades experience mental burnout. Anxiety disorders lead to early retirement. Depression is frequently masked with alcohol or drugs. Providing first responders with an organization-wide approach to preventative mental health care could prolong their ability to provide experienced human capital as a guide for the younger generations. Wisdom, particularly in fire, police, medical, and military professions, is an invaluable resource. Maintaining a staff with a deep bench of experience enhances each team's ability to provide quality, effective crisis response.

The financial repercussions of turnover are tremendous. According to Allen, Bryant, and Vardaman (2010), turnover falls into three categories: voluntary/involuntary, functional/dysfunctional, and avoidable/unavoidable. Involuntary turnover can have a positive impact on organizational performance (Griffeth & Hom, 2001). Dalton, Todor, and Krakhart (1982) pointed out that voluntary turnover for dysfunctional reasons harms

the organization. In this case, employees with desirable skill sets or high performers move on to other jobs or retire ahead of schedule.

Functional turnover can have positive organizational results, even though it causes temporary upheaval (Allen et al., 2010). Employees in this category represent those who are poor performers or who are easy to replace. The avoidable voluntary turnover is the most harmful to an organization's performance (Abelson, 1987). It is this type of turnover that most retention efforts are focused on. The unavoidable voluntary turnover includes situations the organization and individuals cannot control, such as traumatic events. The PRT intervention is particularly suited to prevent avoidable voluntary turnover, reducing personnel replacement costs and loss of team productivity (Raiz & Haider, 2010).

## Summary

Professionals who are called to serve are sacrificing their physical and mental safety for the safety of others. It is necessary to protect those who live to protect others. Primary afflictions for professionals in the first-responder industry include anxiety disorders such as PTSD and subthreshold PTSD, depression, and increased levels of job-related stress. Current treatment plans for such disorders include pharmacology and CBT on an individual basis. The first-responder community lives together, works together, and trains together. The creation of an intervention to stem the psychological impact of repeated exposure to traumatic situations should follow the team-oriented approach.

The PRT program promotes a goal-focused strategy with action plans requiring the support and engagement of respected peers to expose, confront, and reframe faulty

perceptions and their resulting thoughts and behaviors. Over time, the PRT program promotes a renewed mindset for anticipating and overcoming challenges with fewer negative reactions. Ultimately, participants inoculate their brains against the negative impact of uncertainty and fear while increasing their perceptions of power in the traumatic situations that tend to eliminate a sense of control.

The implications of combining the CBT treatment for anxiety and depressive symptoms with the practical, positive psychology approach of PsyCap are far-reaching. Police, fire, medical, and military organizations could proactively train staff in psychological readiness in advance of potentially traumatic events such as deployments, natural disasters, and terrorist attacks. For those already suffering from mental illness or facing the likelihood due to recent exposure to trauma, proactive psychological readiness training as a treatment measure could greatly reduce repetitive therapy costs, medication use, and early retirement.

As an organization-wide initiative, psychological readiness training provides first responders with an open forum to address individual impressions of traumatic events in a safe environment. The homework assignments give each person the opportunity to reflect on responses and fears privately using *The HEROES Playbook*, a journal that provides predetermined strategic responses to critical situations. Having a directed path to follow to anticipate and strategically plan for traumatic events combined with a plan of action for emotionally responding to psychological distress resulting from trauma increases a sense of power and control and decreases trauma's negative impact. The potential value

of such a treatment and prevention program for the first-responder audience is incalculable, and the need for it is imminent.

In Chapter 2, I review the literature pertaining to the development of psychological capital and cognitive behavior therapy. The review includes an in-depth look at previous research conducted on the value of hope, self-efficacy, resilience, and optimism pertaining to the psychological impact of stress, depression, anxiety, and the symptoms of PTSD.

# Chapter 2: Literature Review

The purpose of this study was to test a psychological readiness training intervention, which combined cognitive behavior therapy (CBT) and psychological capital (PsyCap), on first-responder stress, depression, anxiety, and PTSD. The following literature review consists of four areas. First, I describe the overview and approach taken to conduct an exhaustive review of the available literature. Second, I address the psychological impact of traumatic events, specifically depression, anxiety, stress, and PTSD. Third, I present an overview of the history and theoretical foundation of positive organizational behavior and positive psychological capital. Fourth, I explain how the refinement of those theories resulted in the four core constructs known today as positive psychological capital, or PsyCap. I appraise the research on positive organizational behavior with a specific focus on hopefulness, learned optimism, resilience in the face of the unknown, and confidence, and I explore the ways such behavior is initiated and evidenced. Additionally, I present the history and research support for the treatment effectiveness of cognitive behavior therapy. Although studies have established treatment effectiveness for each theory separately, the focus of the program is proactive, requiring the use of specific pieces of CBT that can be combined with the core constructs of PsyCap and used to intervene before an official diagnosis is necessary. I conclude the literature review with a discussion of the at-risk nature of the first responder treatment group and the need for a crisis intervention solution.

## Strategy Used in Literature Search

The strategy used in this literature review was based on the Boolean system, (Whitesitt, 1961) which includes key words and phrases to produce results specific to a study. The articles in the literature review were found through a search of six online databases including EBSCOhost, PsychINFO, SAGE Premier, Academic Search Complete, Thoreau, and ProQuest using the following terms: *psychological capital*, *development of psychological capital*, *positive organizational behavior*, *organizational citizenship behaviors*, *employee engagement*, *PsyCap*, *Cognitive Behavior Therapy*, *hope-in-action*, *journaling*, *post-traumatic stress disorder*, *anxiety disorder and first responders*, *depression*, *hopefulness*, *resilience*, *learned optimism*, *self-efficacy*, and *PTSD.* Advanced searches were conducted using *CBT and PsyCap* and *Cognitive Behavior Therapy and PsyCap.*

Research spanning more than 60 years offered tens of thousands of search results on depression, stress, and anxiety. However, a gap in the results specific to intervening in anxiety disorders, stress, and depression was evident. Search results contained 4,288 articles containing cognitive behavior therapy, 238 articles specific to psychological capital, four articles focused on subthreshold PTSD, over 30,000 articles on PTSD, 12 articles on anxiety disorders and first responders, six articles on depression and first responders, and 30 articles on stress and first responders.

Search parameters at the onset of the literature review included key words and a request for full-text and peer-reviewed articles only. I filtered the articles by reviewing their abstracts. When a full text article was not available online, the Walden University

Discovery Service provided the necessary material. Further filtering included articles available in English, seminal works from oldest to newest, and articles published within the previous 5 years.

## Psychological Impact of Traumatic Events

To make progress in the development of effective prevention programs, it is necessary to understand the risk factors associated with depression, anxiety disorders, high levels of stress, and PTSD (Schmidt & Zolensky, 2007). The following sections present the historical characterization of each psychological issue and results from previous research.

### Depression

According to Hunsley et al. (2014), depression is characterized by a loss of interest in formerly enjoyed activities, decreased physical activity, a sense of hopelessness, dysphoria, and self-blame, and is considered the most prevalent mental disorder worldwide. Depression is the leading disease-related and fourth leading condition-related cause of disability worldwide, impacting 5% to 12% of men and 10% to 25% of women (Marcus, Yasamy, van Ommeren, Chisholm, & Saxena, 2012). Evidence indicates that a variety of psychological treatment modalities such as individual therapy, brief therapy, and group therapy have been used to effectively treat depression in people of all ages (Hunsley et al., 2014).

In 1967, Beck formulated a theory of causality for depression from a cognitive perspective (Rush & Beck, 1978). Beck (1967) identified three specific cognitive factors to explain depression: cognitive triad, schemas, and cognitive errors. The cognitive triad

begins with a negative self-image, includes the interpretation of everyday situations from a negative perspective, and culminates with the expectation that the future holds only negative experiences. The schemas Beck identified in the depressed patient were mental scenarios that included perceptions rather than facts to negatively influence the person's ability to make impartial decisions (Beck, 1970). The cognitive errors Beck (1967) found in depressed patients included systematic errors in logic stemming from arbitrary inference, overgeneralization, magnification and minimization, personalization, and selective abstraction.

From Beck's identification of the cognitive patterns found in depressed patients came cognitive therapy, a short-term psychotherapy that runs approximately 20 sessions long with each session's discussion directed by the therapist (Rush & Beck, 1978). The first component of cognitive therapy begins with the therapist soliciting the patient's automatic thoughts surrounding a traumatic event (Beck, 2011). Then, using written homework assignments, the therapist challenges the patient to identify themes in the automatic thoughts and recognize whether the thoughts are based on fact or emotion (Beck, Emery, & Greenberg, 1985). Finally, errors in logic are identified as well as attitudes that drive moment-to-moment thoughts and decisions (Beck, 2006). The therapist then works with the patient to reframe thought processes along a more logical, factual path (Beck, 2006; Beck, 2011; Beck et al., 1985).

**Anxiety**

The most common anxiety disorders are generalized anxiety disorder and panic disorder (Kessler, Chiu, Demler, & Walters, 2005; Somers, Goldner, Waraich, & Hsu

2006). Anxiety disorders persist in daily life and can lead to psychological and physical incapacitation (Kessler et al., 2005). In 2010, anxiety disorders ranked as the sixth leading cause of disability in both low- and high-income countries (Baxter, Vos, Scott, Ferrari, & Whiteford, 2014). Frequently accompanied by depression and other anxiety disorders, panic disorder and generalized anxiety disorders are also seen in conjunction with cardiovascular, oncological, and neurological diseases (Gili et al., 2010; Smoller et al., 2007). According to Mergl et al., (2007), approximately 50% of anxiety disorder patients also suffer from additional comorbid psychiatric disorders such as depression or other anxiety disorders.

The DSM-V was recently adjusted for a shift in anxiety disorder characterizations, creating individual chapters for anxiety disorders, obsessive compulsive disorders, and trauma- and stressor-related disorders (APA, 2013). Regardless of categorization, all individuals experiencing anxiety disorders share the tendency to fear or worry in situations when other people feel no threat (Moreno-Peral et al., 2014). At the subthreshold level, the intensity of fear may be lower in patients diagnosed with an anxiety disorder, but the subthreshold or persistent nature of the anxiety creates a steady stream of symptoms (Kornfield et al., 2012).

**Stress**

Since the industrial revolution, social scientists have been fascinated with mortality rates and the shift from death due to infectious disease and acute illnesses to death by subthreshold illness (Dodge & Martin, 1970). One subthreshold illness is psychological stress (Arthur, 2007). Research suggests that psychological stress may be

an underlying factor in the development of depression (Ardayfio & Kim, 2006; Bale, 2006), suicide (Vilhjalmsson et al., 1998) and anxiety (Ardayfio & Kim, 2006; Kubzansky & Arthur, 2004). These and other psychiatric issues have been treated most effectively with cognitive and behavioral therapies (Shanfield & Killingsworth, 1977).

**Subthreshold and PTSD**

Descriptions and definitions of PTSD vary by date and discipline. Traditionally, PTSD has been believed to be caused by experiencing events that threaten death or serious injury and involve feeling helpless, intense fear, and horror following the event (Hunsley et al., 2014). In 2013, the American Psychiatric Association made significant changes to the anxiety disorders section of the DSM-V, specifically in the classification of PTSD. Today, a diagnosis of PTSD is based on a person experiencing, witnessing, or being repeatedly exposed to traumatic or adverse events (APA, 2013). According to the diagnostic criteria as set forth on Page 271 of the DSM-V, PTSD is initiated by:

A. Exposure to threatened death, serious injury, or sexual violence through one (or more) of the following:
    1. Direct experience
    2. Witnessing the event happen to others
    3. Learning that a close family member or friend was involved in a traumatic incident
    4. Experiencing repeated or extreme exposure to traumatic events

Diagnosis of PTSD requires specific symptomology as laid out in sections B, C, D, E, F, G, and H.

B. One or more of the following symptoms associated with the trauma:
    1. Trauma related recurring distressing memories
    2. Recurring distressing dreams related to the trauma
    3. Flashbacks
    4. Distress at being exposed to cues related to the traumatic event
    5. Physiological reactions to internal or external triggers of the event
C. Avoidance of stimuli through
    1. Avoidance of memories associated to the event and/or
    2. Avoidance of people, places, activities, etc. that arouse agonizing memories
D. Negatively altering mood and cognition as evidenced by two or more:
    1. Memory loss specific to the traumatic event
    2. Persistent pessimism
    3. Distorted thought processes that place blame for the event internally
    4. A continued state of fear, anger, guilt, horror, or shame
    5. Lack of interest in significant activities
    6. Detachment or estrangement from people
    7. Inability to feel positive emotions
E. Two or more arousal or reactions following the event
    1. Irritability and angry outbursts
    2. Self-destruction or recklessness
    3. Hypervigilance

4. Heightened startle response
5. Lack of concentration
6. Difficulty sleeping

F. Experiencing symptoms from B, C, D, and E for more than one month

G. There exists a clinically significant impairment in functioning

H. The disturbance cannot be explained by the physiological effects of substance abuse. (APA, 2013, p. 271)

For veterans, the prevalence of subthreshold PTSD has been documented since the Vietnam War but does not rise to the requirements set forth in the DSM-V for a full-blown PTSD diagnosis (Breslau et al., 2004). For police officers, firefighters, and emergency services personnel, the study of subthreshold PTSD began after the terrorist attacks of September 11, 2001, but initially focused on first responders in New York City (Howard, 2008). Since that time, researchers have branched out and found that PTSD is found in a chronic form, with symptoms persisting over a number of months and years in emergency services personnel who are tasked with the daily and repeated requirement to respond to traumatic events (Cukor et al., 2010).

Although it has been reported that the lifetime trauma incidence in the general population is 40% to 90%, the prevalence of PTSD in the same population ranges from 7% to 12% (Mehta & Binder, 2012). Pharmacological and psychological treatments for PTSD have been attempted throughout the years, each with limited success dependent on the nature of the PTSD (acute or subthreshold); as of 2013, not enough research comparing psychological and pharmacological treatments had been conducted to draw a

conclusion about comparative efficacy (Jonas et al., 2013). Of the types of psychological treatments tested to date, the most widely used therapy across impacted populations has been CBT (Hunsley et al., 2014).

**Theoretical Foundations of the Psychological Readiness Training Intervention**

There are numerous theories that address stress, anxiety, and depression individually. The recent attention paid to PTSD has also brought a number of potential treatment approaches to the forefront. However, the focus of this study was to test an intervention program that can be used by an individual who is unlikely to seek a formal diagnosis and that can alleviate the symptoms of all four maladies at once. Combing through decades of research with those two points in mind brought to light two specific theories that, when valuable components were broken down and combined, provided the framework for the creation of a robust training intervention. These theories are positive psychological capital and cognitive behavior therapy. Figure 2 presents the core components used in the development of the PRT intervention.

| **Positive Psychological Capital** | **Cognitive Behavior Therapy** |
|---|---|
| Hope | Hope |
| Mental-Efficacy/Role Confidence | Homework |
| Resilience | Education |
| Optimism | Socialization |

Figure 2. *Core components of foundational theories*.

**Positive Psychological Capital**

In *Positive Psychology: An Introduction,* (2000) Seligman and Csikszentmihalyi challenged organizational psychologists to change perspective when approaching organizational behavior. Rather than focusing on what was dysfunctional and wrong with people, Seligman and Csikszentmihalyi encouraged an approach based on finding what was good and right about them. The shift in focus uncovered the notion of engagement or a person's involvement in organizational goal attainment, resulting in individual goal alignment with that of the greater good (Luthans, Luthans, & Luthans, 2004).

As an individual becomes more engaged with organizational outcomes and begins to gauge personal success as it pertains to a company's performance, levels of psychological capital increase. Initially, psychological capital encompassed such characteristics as hope, wisdom, future-mindedness, creativity, spirituality, courage, responsibility, and perseverance. In 2004, researchers Fred Luthans, Kyle Luthans, and Bret Luthans dove into Seligman and Csikszentmihalyi's challenge with gusto and used Stajkovic's (2003) study of organizational motivation to determine what four core constructs of positive psychological capital and organizational behavior are most essential to uncovering a person's best self.

The determination of what constitutes a resource in PsyCap began with Fred Luthans' suggestion that it be statelike, have performance impact, based in theory, and have the ability to be measured (2002). The notion of the statelike quality required that any characteristic within PsyCap must be open to change and development. As indicated

in the s*tatelike vs. traitlike Characteristics* chart below, vast research into character development indicates that states and traits, while generally considered dichotomous, independent constructs, actually fall on a continuum whereas the state end is developable and the trait end is not easily developed (Chen, Gully, Whiteman, & Kilcullen, 2000; Luthans, Avey et al., 2006; Luthans & Youssef, 2007.):

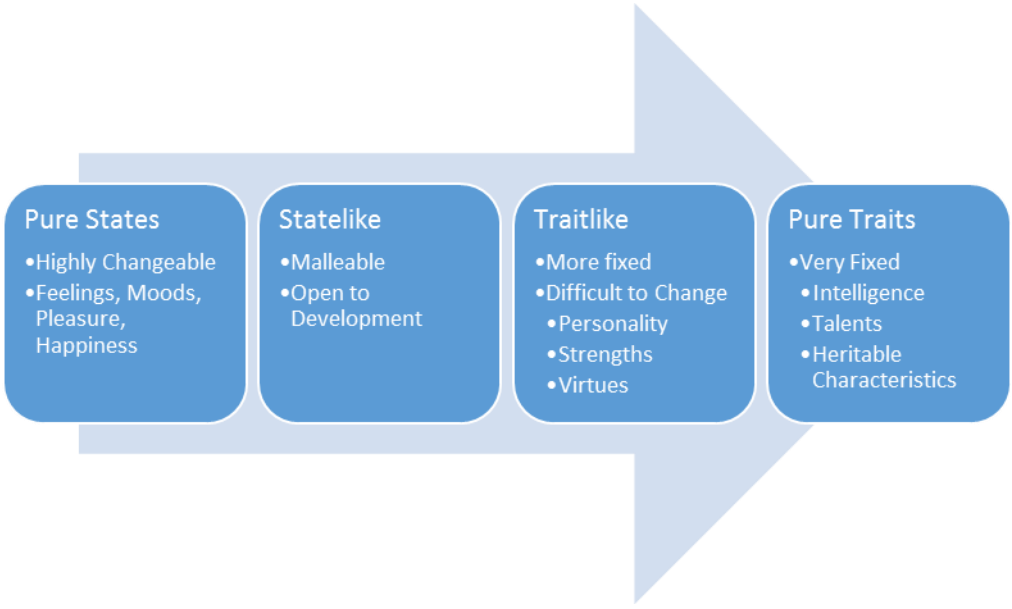


Figure 3. *Statelike vs. traitlike characteristics.*

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The resources found within PsyCap are those that are found between the pure states and pure traits and are open to development. PsyCap resources must be more stable than an emotion or a person's mood but not fixed the way inherited characteristics and core self-evaluations are (Luthans, Avey, Avolio, & Peterson, 2010). The definitive difference between PsyCap constructs and other positive constructs found in individual and organizational development literature is the focus on research, theory, and valid measurement (Luthans, 2002a, 2002b; Luthans, Youssef, & Avolio, 2007; Nelson &

Cooper, 2007). The four core constructs of PsyCap meeting the requirements of positive psychology and positive organizational behavior researchers include hope, efficacy (confidence), resilience, and optimism.

**Hope.** While hope is used frequently in everyday language, in this context it carries considerable theoretical support with a precise meaning. Snyder, Irving, and Anderson define hope as a "positive motivational state that is based on an interactively derived sense of successful agency (goal-directed energy) and pathways (planning to meet goals)" (1991, p. 287). The theory of hope begins with the assumption that people tend to be goal oriented through an empowered mentality (Snyder, 1994). Such goal-focus leads people to move toward accomplishment utilizing two hope components: agency and pathways (Snyder, 2000; Snyder, Rand, & Sigmon, 2002).

Agency includes a person's capacity or motivation to begin a task and to see that task through to completion (Snyder, 2000). This determination to achieve becomes essential when impediments, changes, or challenges arise. The use of positive self-talk, "I can do this" or "I will not quit" feeds into a person's continued forward movement (Snyder, Lapointe, Crowson, & Early, 1998). Willpower will drive a person ever forward while what has been deemed "waypower" is the bridge between thought and action (Avey, Luthans, & Jensen, 2009).

Waypower, or pathways thinking, is a person's creation of contingency plans in the event something goes wrong. The proactive generation of multiple pathways is found in high-hope individuals (Snyder, 2002). The act of developing alternative routes from a starting point to the end goal creates a more flexible mind which helps decrease response

times in critical situations. For instance, the high-hope leader faced with an unexpected challenge can quickly pull from potential solutions crafted in advance, losing fewer minutes of productivity and team focus.

Independent studies have demonstrated hope's positive impact on academic, health, and athletic outcomes as well as work performance levels (Luthans, Avolio et al., 2007; Luthans, Avolio, Walumbwa, & Li, 2005; Peterson & Byron, 2007; Peterson & Luthans, 2003; Youssef & Luthans, 2007). A connection between hope and organizational commitment, job satisfaction, work unit performance, and retention rates has been found (Luthans & Jensen, 2002; Peterson & Luthans, 2003; Youssef & Luthans, 2007). In addition, stress and anxiety research has shown that hope has a significant negative correlation with anxiety and protects against feelings of vulnerability, unpredictability, and lack of control (Snyder, 1991; Snyder, 2000). Utilizing a goals-based framework, hope has proven developable both in clinical psychology studies and short workplace training interventions (Snyder, 2000; Luthans, Avey et al., 2006; Luthans, Avey et al., 2008; Luthans, Youssef et al., 2007; Luthans, et al., 2010).

**Efficacy.** From the days of Albert Bandura's Social Cognitive Theory (1997, 2005, 2008), the construct with perhaps the most extensive research support is efficacy. Numerous studies have shown the positive impact self-efficacy has on performance (Sadri & Robertson, 1993; Stajkovic & Luthans, 1998a). Stajkovic and Luthans define efficacy as it is applied to the workplace as "the individual's conviction or confidence about his or her abilities to mobilize the motivation, cognitive resources or courses of

action needed to successfully execute a specific task within a given context" (1998b, p. 66).

Efficacy stands out from other constructs, particularly optimism, because of the focus on a specific task and context rather than a general belief in positive outcomes. A low level of efficacy indicates a belief that efforts to overcome difficulty are futile, hence the resulting increase in stress and anxiety (Bandura, 2008). Adversely, those with a well-developed efficacy approach believe that challenges are surmountable as long as the ability exists and the effort is put forth.

Strong links exist between performance outcomes at work and efficacy (Bandura & Locke, 2003; Stajkovic & Luthans, 1998a). The development of efficacy has succeeded through the use of modeling, mastery experiences, physiological/psychological arousal, and social persuasion (Bandura, 1997). Recent studies of nurses specializing in cancer care (Fillion et al., 2007) and workers in Beijing and Hong Kong (Siu, Spector, & Cooper, 2005) link efficacy with lower levels of workplace stress. Retention studies show efficacy as a mediating factor in socialization, turnover intentions, and organizational commitment (Harris & Cameron, 2005; Bauer, Bodner, Erdogan, Truxillo, & Tucker, 2007).

**Resilience.** Historically focused on at-risk youth dealing with adversity, resilience in positive psychology is defined as a person's ability to rebound from a failure, setback, conflict, or even increased responsibility, positive events, and progress, landing in a stronger strategic place than before (Block & Kremen, 1996; Masten et al., 1985; Luthans, 2002a). Positive emotions work to increase resilience in the face of negativity

(Tugade, Fredrickson, & Barrett, 2004). Considered the most valuable positive resource in stressful, turbulent workplace environments, resilience prepares people to adjust, make transitions, and rebound during organizational restructuring and even downsizing (Makawatsakul & Kleiner, 2003; Trunk, 2007).

Originally considered traitlike and not open to development, resilience has recently proven to fall into the statelike category on the continuum and is open to development (Bonanno, 2004; Coutu, 2002; Masten & Reed, 2002; Youssef & Luthans, 2005). Methods used to build resilience include altering risk levels, using positive emotions, and fostering self-development and enhancement (Masten, 2001; Tugade & Fredrickson, 2004; Luthans, Vogelgesang, & Lester, 2006). The development of the resilient quality, characterized by a strong grip on realism (Coutu, 2002), utilizes the creation of coping strategies and realistic assessments during times of setbacks.

Tugade and Fredrickson (2004) report that resilient people are more capable of handling stress in a high-change environment, are flexible to shifting demands, are open to experiencing new and different things, and maintain emotional stability in the face of adversity. Employee performance (Luthans, Avolio et al., 2007), job satisfaction, commitment to the organization, and happiness at work (Youssef & Luthans, 2007) as well as the ability to handle downsizing (Maddi, 1987) is also positively impacted by high levels of resilience. With the link between stress and avoidable turnover (Coomber & Barriball, 2007; Avey, et al., 2009), resilience is considered a key factor in predicting how people will respond in stressful working conditions (Avey, Avolio, & Peterson, 2010).

**Optimism.** Seligman (1998), the father of positive psychology, uses an attributional or explanatory approach to defining optimism as the positive attribution of events to permanent, pervasive, and personal causes and negative occurrences to temporary, situation-specific and external causes. Complementary to Seligman's approach is Carver and Scheier (2002), who explain optimists as people who expect positive things to occur while pessimists await the bad. Whether attributional or expectational, the optimistic process supports an employee's belief that a desirable outcome will be the result of increased effort (Luthans, et al., 2010).

Schneider's (2001) method for developing optimism is a three-step process focusing on allowing leniency or forgiveness for the past, enjoyment of the present, and seeing opportunities in the future. Essential to the development of learned optimism is the separation of fact from perception and giving oneself and others the benefit of the doubt when uncontrollable misfortunes occur. Holding on to past mistakes, guilt, or shame hinders the learning process and stunts the desire to take risks.

Totterdell, Wood, and Wall (2006) found that optimism moderates the relationship between job strain and job characteristics. Higher levels of optimism add supplementary protection against stress in the workplace, increasing productivity and focus. Early studies of optimism indicated the characteristic as traitlike (Scheier & Carver, 1985) but Seligman (1998) promoted its development. Carver and Scheier (2002) recently found that a change in optimism levels is possible through training interventions.

**Research support for the four PsyCap constructs.** In 2010, researchers conducted a pre-test, post-test experiment on 80 managers' self-reported ratings of the four key areas of PsyCap prior to and two weeks after receiving the training intervention (Luthans, et al., 2010). Participants were randomly assigned to experimental and control groups. The treatment group reported higher levels of PsyCap (Time 1 $M$ =4.79 and Time 2 $M$ =4.93, $t$ = 2.99, $p < 0.001$) than the control group (Time 1 $M$ =4.63 and Time 2 $M$ =4.65, $t$ =0.54, $p < 0.59$) with a 95% confidence interval. Suggestions for future research include duplication with a larger audience and post testing over a longer time period.

In 2008, Luthans, Avey, and Patera conducted a pre-test, post-test experimental designed study on the impact of a two-hour web-based PsyCap training intervention on 364 adults. Using ANOVA, researchers reported the effect size for treatment group's difference in PsyCap levels between pre-test and post-test was d = .191 (r = .095). The effect size for the control group's difference in PsyCap levels between pre-test and post-test was d = .042 (r = -.084). Random controls increased internal validity to the study and the wide cross-section of participant gender, age, and ethnicity ensured external validity. One of the limitations to the study was not comparing the impact with a traditional face-to-face training intervention.

## Cognitive Behavior Therapy

Cognitive Behavior Therapy is a generic term for depression and anxiety disorder therapies that encompass behavioral and cognitive interventions (Brewin, 1996). The origins of CBT are rooted in psychologist dissatisfaction with psychoanalysis as early as the 1950's (Wilson, 1982). Behaviorism came first, flooding the psychoanalytical

landscape in the United States in the 1920's and adding a new dimension to behavior change in mental health patients (Watson & Rayner, 1920). In the 1960's and 1970's, the power of cognitive reasoning caused a paradigm shift in psychotherapy, combining the ability behaviorists had used for fifty years to condition patient's reactions to stimuli with the ability of the brain to relearn thought processes, organize thoughts and feelings, and modify behaviors based on circumstances (Beck, Rush, Shaw & Emery, 1979; Meichenbaum, 1977; Mahoney, 1974).

Traditional psychotherapy, stemming from the influence of Sigmund Freud, held that depression and other pathologies stemmed from unconscious drivers that the therapist could not access in the patient without triggering defense mechanisms (Westen, 1998). Therapy then, would require years of careful and indirect exploration. Behaviorism, the opposing therapeutic force of the time, posited that psychopathologies were due to outside forces hence the treatment of such disorders as depression and anxiety centered on reordering the external environment (Watson, 1913). In the 1950's, family and sex therapist Albert Ellis began the intentional development of a therapeutic program using the combination of cognitive behavior therapy (Ellis, 1965). Thoughts, beliefs, and expectations did not come into play for depression and anxiety until Aaron Beck's dissatisfaction with traditional psychotherapy surfaced in the late 1960's while working at the University of Pennsylvania (Beck, 1967).

**Research support for CBT effectiveness with depression.** In 1977, Beck and his colleagues at UPenn published the first-ever randomized control trial that showed that cognitive behavior therapy outperformed medications, the primary treatment option

available at that time (Rush, Beck, Kovacs, & Hollon, 1977). Patients in the trial responded better to cognitive treatment and also reported being well long after treatment ended. Due to the success of cognitive therapy with depressed patients (Beck, 1976; Beck, Rush, Shaw, & Emery, 1979), Beck applied the results to the study and treatment of anxiety disorders, substance abuse, panic disorders, and personality disorders (Beck, Emery, & Greenberg, 1985; Beck, Freeman & Associates, 1990; Beck, Wright, Newman, & Liese, 1993).

Prevention research began with Beck's interest in understanding suicidal ideation and the creation of a classification system for suicide prevention (Beck, Resnik, & Lettieri, 1974; Beck, Brown, & Steer, 1997). He discovered that elevated levels of hopelessness, the opposing characteristic to PsyCap's learned optimism, were the primary predictors of ultimate suicide (Beck, Weissman, Lester, & Trexler, 1974; Beck, Morris, & Beck, 1974). The cumulative results of increased knowledge about cognitive therapy and the need to intervene in learned hopelessness became the first-ever brief intervention for suicide that has proven effective in decreasing the frequency of subsequent suicide attempts in half among high-risk patients with a history of attempted suicide (Beck, Resnik, & Lettieri, 1974; Beck, Brown, Berchick, Stewart, & Steer, 1990; Brown et al., 2005).

A large-scale meta-analysis of depression treatments including CBT, interpersonal psychotherapy, nondirective supportive therapy, and short-term psychodynamic therapy gathered more than 147 studies and data from thousands of participants (Cuijpers, Andersson, Donker, & VanStraten, 2011). The effect size for self-

reporting patients with depression in the treatment group versus the control group who did not receive treatment was d = .66 with a confidence interval of 95%. All therapeutic approaches were significantly more effective in treating depression than non-treatment options, with effect sizes ranging from .45 to .87. In comparing treatment types, no significant difference between the impact of CBT and short-term psychodynamic approaches was found; however, nondirective supportive therapy was significantly less effective than the other therapeutic options. In determining the effectiveness of brief treatment interventions, CBT was found to be statistically superior to all other forms of depressive therapy, particularly in cases when the patient is less likely to seek out traditional, long-term treatment options (Cape, Whittington, Buszewicz, Wallace, & Underwood, 2010).

**Research support for CBT effectiveness with anxiety.** In the 1990's, research still had not proven which of the psychological treatments for anxiety disorders was most effective (Butler, Fennell, Robson, & Gelder, 1991). Treatment for panic disorders and phobias saw success and the same treatment methodologies were attempted on patients with anxiety disorders, inclusive of both cognitive and behavioral content, but studies had small participant pools and researchers did not indicate specifics about how much behavioral or how much cognitive content attributed to the results (Butler, Cullington, Hibbert, Klimes & Gelder, 1987). In 1991, the first comparative study set to determine whether cognitive-behavior therapy or behavior therapy alone was more effective (Butler, Fennell, Robson, & Gelder, 1991). Using multivariate analysis of variance, the research team noted that the two groups improved at the same rate in the beginning stages of

treatment, during the middle of treatment, and at the end of the treatment cycle. However, at six months after treatment, the group receiving CBT continued improving significantly while the group receiving behavior treatment alone stopped showing signs of improvement (Butler, Fennell et al., 1991).

In considering whether psychological and pharmacological treatments for anxiety are equally effective, the lower attrition rates associated with psychological treatments, specifically CBT, suggest otherwise, prompting more research into comparing effectiveness (Mitte, 2005). In a 2012 study of 1,305 participants separated into a CBT treatment group and a wait-list control group, those in the treatment group reported significant reductions in anxiety symptomology and, over the long term, patients reported experiencing improvement in health and alleviation of anxiety symptoms (Hunot, Churchill, Teixeira, & Silva de Lima, 2010). In a study determining CBT effectiveness for those experiencing anxiety disorders later in life, Gould, Coulson, and Howard (2012) reported statistically significant improvement (95% Clinical Improvement = 1.25-6.59) in self-reporting symptoms of such anxiety disorders as agoraphobia, generalized anxiety disorder, panic disorder, obsessive compulsive disorder, and PTSD post individual and group therapy.

**Research support for CBT effectiveness with stress.** As early as 1977, psychologists attributed high levels of stress to internal dialogue (Meichenbaum, 1977). In Meichenbaum's stress inoculation training, the patient's attention was drawn to self-defeating and anxiety-engaging statements when faced with difficulty. Once the self-defeating statements are identified they are challenged for factual basis and, if without

foundation, are replaced with positive self-talk. Another form of CBT for high levels of stress involved teaching patients problem-solving skills (D'Zurilla & Goldfried, 1971). This solutions-based therapy began with patients assuming that a solution for every problem exists, then the identification of which solution would work best in every situation. Furthermore, when a chosen solution fails, another pre-developed solution is chosen and tested, creating mental flexibility and the understanding that failure is not always negative.

Stress is a malady that is generally tested as a component of anxiety or depression; however, two studies specifically tested the effect of a CBT intervention on cancer-specific stress (Antoni et al., 2006) and using only a single-item measure, on global stress (Cohen & Fried, 2007). In the first study, 199 cancer patients were randomly assigned to a treatment or control group and placed into weekly seminars. The treatment group received cognitive behavior therapies with emotional support as a core component of the seminar while the control group received a highly educational, five-hour training seminar. Intervention impact was tracked over the course of the treatment and at one month, six months, and 12 months using the latent growth-curve modeling active over repeated measures ANOVA. The 10 week CBT intervention showed positive outcomes on stress levels, effect values ranging from .33 to .50, which lasted up to 12 months (Antoni et al., 2006). This study is significant due to the longitudinal nature of its investigations into the value of CBT interventions on stress.

**Research support for CBT effectiveness with PTSD.** Initially, the three forms of psychological treatment for the symptoms of PTSD included CBT, eye movement

desensitization and reprocessing (EMDR), and exposure therapy (ET) (Hunsley, Elliott, & Therrien, 2014). In a study of 360 men in combat comparing the effectiveness of the three, researchers discovered that all were effective at alleviating the symptoms of PTSD but CBT had a statistically positive impact on the self- and clinician-reported symptoms of general anxiety and depression (Bisson et al., 2007). In a study of adults with PTSD, Stewart and Chambless (2009) reported substantial effect sizes of d=2.59 at 95%, revealing that 77% of participants receiving CBT reported improvement while only 22% of participants experienced improvement without CBT. Today, CBT is considered the best form of treatment for patients with PTSD (Diehle, 2015).

## First Responder Need for Psychological Readiness Training Intervention

Resilience is a characteristic a number of studies have found in first responders due to their ability to manage emotional exhaustion associated with the work they do (North et al., 2002; North, Tivis et al., 2002). A body of evidence exists revealing that first responders, even as resilient as they are, exhibit high rates of depression and anxiety (Carey, Al-Zaiti, Dean, Sessana, & Finnel, 2011; Haddock, Jitnarin, Poston, Tuley, & Jahnke, 2011; Pyle et al, 2009), symptoms of PTSD (Boxer & Wild, 1993; Dudek & Koniarek, 2000; Haslam & Mallon, 2003; Meyer et al, 2012; Mishra, Goebert, Char, Dukes, & Ahmed, 2010), and stress (Moran & Colless, 1995).

Intervention, in the form of critical incident stress debriefing (CISD), was introduced by Mitchell in 1983 with the understanding that the debrief process would mitigate or even prevent PTSD and other negative outcomes of exposure to trauma.

Designed as a technique where groups of emergency responders gather to discuss thoughts, memories, emotions, and behaviors they saw or experienced during a critical incident with the goal of modifying the mind's replay of the event into something less traumatic through the retelling of the incident (Bledsoe, 2003). Such debrief group sessions typically occur within 14 days of a traumatic event (Everly & Mitchell, 2000). More recently, CISD has been changed into an intervention system of varying interventions known as critical incident stress management which uses self-help, referrals to professionals, and general information on stress management (Jahnke, Gist, Poston, & Haddock, 2014). To date, neither the CISD package as a whole nor the individual components have been exposed to thorough study with the exemption of its foundational element, CISD.

**Prevention**

Prevention interest has steadily increased over the last two decades (Kleim & Westphal, 2011). Prevention programs such as the Battlemind program have been developed to target the factors believed to enhance resilience in first responders (Adler, et al., 2009). Battlemind training is a pre-deployment initiative that focuses on boosting resiliency in soldiers through developing mental strength and self-confidence. Adler and colleagues (2009) compared the efficacy of the Battlemind program with a standard post-deployment stress intervention on 2,297 soldiers returning from a yearlong deployment. Results indicate that at four months post training, the soldiers in the Battlemind intervention group reported less post-traumatic stress and lower levels of stigma. However, without a true control condition in addition to the fact that the training for the

comparison group was a substantially shortened stress education course, conclusions drawn from the study are limited (Adler, et al., 2009). To date, the Battlemind program has not been tested on the first-responder community.

Families recovering from the impact of wartime deployments are offered support from Families Overcoming Under Stress (FOCUS). This nonprofit organization focuses on educating family members about the impact that trauma can have on returning service members. Their training programs build resilience and other skills that weaken the psychological ramifications of trauma (Beardslee et al., 2011; Saltzman et al., 2011). However, these programs lack formal evaluation and have not been tested in randomized controlled trials inside either the veteran or first responder communities (Kleim & Westphal, 2011).

## Summary

Research supports the individual treatment of depression, anxiety, stress, and posttraumatic stress with CBT. The development of PsyCap has shown effective in intervening in organizational situations where high levels of stress and anxiety exist. An increase in levels of hope, resilience, and optimism has proven effective in treating depression, anxiety, and stress. The creation of the PRT intervention is a combination of the most researched components of CBT and PsyCap. Testing the PRT intervention begins inside the first responder community. The study parameters are outlined in detail in the next chapter.

# Chapter 3: Research Method

In Chapter 3, I describe the research method used in the study to determine the impact of a combined cognitive behavior therapy and positive psychological capital intervention program on first responders' self-reported levels of depression, anxiety, stress, and PTSD. This chapter includes seven sections: research design and rationale (including variables and intervention choice), methodology (including population, sample size, and instrumentation used), role of the researcher, measures for ethical protection, threats to validity, and data collection and analysis. This chapter also includes information on the need for additional protection of participant identity for the first-responder population and the measures taken to ensure confidentiality. The chapter concludes with a summary.

## Research Design and Rationale

This study included a pretest, posttest quasi-experimental design. The participants were a convenience sample of volunteers from a population of 361 first responders. The participants were administered pretests that measured depression, anxiety, stress, and posttraumatic stress. Participants were then exposed to the psychological readiness training (PRT) intervention, after which posttests measuring depression, anxiety, stress, and posttraumatic stress were administered. The goal was to determine whether any significant changes occurred in the levels of self-reported depression, anxiety, stress, and posttraumatic stress after the PRT intervention. To accomplish this, difference scores were computed from the pre- and posttests for each of the four scales separately. Paired

sample *t* tests were used to determine whether the mean difference scores differed significantly.

I used G* Power's A Priori power analysis to determine the optimal sample size required for this study. Given a two-tailed test of a mean difference score with .01 alpha, .5 effect size, and 99% power, a minimum of 100 participants was required (Faul, Erdfelder, Buchner, & Lang, 2009). The available participant pool for this study included 361 first responders consisting of police officers, emergency medical responders, veterans, and firefighters located in a medium-size Midwestern city. The study was introduced to them by leaders within their first-responder community. Training materials were coded according to participant, passed out, and collected personally by me to ensure confidentiality.

As a group, police officers and firefighters tend to be suspicious due to their frequent exposure to people who are trying to hide the truth from them (Adamonienė & Ruibytė, 2014). Of late, mental health concerns within the first responder profession have resulted in a return to the use of employee assistance programs (EAP). Since the 1940s, EAPs have included in-house programs that focus on employee substance abuse issues and performance problems (Johnson, 2012). Due to the balancing act between maintaining confidentiality and ensuring the best interest of the organization, use of the EAP can result in disciplinary measures being meted out as well as termination (Leadership Today, 2007). As a result, first responders distrust the process and suffer in silence. The solution, according to Darr (2012), is to create a program that intervenes before the crisis hits.

### Research Hypotheses

$H_0$1: PRT intervention does not affect depression levels in first responders.

$H_A$1: PRT intervention does affect depression levels in first responders.

$H_0$2: PRT intervention does not affect anxiety levels in first responders.

$H_A$2: PRT intervention does affect anxiety levels in first responders.

$H_0$3: PRT intervention does not affect stress levels in first responders.

$H_A$3: PRT intervention does affect stress levels in first responders.

$H_0$4: PRT intervention does not affect PTSD levels in first responders

$H_A$4: PRT intervention does affect PTSD levels in first responders.

The notion that the PRT intervention could be preventive in nature is potentially provable. However, for the purposes of this study, the variables being measured included only the impact of the training intervention over an 8-week period. Future longitudinal studies using the same first responder group and training program over a longer period of time may provide evidence of the preventative nature of the PRT program.

## Methodology

### Target Population

The target population for this study was any professional first responder. According to Kleim and Westphal (2011), first responders include firefighters, medical personnel, rescue disaster workers, paramedics, police, and military personnel and veterans who are or have been regularly exposed to adversity, stress, and trauma. The Department of Health and Human Services (2015) reported that there are over two million police, firefighters, and emergency response personnel in the United States. As of

2013, the Department of Homeland Security (2015) reported that there were 13,171 police officers and 31,254 firefighters in the state of Indiana. Emergency medical personnel double as firefighters, making the inclusion of their numbers redundant. At the time of this study, the total number of police and fire personnel in the medium-size Indiana city where the study was conducted was 506. Of those, 361 were made available through regularly scheduled training days and roll calls to receive the invitation to participate in the training and the associated study. To ensure validity of results, 100 volunteers were needed.

**Sampling and Sampling Procedures**

The volunteer sampling strategy was necessary to protect the identity of the first responders who were participating. I considered collecting consent forms in advance, but disseminating training materials to those who agreed to participate would have clearly identified participants. The police and fire departments offered to provide the technology to electronically distribute the training materials and collect survey results, but the potential for departmental access to the participant responses could have greatly impacted a first responder's willingness to participate. Building trust between me and the first responder pool was based on my ability to convince the potential participants of their protection against departmental access to any specifics surrounding the study.

The first step in seeking volunteers began with meeting with the police and fire chief and the leadership teams representing each department. From there, I was given the opportunity to present research participation information at roll calls and monthly training sessions within each department. At the conclusion of those meetings, officers

were asked to complete an anonymous three-question survey, dropping their papers into a box held by me at the conclusion of the meeting. The following questions were asked:

1. Are you interested in participating in the PRT program?
2. Are you willing to participate in the research project, completing the pre- and posttests, in addition to participating in the PRT program?

The total number of first responders who indicated a willingness to participate in the training program and the pre- and posttests was 219. Personnel who indicated an interest in participating in the PRT program without participating in the study totaled 23. Of the remaining 119 first responders, 33 did not return their questionnaires. Due to the results of the initial volunteer survey, I expected to have 219 participants, minus those who withdrew before the end of the study.

The leadership team from the police department, including the leaders of the Fraternal Order of Police (FOP), numbered 56. The leadership team from the fire department numbered 38. All indicated support for the research project and a willingness to participate. The national president of the FOP verbally gave his support for this study and assigned Mike Haley, an instructor from the International Critical Incident Stress Foundation in Washington, D.C., to follow the progress of the study. The FOP president's support, when shared with the first responder population, was believed to have a positive impact on the 119 volunteer participants.

**Procedures for Recruitment, Participation, and Data Collection**

The PRT intervention was introduced to each of the 361 first responders, and volunteer participation consent forms were disseminated. Once the participant consent

forms were collected, I emailed the individual volunteers the instructions for accessing the pre- and posttests. Consent forms for both participants and nonparticipants were stored in a four-combination safe where they will remain for the required 5-year period of time.

Each week, participants were instructed to login to a secure website with video training and homework assignments. At the conclusion of the 8-week training course, participants received a link to the posttest. In the event of an insufficient number of participants completing the PRT intervention, the departments would have been given an opportunity to participate in a secondary study which would have been initiated shortly after the completion of this initial study. If a sufficient number of respondents were not recruited from the same city, the remainder would have been recruited from the national FOP member pool. These back-up plans were available if needed but were not used because an adequate number of volunteers participated in the project.

Both the police and fire department chiefs indicated a desire to continue working toward the creation of a prevention tool that will have long-term implications on crisis response personnel. Toward that end, the research results were used to determine where the PRT intervention performed well and where adjustments could be made to increase its efficacy. Continued monitoring of the mental health of the first responders in the study will provide longitudinal data on the impact of the training program on turnover, burnout, early retirement, and other costly outcomes of repeated exposure to traumatic situations.

**Survey Instruments**

**DASS-21**. The Depression, Anxiety, Stress Scale (DASS-21) is a 21-item Likert scale used to measure the severity or frequency of participants' experiences over a specified amount of time (Appendix A). Developed in 1996, the DASS-21 includes a 4-point scale as follows: 0 = Did not apply to me at all; 1 = Applied to me to some degree or some of the time; 2 = Applied to me a considerable degree or a good part of the time; 3 = Applied to me very much or most of the time (Lovibond & Lovibond, 1996). This instrument is available to the general public without permission from the authors. The DASS-21 reliability coefficients for each portion of the scale are found in Table 1 below.

Table 1

*DASS-21 Reliability Coefficients*

| Depression | Anxiety | Stress |
|---|---|---|
| α = .85<br>95% confidence interval<br>Avg. inter-item correlation<br>.47 | α = .81<br>95% confidence interval<br>Avg. inter-item correlation<br>.40 | α = .88<br>95% confidence interval<br>Avg. inter-item correlation<br>.52 |

Lovibond and Lovibond (1996) tested the convergent and discriminant validity of the DASS in comparison with the Beck Depression and Beck Anxiety Inventories. Results confirmed that the DASS is reliable and valid in both clinical and nonclinical groups with advantages to the original 42-item scale including smaller interfactor correlations, a cleaner factor structure, with fewer items (Antony, Bieling, Cox, Enns, & Swinson, 1998). The DASS-21 has been shown to be reliable and valid across cultures (Oei, Sawang, Goh, & Mukhtar, 2013), genders (Walton & Politano, 2014), and socioeconomic status (Jaddou et al., 2012), supporting its use across various populations.

According to the Thoreau Walden University Discovery Service, the DASS-21 has been used to test college student happiness, cancer patient coping, primary caregivers, patients with multiple sclerosis, and military personnel assigned to the flight deck of a carrier; in addition, the DASS-21 has been used in over 7,000 studies involving police and firefighters.

**PTSD Checklist – Civilian Version**. The DSM V PTSD Checklist – Civilian Version is a 20-item self-reporting checklist designed to evaluate symptomology of PTSD (Appendix B). As opposed to the military version, the civilian version is used to evaluate responses to traumatic situations encountered in the course of civilian life. Using a 5-point Likert scale, respondents indicate the degree of impact a traumatic event has had on their emotional state. Created by Weathers, Litz, Huska, and Keane in 1994 and updated by the National Center for PTSD in 2014, the checklist result is a continuous score based on the severity of symptoms, indicating the burden the symptoms placed on the respondent. Internal reliability is high at 95%, and item-total correlations range from r = .61 to 0.78 (Weathers, Litz, Herman, Juska, & Keane, 1993). This instrument was created by researchers at the National Center for PTSD and is available to the public without express permission. According to the Thoreau search engine used in tandem with the Walden University Discovery Service, there are more than 7,000 journal articles that focus on firefighters and/or police officers including the PTSD Checklist – Civilian Version.

## Role of the Researcher

My role was limited to gaining permission from the police and fire chiefs to solicit participation of their respective department personnel. At the onset of the study, I met personally with the participant pool during regularly scheduled roll call meetings over the course of 3 days in the police department and 3 days in the fire department. An explanation of the training program and its purpose was given to the group as well as a description of the study procedures, with particular focus paid to the use of pseudonyms during virtual training to protect participants' identity. Questions from the first responders were answered and then consent forms with sealable envelopes were passed out and collected. Once the study was introduced, my role focused on collecting pre- and postintervention data. After collecting and analyzing the data, I presented a summary of the results to the two chiefs and their leadership teams.

## Assumptions

Three primary assumptions existed in the *t* test calculating the mean difference at two points in time (Littell, Ramon, Stroup, & Freund, 2002). The first, the independence assumption, assumes that the elements of one sample are not related to those of the second sample (Littell, Milliken, Stroup, & Wolfinge, 2006). The second, the normality assumption, assumes that samples are randomly drawn from populations with normal distributions (Littell et al., 2002). Finally, the equal variance assumption assumes that the variance among the two samples are equal (Littell et al., 2006).

## Measures for Ethical Protection

Prior to the launch of the study, 361 consent forms were created and paired with sealable envelopes. Of those, 119 volunteers actually completed the study. The consent form requested personal email addresses from those volunteering to participate. Electronic communication directly from me to the volunteers provided instructions for accessing the training program overview, training materials, and instructions for accessing the online video instruction (see Appendix F). Finally, the pre- and post-test instructions outlined the dates and instructions on completing the electronic surveys, sent directly from Survey Monkey to the individual email inboxes. The participation envelopes were passed out to every first responder on both fire and police forces and the finished product (the sealed envelope) revealed no indictors about whether a person chose to participate or not. I handed out and collected every packet, keeping the chances of outside interference to a minimum.

Even while the ultimate focus of the training intervention was largely concerned with the psychological impact of repeated exposure to traumatic situations, the training materials focus on building positive attributes. The PRT curriculum educated participants about what are considered normal psychological and physiological reactions to trauma. The theory behind educating people about what to potentially expect is of course, to eradicate fear of the unknown. The video instruction taught hope-in-action, mental-efficacy, resilience, and optimism. Each of these characteristics is considered a positive attribute to have and none of them is harmful in building. The entire training program allows for journaling through homework assignments from *The HEROES Playbook*. *The*

*HEROES Playbook* is a well thought out strategic plan that each participant created in anticipation of future roadblocks to their goals and dreams. The playbook was slowly developed through the homework assignments along the course of the eight weeks of training and acted as a roadmap to success, essentially strengthening the brain against the harmful impact of future traumatic experiences. Every effort to eradicate negativity was taken as a natural component of the theory of positive psychological capital, thus protecting participants from potential negative side effects of a PRT program. As a part of every section in the training process, the participants were reminded that they may withdraw from the study at any time.

## Data Collection and Analysis

The intent of this study was to examine the impact that a combined PsyCap and CBT training intervention had on individual perception of depression, anxiety, stress, and posttraumatic stress. The statistical test is the mean difference score computed from two points in time (i.e., posttest-pretest).

Research data, especially for the beginning researcher, requires strict management and security (Patton, 2002). Once the written surveys were collected, the data was transferred by me into the SPSS software. The SPSS software maintains the data stored in a secure location and codes with consistent themes (Bergin, 2011). Consistency is absolutely necessary in conducting research studies and the SPSS program requires data to be entered specifically and stored securely. The data collected was saved into the SPSS software and was also downloaded onto a flash drive that is secured in order to maintain

data integrity. The paper consent documentation was secured in a locked cabinet and will be kept on file for five years post-study completion.

## Threats to Validity

The most concerning threat to external validity in studying the impact of a PRT intervention was fear on the part of the participant. The first responder community is experiencing an unprecedented amount of scrutiny of late, particularly with rise in concerns about PTSD (Erich, 2014; Kehl, Knuth, Hulse, & Schmidt, 2014). Legislation governing the compensation allowability for first responders with PTSD has passed in two states and is awaiting approval in multiple others (Associated Press, 2015). Given the pressure on first responders to perform regardless of job-related emotional or psychological scarring, the desire to answer the pre- and post-questionnaires honestly could be skewed by the perceived need to hide reality because of the fear of repercussions. An additional external threat to consider was the inability to generalize the study beyond the geography of the original study to first responders in smaller or larger areas.

A secondary concern to external validity was first-responder participation based on the verbal support of police and fire leadership. The Fraternal Order of Police vocalized its staunch support for this study and appealed to police officers to strongly consider participating. The leadership team from the fire department also made it clear to the shift managers that they stand behind participation. Experiencing pressure to participate could skew a participant's active engagement in the training program. Participation under duress may result in a skewing of pre- and post-test results as well as

the level of engagement (over eager engagement or less-than-active engagement) throughout the training intervention.

A threat to internal validity was the makeup of the first responder participant pool. While fortunate to have more than the required number of first-responder participants to ensure validity in one city, the fact that they all came from the same city could potentially alter the results' ability to be applied to a larger pool of first responders. This threat, however, was not as concerning as the first two because the makeup of the city's first responding personnel is reflective of the makeup of the community and larger police and firefighter departments nationwide. Even the inclusion of emergency medical personnel in this study doubling as firefighters can be applied to fire departments across the nation. Many departments in the United States do not have separate EMS units, instead choosing to qualify their firefighters as emergency services personnel thereby making the participant pool applicable to multiple departments across the country.

A final consideration in internal validity was the true impact of the independent variable on the dependent variable. The training intervention (independent variable) was delivered over the course of eight weeks. The assumption then was that the only thing that could potentially impact depression, stress, anxiety, and PTSD during that time period was the PRT intervention. The study does not take into account other influences such as family or social support following involvement in a critical incident.

## Summary

The research study was a quasi-experimental, pre-test post-test design conducted in a medium-sized city in the Midwest. Out of the available 361 first responders given the

option to participate in the study, power considerations required that at least 100 participants be sampled through volunteer participation in the PRT intervention; a combined PsyCap and CBT treatment program delivered electronically and requiring written homework. Changes in levels of self-reported depression, stress, anxiety, and PTSD were assessed by testing whether mean difference scores differed from zero in order to determine the impact of the training intervention. Results were shared with local and national police, fire, and emergency service agencies as well as the Veteran's Affairs Department.

First responders are faced not only with repeated exposure to traumatic or critical incidences; they are expected to be ready at a moment's notice to take action when trauma occurs. The result of such a state of repetitive readiness is the psychological toll that increased stress, depression, anxiety, and post-traumatic symptomology has on first responder mental health. Research into the areas of CBT and positive PsyCap align rather nicely to create the PRT intervention: an eight-week combined virtual instruction and written homework program that culminated in a strategically built *HEROES Playbook*. The development of this playbook required the creation of hope-in-action, mental-efficacy, resilience, and optimism, as well as a thorough knowledge of the negative impacts of traumatic incidences and culminated with a socialization piece that provided each participant the opportunity to share with others his or her journey to overcome.

Traditional approaches to such costly non-physical injuries include encouragement to participate in EAPs or to seek counseling from a local provider. Unfortunately, those options only respond to psychological trauma. They do not

intervene, nor do they prevent. To make matters worse, those options require that first responding personnel place their professional futures into the hands of people who are attached to the human resources department which ultimately can recommend disciplinary action (particularly in substance abuse cases) and even termination. The PRT program sought to intervene and even prevent mental health trauma and was available remotely while maintaining participant confidentiality.

# Chapter 4: Results

The purpose of this study was to test a psychological readiness training (PRT) intervention, a combination of cognitive behavior therapy (CBT) and psychological capital (PsyCap), on first responder symptoms of stress, depression, anxiety, and PTSD. The following results chapter consists of four sections. First, I describe the results of the participant recruitment process as well as the data collection procedures. Second, I explain the fidelity of the PRT with regard to participation rates and unanticipated adverse events. Third, I present the results of the statistical analyses. Finally, I present answers to the research question in a summary section.

## Data Collection

Upon receipt of the Institutional Review Board approval (02-03-16-0177635), I scheduled the study introduction with the police and fire departments. Prescheduled monthly emergency medical technician training in the fire department took place the following week, permitting access to the firefighters during a required monthly training class. The police department opened roll call to me and, over the course of 3 days, each shift received the study information and invitation to participate. A total of 361 first responders were available for training and roll call. Each was provided with a consent form requesting acknowledgement of the opportunity to participate and, if volunteering, a personal email address for all further communication. Of the 361 invited, 159 said yes, 194 refused participation, and eight consent forms were handed in without being filled out. None indicated a desire to train without participating in the study.

## Sample Demographics

Of the 119 first-responder participants who completed the program, 53 were police officers and 66 were firefighters. The following tables present the age, gender, number of years in the profession, and critical incidents reported of each participant.

*Table 2*

*Participant Age Demographics by Profession*

| | Firefighter | Police Officer | Total |
|---|---|---|---|
| Age 18-29 | 3 | 6 | 9 |
| Age 30-44 | 33 | 25 | 58 |
| Age 45-59 | 29 | 20 | 49 |
| Age 60+ | 1 | 2 | 3 |

*Table 3*

*Participant Gender Demographics by Profession*

| | Firefighter | Police Officer | Total |
|---|---|---|---|
| Female | 3 | 5 | 8 |
| Male | 63 | 48 | 111 |

*Table 4*

*Participant Years in Service by Profession*

| | Firefighter | Police Officer | Total |
|---|---|---|---|
| 0-5 years | 2 | 6 | 8 |
| 6-10 years | 11 | 10 | 21 |
| 11-15 years | 14 | 7 | 21 |
| 16-20 years | 14 | 15 | 29 |
| 21-25 years | 12 | 6 | 18 |
| 26+ years | 13 | 9 | 22 |

Table 5

Critical Incidents Reported

| | Firefighters | Police Officers |
|---|---|---|
| Reported Critical Incident Exposure Pre-PRT | 27 | 18 |
| Reported Critical Incident Exposure During PRT | 5 | 3 |

The DASS-21 and the PTSD Civilian Self-Report scale addressed symptoms experienced in the last month. Knowing whether first responders experienced a critical incident in the 30 days leading up to the PRT intervention helped me mediate potential result bias due to post-traumatic stress, the body's natural reaction to unnatural situations, as opposed to actual PTSD symptoms. The posttest was given 9 weeks after the pretest, allowing for twice the recommended amount of time (30 days) for symptoms of post-traumatic stress to be alleviated. At the study's end, only one participant indicated experiencing a critical incident at the start of the study and in the 30 days leading up to the study's completion.

After collecting consent forms, I emailed the volunteers a welcome message with instructions for completing the pretests, which were electronically delivered through Survey Monkey, and instructions for accessing the virtual learning environment as well as their assigned pseudonyms. Of the 159 emails sent, seven bounced back as invalid email addresses. Of the remaining 152 volunteers, 31 opted out of the training program due to time constraints or a change of mind. Of the remaining 121 volunteers, 119 completed the pretests and began the virtual PRT.

At Week 9, 1 week after the 8-week training course was completed, participants were emailed the link to Survey Monkey to complete the posttest. Of the 119 participants who completed the training, 99 finished the posttest during Week 9, and the remaining 20 completed the posttest in Week 10. No posttest survey questions were skipped.

## External Validity

External validity refers to the ability of the study's results to be generalized to first-responder groups beyond the one used for the study. According to a 2010 study by the Bureau of Justice Statistics, in local police departments with more than 100 police officers, 14% were women. The department participating in this study has 247 police officers on the active duty roster, 5% of whom are women. In this study, five of the 53 (9.4%) of the police officer participants were women. In a report by Cornell's Institute for Women and Work (as cited by Moccio, 2008), only 4% of U.S. firefighters are women. Of the 66 firefighter participants in this study, only one woman (1.5%) volunteered. Demographically, the participant sample in this study did not match the national averages in law enforcement and firefighting.

According to the 2016 report by the National Firefighter Protection Association, the time-in-service represented by the sample of participants in this study aligned with the national averages. Additionally, of the fire services in the United States, 61% provide emergency medical technician services, as does the fire department in this study. A breakdown of police officers by age was unavailable. However, according to the Bureau of Labor Statistics (2010), most police officers in the United States are between the ages

of 25 and 40. This information coincides with the demographic makeup of the department participating in the study.

## Intervention Fidelity

The primary barrier to training success was also considered its most valuable asset: the virtual delivery. Some participants who did not have previous experience using a computer struggled initially with accessing the virtual learning classroom and the video instruction material. The instructor made adjustments for those participants, choosing to send the YouTube video links directly to their personal email addresses rather than requiring them to access the virtual classroom to watch the instruction. With email the primary preferred format for those participants, homework assignments were also delivered through personal email addresses, eliminating the need for virtual classroom access for the duration of the study. As a result, the less technologically savvy among the group maintained the speed and progression of the weekly assignments and finished the training at the same time as other participants.

Training modules focused on one of the six elements of the PRT curriculum each week. Video lessons, ranging in time from 25 to 45 minutes, were uploaded to YouTube and posted inside the virtual classroom or emailed to individual participants every Monday. The training participants then had the rest of the week to view the lesson. Along with the video instruction, weekly homework assignments were posted on Monday with Sunday at midnight as due dates. Once participants completed the homework assignment each week, it was either uploaded into the virtual learning classroom or emailed directly to the instructor.

The instruction modules were laid out weekly as follows:

1. Hope-In-Action,
2. Resilience,
3. Mental-Efficacy,
4. Optimism Part I,
5. Optimism Part II,
6. Education,
7. Socialization Part I, and
8. Socialization Part II.

There were no adverse events to report during the PRT intervention. Upon completion of the final assignment, the PRT intervention ended. Participants were emailed a link to the posttest, and after they completed it they were thanked for their effort and dismissed from the project.

## Results

The 119 participants who completed the pre- and posttests consisted of male and female firefighters with various experience levels. Participants were recruited from a Midwestern city with more than 100,000 residents. Those among the fire service participants included emergency medical technicians and paramedics, as this particular department provides both fire and emergency medical services. Also, within both the police and fire departments, participants included military veterans from all branches of service.

**Statistical Assumptions**

The survey instruments used in this study treat ordinal data as interval even though the difference between Likert levels does not meet the requirement for equal intervals between choices (Bieling, Cox, Enns, & Swinson, 1998). For example, in the DASS-21, the difference between a choice of 0 [does not apply to me at all] and 1 [applies to me some degree, or some of the time] is not quantifiable as the same difference between a choice of 2 [applied to me a considerable degree, or a good part of the time] and 3 [applied to me very much, or most of the time]. However, to test with a more powerful statistical technique, the intervals are considered equal.

Sampling a group from a larger population is best done randomly (Field, 2009). However, Field (2009) indicated that even in random sampling the assumption is that the smaller group will accurately and evenly reflect the overall gender, culture, experience, and age levels of the larger population. In this study, volunteer sampling was used to recruit the participant group. Although the challenges to volunteer sampling include a desire by participants to be a part of the study, the assumption is that even in their willingness, the grander purpose drives them to withhold bias from their responses. In the first-response population, integrity and character are two attributes that thwart the tendency to respond to survey questions with any agenda in mind (Bonanno, 2004; Everly & Mitchell, 2000). A small number of participants indicated a great deal of skepticism for the project but chose to participate despite of their cynical views.

This pretest, posttest quasi-experimental research study was designed to match the participation comfort level of the population under study. First responders are known for

their preference to keep mental health issues to themselves (Everly & Mitchell, 2000). They do not trust easily. To overcome the stigma associated with PTSD, depression, anxiety, and stress and their vocalized concerns about study information being shared, a volunteer sample was taken and a pretest measuring the PTSD, depression, stress, and anxiety levels of each participant was delivered electronically via Survey Monkey. The posttest was delivered the same way, keeping direct access to the participants to a minimum. Having seen the survey questions at an earlier point in time, it is possible that participants knew how to answer the second time to make a desired difference in the results. This is unlikely, however, due not only to previously mentioned integrity characteristics but also the length of time between the administration of the pre- and posttest.

Finally, the assumption of normality required for testing whether the mean difference score differs from zero is considered robust enough not to introduce serious error into the study results.

**Statistical Findings**

The primary research question focused on whether the PRT intervention would have any significant impact on first responders self-reported levels of stress, anxiety, depression, and PTSD in a medium-size Midwestern town. Specifically, did the completion of *The HEROES Playbook*, created for the combined CBT and PsyCap training intervention, have any significant impact on first responder reported symptoms of depression, anxiety, stress, and PTSD? The findings by hypothesis are reported below.

**Research Hypothesis Set 1**

$H_0$1: PRT intervention does not affect depression levels in first responders.

$H_A$1: PRT intervention does affect depression levels in first responders.

The data set was analyzed through SPSS using a paired samples *t* test with two repeated measures variables. The first variable was total depression score 1 week before training intervention and the same depression score 1 week after completing the psychological readiness training. The mean prior to training, as shown in Table 6 below, was 8.89. The mean after the training intervention was 4.1176, which, as reported in Table 6 below, indicated a mean difference of 4.7732. The standard deviation, calculated by SPSS for each participant to indicate individual differences in depression scores before and after the training intervention, is shown in Table 8 as 5.07643. The *t* score was 10.257 with a *p* value < .001. There was a significant difference in the scores preintervention ($M$ = 8.89, $SD$ = 8.88) and the scores postintervention ($M$ = 4.11, $SD$ = 4.71); $t(118) = 10.257$, $p = .000$. Upon evaluation of the depression score *t* test, the null hypothesis was rejected.

Table 6

*Results for Depression Scores Before and After Intervention*

| | Mean | *N* | *SD* | Standard Error Mean |
|---|---|---|---|---|
| Total Depression Score Before Training Intervention | 8.8908 | 119 | 8.88609 | .81459 |
| Total Depression Score After Training Intervention | 4.1176 | 119 | 4.71057 | .43182 |

Table 7

*Paired Samples Correlations of Total Depression Scores Before and After Intervention*

| | *N* | Correlation | Significance |
|---|---|---|---|
| Total Depression Score Before & After Training Intervention | 119 | .900 | .000 |

Table 8

*Paired Samples Test Results for Depression*

| | Mean | *SD* | Std. Error Mean | 95% *CI* of the Difference Lower | 95% *CI* of the Difference Upper | *T* | Significance (2-tailed) |
|---|---|---|---|---|---|---|---|
| Total Depression Score Before Training Intervention – Total Depression Score After Training Intervention | 4.77311 | 5.07643 | .46536 | 3.85158 | 5.69464 | 10.257 | .000 |

Note. *SD* = Standard Deviation, *CI* = Confidence Interval.

**Research Hypothesis Set 2**

$H_0$2: PRT intervention does not affect anxiety levels in first responders.

$H_A$2: PRT intervention does affect anxiety levels in first responders.

The data set was analyzed through SPSS, using a paired samples t-test with two repeated measures variables. The first variable is total anxiety score one week before training intervention and the same anxiety test one week after completing the psychological readiness training. The mean prior to training, as shown in Table 9 below, is 4.8403. The mean post training intervention is 1.4958, which, as reported in Table 9 below, provides a mean difference between pre- and post-intervention of 3.3445. The standard deviation, calculated by SPSS for each participant to indicate individual differences in anxiety scores before training intervention and after, is shown in Table 11 as 3.74717. The *t* score is 9.737 with a *p* value < .001. There was a significant difference

in the scores pre-intervention (M=4.84, SD=5.65) and the scores post-intervention (M=1.49, SD=2.67); t(9.73) = 3.74, p = .000. Upon evaluation of the anxiety score t-test, the null hypothesis is rejected that there is no difference between pre- and post-intervention anxiety levels in first responders.

Table 9

*Results for Anxiety Scores Before and After Intervention*

| | Mean | *N* | *SD* | Standard Error Mean |
|---|---|---|---|---|
| Total Anxiety Score Before Training Intervention | 4.8403 | 119 | 5.65383 | .51829 |
| Total Anxiety Score After Training Intervention | 1.4958 | 119 | 2.67085 | .24484 |

Note: *SD* = Standard Deviation, *N* = Number of Participants.

Table 10

*Paired Samples Correlations in Anxiety Scores Before and After Intervention*

| | *N* | Correlation | Significance |
|---|---|---|---|
| Total Anxiety Score Before & After Training Intervention | 119 | .830 | .000 |

Table 11

*Paired Sample Test Results for Anxiety*

| | Mean | *SD* | Std. Error Mean | 95% *CI* of the Difference Lower | 95% *CI* of the Difference Upper | *T* | Significance (2-tailed) |
|---|---|---|---|---|---|---|---|
| Total Anxiety Score Before Training Intervention – Total Anxiety Score After Training Intervention | 3.34454 | 3.74717 | .34350 | 2.66431 | 4.02477 | 9.737 | .000 |

Note. *SD* = Standard Deviation, *CI* = Confidence Interval.

**Research Hypothesis Set 3**

$H_0$3: PRT intervention does not affect stress levels in first responders.

$H_A$3: PRT intervention does affect stress levels in first responders.

The data set was analyzed through SPSS, using a paired samples t-test with two repeated measures variables. The first variable is total stress score one week before training intervention and the same stress test one week after completing the psychological readiness training. The mean prior to training, as shown in Table 12 below, is 12.1681. The mean post training intervention is 6.3866, which, as reported in Table 12 below, provides a mean difference between pre- and post-intervention of 5.7815. The standard deviation, calculated by SPSS for each participant to indicate individual differences in stress scores before training intervention and after, is shown in Table 14 as 4.77841. The *t*

score is 13.199 with a *p* value < .001. There was a significant difference in the scores pre-intervention (M=12.16, SD=8.15) and the scores post-intervention (M=6.38, SD=4.96); t(13.19) = 4.78, p = .000. Upon evaluation of the stress score t-test, the null hypothesis is rejected that there is no difference between pre- and post-intervention stress levels in first responders.

Table 12

*Results for Stress Scores Before and After Intervention*

| | Mean | *N* | *SD* | Standard Error Mean |
|---|---|---|---|---|
| Total Stress Score Before Training Intervention | 12.1681 | 119 | 8.15353 | .74743 |
| Total Stress Score After Training Intervention | 6.3866 | 119 | 4.96958 | .45556 |

Note: *SD* = Standard Deviation, *N* = Number of Participants.

Table 13

*Paired Samples Correlations in Stress Scores Before and After Intervention*

| | *N* | Correlation | Significance |
|---|---|---|---|
| Total Stress Score Before & After Training Intervention | 119 | .843 | .000 |

Table 14

*Paired Samples Test Results for Stress*

| | Mean | *SD* | Std. Error Mean | 95% *CI* of the Difference Lower | 95% *CI* of the Difference Upper | *T* | Significance (2-tailed) |
|---|---|---|---|---|---|---|---|
| Total Stress Score Before Training Intervention – Total Stress Score After Training Intervention | 5.78151 | 4.77841 | .43804 | 4.91408 | 6.64894 | 13.199 | .000 |

Note. *SD* = Standard Deviation, *CI* = Confidence Interval.

**Research Hypothesis Set 4**

$H_0$4: PRT intervention does not affect PTSD levels in first responders

$H_A$4: PRT intervention does affect PTSD levels in first responders.

The data set was analyzed through SPSS, using a paired samples t-test with two repeated measures variables. The first variable is total PTSD score one week before training intervention and the same PTSD test one week after completing the psychological readiness training. The mean prior to training, as shown in Table 15 below, is 16.5714. The mean post training intervention is 7.3613, which, as reported in Table 15 below, provides a mean difference between pre- and post-intervention of 9.2101. The standard deviation, calculated by SPSS for each participant to indicate individual differences in PTSD scores before training intervention and after, is shown in Table 17 as

7.60115. The *t* score is 13.218 with a *p* value < .001. There was a significant difference in the scores pre-intervention (M=16.67, SD=14.60) and the scores post-intervention (M=7.36, SD=8.34); t(13.21) = 7.60, p = .000. Upon evaluation of the PTSD score t-test, the null hypothesis is rejected that there is no difference between pre- and post-intervention PTSD levels in first responders.

Table 15

*Results for PTSD Scores Before and After Intervention*

| | Mean | *N* | *SD* | Standard Error Mean |
|---|---|---|---|---|
| Total PTSD Score Before Training Intervention | 16.6714 | 119 | 14.60124 | 1.33849 |
| Total PTSD Score After Training Intervention | 7.3613 | 119 | 8.34300 | .76480 |

Note: *SD* = Standard Deviation, *N* = Number of Participants.

Table 16

*Paired Samples Correlations in PTSD Scores Before and After Intervention*

| | *N* | Correlation | Significance |
|---|---|---|---|
| Total PTSD Score Before & After Training Intervention | 119 | .924 | .000 |

Table 17

*Paired Samples Test Results for PTSD*

| | Mean | *SD* | Std. Error Mean | 95% *CI* of the Difference Lower | 95% *CI* of the Difference Upper | *T* | Significance (2-tailed) |
|---|---|---|---|---|---|---|---|
| Total PTSD Score Before Training Intervention – Total PTSD Score After Training Intervention | 9.21008 | 7.60115 | .69680 | 7.83024 | 10.58993 | 13.218 | .000 |

Note. *SD* = Standard Deviation, *CI* = Confidence Interval.

In each of the four mental health areas tested – depression, anxiety, stress, and post-traumatic stress disorder symptomology – the null hypothesis has been rejected. Pre-training intervention scores were impacted by the psychological readiness training received by first-responder participants.

## Summary

The primary research question posed was whether a combined Psychological Capital and Cognitive Behavior Therapy training intervention would have an impact on first-responder symptoms of post-traumatic stress disorder, depression, anxiety, and/or stress. The intervention, an eight-week virtual training course, included video instruction with weekly written homework assignments. The results indicate a significant difference

in the 119-participant group's pre- and post-intervention scores. Of the four mental health issues tested, PTSD was the most impacted by the intervention. Second to PTSD was stress, followed by depression and finally anxiety. As PTSD is frequently diagnosed comorbid with depression and/or anxiety, it is noteworthy that all three were significantly alleviated post-PRT intervention.

# Chapter 5: Discussion, Conclusions, and Recommendations

First responders are a professional group of individuals who are charged with ensuring the safety and well-being of citizens. During the course of their careers, they are exposed to numerous traumatic situations. In some cases, the trauma is vicariously experienced. In others, the traumatic event directly impacts them. According to the National Trauma Institute (2014), each year 41 million emergency room visits are due to traumatic events and result in 2.3 million hospital admissions each year. Post-traumatic stress is the body's natural response to having lived through a traumatic experience. However, for an increasing percentage of the population, alleviation of post-traumatic stress symptoms does not happen naturally (Lee, Daffern, Ogloff, & Martin, 2015). Frequently, those diagnosed with PTSD are also diagnosed with depression and/or anxiety (Raab, Mackintosh, Gros, & Morland, 2015).

This pretest, posttest quasi-experimental study addressed PTSD, depression, anxiety, and stress levels in 119 first responders in a medium-size city in the Midwest prior to and immediately following an 8-week virtually delivered psychological readiness training (PRT) intervention program. The curriculum of the PRT combined two psychological fields of study: positive psychological capital, or PsyCap, and cognitive behavior therapy, or CBT. Pre- and postsurveys included the Civilian Self-Report PTSD Scale (DSM-V) and the Depression, Anxiety, and Stress 21-question Scale.

Results of the study indicated that for each of the four mental health issues tested, the PRT had a significant impact on self-reported symptoms. The most significant impact recorded postintervention was on post-traumatic stress disorder. Second to PTSD, stress

levels were significantly lowered following the PRT. Depression levels decreased slightly less than stress levels, and anxiety was lessened significantly postintervention as well. The implications of these results on the study of intervention methodologies in cases of trauma recovery are far-reaching. For first responders who are repeatedly exposed to traumatic incidents, many times with little time between events to recover from the previous one, having a training tool that alleviates the mental injury provides a new approach to mental resilience.

## Interpretation of the Findings

First responders from both professions reported experiencing symptoms of PTSD, depression, anxiety, and stress ranging from mild to extremely severe prior to the PRT intervention. Postintervention, every participant reported experiencing alleviation of those symptoms. In Figure 4, the diagnostics reported for participants who indicated experiencing moderate to extremely severe symptoms are outlined pre- and post-PRT intervention. Of those who began with acute PTSD levels, only three remained in the acute category, and their symptom scores decreased by at least 15 points, placing them well inside the DSM-V cutoff between acute and subthreshold levels. Even those who reported experiencing mild symptoms pre-PRT intervention experienced a decrease in their symptomology. None of the participants, regardless of critical incident exposure within the 90-day timeframe pre- and postintervention, retained preintervention levels, and none of them experienced an increase in symptomology.

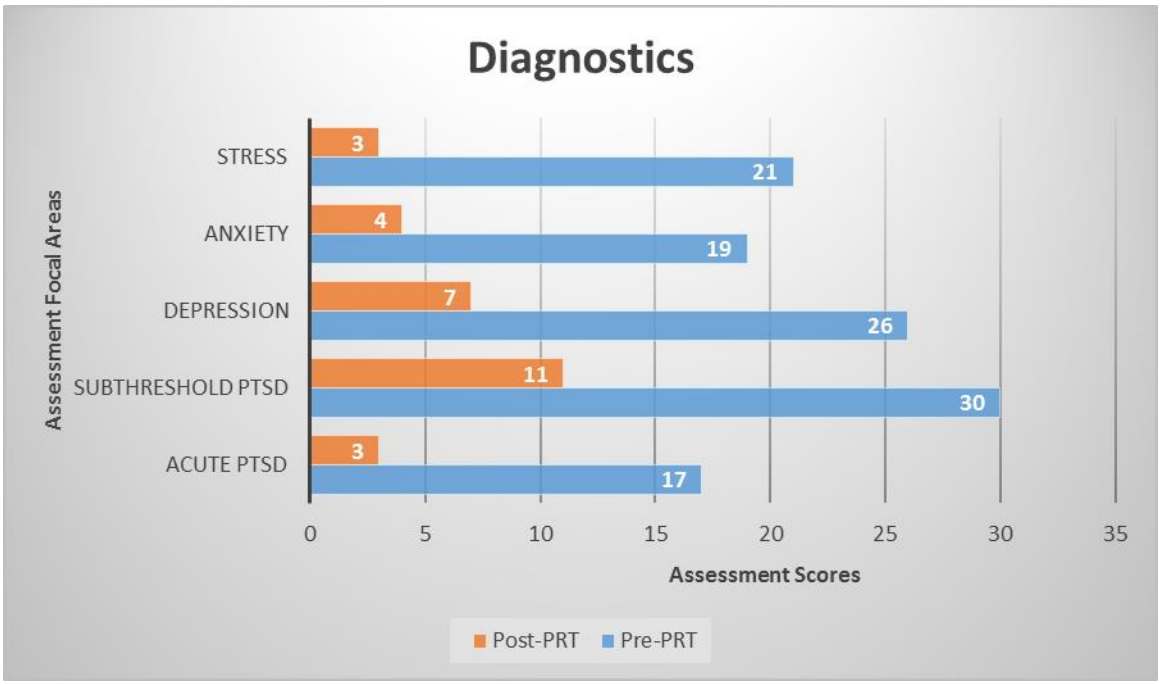


Figure 4. *Moderate to extremely severe symptoms reported pre- and postintervention.*

According to the DSM-V, subthreshold PTSD indicates a score between 17 and 32 on the PTSD-Civilian self-reporting scale. Subthreshold PTSD is considered to be the best indicator of who is at-risk for imminent danger of acute PTSD due to any significant stressor. Although there were three acute PTSD participants listed after training, their scores were at the cutoff between subthreshold and acute. The standards set by the National Center for PTSD stipulate that patients who score between 28 and 33 require consideration of the respondent's setting prior to making a provisional diagnosis (Weathers et al., 2013). Therefore, those remaining in the acute PTSD category were tested again 2 weeks post-intervention. At Time 2, all three scores decreased again, placing them well inside the subthreshold category.

According to the developers of the DSM-V checklist for PTSD (Blevins, Weathers, Davis, Witte, & Domino, 2015) and the developers of the DASS-21 (Lovibond

& Lovibond, 1995) a change in scoring of at least 5 points is considered the minimum threshold for determining whether a patient has responded to treatment, and a change of 10 points indicates that the response is clinically significant. Table 18 highlights the number of participants who fell into the two categories of responding to treatment and clinically significant response.

Table 18

*Improvement Levels Post-Intervention*

| | 5-9 point decrease | 10 point + decrease |
|---|---|---|
| PTSD | 29 | 48 |
| Depression | 22 | 22 |
| Anxiety | 21 | 8 |
| Stress | 26 | 27 |
| Total | 98 | 105 |

## Limitations of the Study

There were limitations that could potentially have impacted the results of this study. One limitation was the time of year the study was conducted. Another potential limitation was internal departmental response to critical incidents that occurred during the training intervention. Planning for each of these limitations was difficult, particularly because the time of year could not be avoided. However, in the case of the critical incident stress debriefing that occurred during the training program, I was able to verify whether there was an impact.

Weather patterns have long been recognized to impact mental health in patients who are struggling with depression, anxiety, and on-the-job or traumatic stress (Bentley, Crawford, Wilkins, Fernandez, & Studneck, 2013). In the Midwest, where the four

seasons bring changes in temperature, a different number of hours of sun access per day, and different precipitation levels, it is difficult to gauge how much a person is impacted by the weather. The PRT intervention began in March, after a particularly light winter and on the brink of spring. However, contrary to the almanac's predictions for the 2016 spring, the weather remained cold and blustery, with a great deal of rain. Spring did not usher in sunny days until the second week of June, at which time the post-PRT intervention results had already been collected. Therefore, the changing of the seasons likely had limited impact on the mental health symptoms reported by the participants.

The second limitation that could have potentially had an impact on the study results was whether there was a critical incident during the training intervention that required a critical incident stress debrief by either the police or fire department. There was one such incident involving the death of an 8-month-old child. The officer who was directly impacted by the traumatic event was not a participant in the study. However, one of his superiors was a participant in the study, and it was his decision to bring in mental health support for his struggling officer. Because the directly impacted officer was not a participant in the study at the time of the critical incident, the likelihood that the critical incident stress debriefing had an impact on participant's mental health symptoms was low. No other debriefings were reported during the time of the study.

## Recommendations

The nature of law enforcement and firefighting as a profession requires a great deal of training as a component of success in the job. Because this is the first study to indicate a statistically significant decrease in the most common mental health problems

experienced by first responders due to psychological readiness training, requiring such training at the recruit level will likely have a positive impact not only on the individuals tasked with protection and service but on the culture of first responders as a whole. Increased awareness of the signs and symptoms of post-traumatic stress is a necessary first step in preventing the body's natural reaction (post-traumatic stress) from becoming a disorder (PTSD). Educating recruits at the onset of their careers gives them a sense of control over their well-being and promotes mental resistance to PTSD, depression, and anxiety while providing them with tools to manage stress before it becomes a physical problem.

In addition to providing recruits with psychological training, offering veterans of the profession training credits for completing the PRT could have lifesaving implications. During the month of April 2016, three law enforcement officers and one firefighter in the United States committed suicide. Suicide prevention carries with it similar stigma as being diagnosed with a mental health issue, but with the use of psychological readiness training, delivered virtually and accessed anonymously, departments all over the world can give each first responder a fighting chance at a healthy, productive life.

Proactively training first responders also mitigates risk. Citizens are filing complaints against first responders at alarming rates (Associated Press, 2015). Some complaints lack validity, but others are compelling and can be traced directly to the state of mind that law enforcement officers and firefighters are in when they respond to a call for help. When someone struggles with PTSD, depression, anxiety, or stress, everything from physiological reactions to the ability to empathize is skewed (Bale, 2006). Training

first responders to measure their psychological states against what is considered healthy is an essential first step to recognizing a problem long before their symptoms become so debilitating that they cannot complete the duties of their job without being a danger to the citizens they want to protect.

Future research is recommended to determine the longitudinal impact of the PRT intervention on PTSD, depression, anxiety, and stress symptoms. Because substance abuse is often frequently comorbid with PTSD and is considered particularly problematic within the first-responder community, research into the efficacy of a PRT intervention could provide further insight and recommendations for treatment. Testing of participants at regular intervals postintervention would provide documentation specific to the length of time that the training impacts symptomology. Finally, duplicate studies in other cultures in which virtual training is either commonplace or rare would provide the field of crisis intervention with valuable data on the delivery method.

## Implications

The implications of the results shown in this study are directly leveled at the culture of the first-responder profession. Leaders inside police departments, central dispatch organizations, military organizations, hospitals, and the fire service have made PTSD awareness a matter of importance over the past 5 to 10 years. Annual conferences and regional meetings have included discussion on understanding PTSD, recognizing the signs and symptoms, and the value of debriefing shortly after a critical incident occurs. However, no research had been done to support the need for proactive psychological training in ensuring the mental health and well-being of first responders. With the

completion of this study, leaders within the first-responder community must act on their promises and provide psychological resistance training to the men and women who choose to serve others first.

The increase in terroristic behavior all over the world and the nature of terrorist organizations like ISIS has resulted in a deeper traumatic experience for first responders and a broader impact level (Ramchandani, 2012). For instance, the attack on the Orlando nightclub that resulted in more than 100 killed and wounded that was perpetrated by ISIS supporter Omar Mateen, was initially responded to by patrol sergeants. Patrol sergeants are law enforcement officers with fewer than 5 years of experience on the job. Those who killed the terrorist were veterans of the department, but the impact of such a traumatic experience was felt by the entire first-response community in Orlando. The psychological fallout has yet to be determined but will likely be similar to the fallout after the Baltimore riots, in which the entire police department was impacted in one way or another. Waiting for the symptoms to set in before requiring someone to seek treatment is neither necessary nor responsible.

## Conclusion

For decades, reactive therapies have been used to alleviate the symptoms of PTSD, depression, anxiety, and stress. Since the terrorist attacks of September 11, 2001, attention has focused on the psychological ramifications of traumatic exposure in first responders. Initiatives to increase awareness of PTSD and its symptoms have slowly crept into the military, law enforcement, and fire service culture, but none of those initiatives have focused on prevention. For first responders, the risk of developing a

mental illness throughout the course of their careers is high. Many do not realize that the symptoms they experience can be traced back to repetitive exposure to trauma, and so they go through life with a misguided belief that they have to figure out a way to live with the ghosts of the past. Far too often, suicide is preferable to a life of substance abuse and isolation.

For the first time in crisis intervention research, there is evidence that proactive psychological training works to strengthen the brain's ability to resist mental illness. Using the techniques found in cognitive behavior therapy and the tools created through the development of positive psychological capital, first responders can be taught to identify a potential problem before it becomes debilitating and to properly process critical incidents as they occur rather than pushing them into the back of their minds, trying to forget. By developing psychological readiness from a training initiative, first responders are receiving therapeutic assistance before a diagnosis is needed.

The field of first response if fraught with traumatic impact. The brave men and women who choose it as a profession deserve the best training available to ensure their safety and well-being. Current training and development are used to strengthen their bodies to withstand the physical requirements of the profession and their minds to effectively maneuver through challenges and obstacles to safety. With these new data comes the responsibility to include psychological resistance training for first responders so they have a fighting chance to maintain their mental strength, health, and well-being long after they retire from the profession.

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# Appendix A: DASS-21

**DASS 21** *Name:* *Date:*

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

0 Did not apply to me at all
1 Applied to me to some degree, or some of the time
2 Applied to me to a considerable degree, or a good part of time
3 Applied to me very much, or most of the time

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

# Appendix B: PTSD Checklist-Civilian Version

## PTSD CheckList – Civilian Version (PCL-C)

**Client's Name:** _____

Instruction to patient: Below is a list of problems and complaints that veterans sometimes have in response to stressful life experiences. Please read each one carefully, put an "X" in the box to indicate how much you have been bothered by that problem *in the last month*.

| No. | Response | Not at all (1) | A little bit (2) | Moderately (3) | Quite a bit (4) | Extremely (5) |
|---|---|---|---|---|---|---|
| 1. | Repeated, disturbing *memories, thoughts, or images* of a stressful experience from the past? | | | | | |
| 2. | Repeated, disturbing *dreams* of a stressful experience from the past? | | | | | |
| 3. | Suddenly *acting* or *feeling* as if a stressful experience *were happening* again (as if you were reliving it)? | | | | | |
| 4. | Feeling *very upset* when *something reminded* you of a stressful experience from the past? | | | | | |
| 5. | Having *physical reactions* (e.g., heart pounding, trouble breathing, or sweating) when *something reminded* you of a stressful experience from the past? | | | | | |
| 6. | Avoid *thinking about* or *talking about* a stressful experience from the past or avoid *having feelings* related to it? | | | | | |
| 7. | Avoid *activities* or *situations* because they *remind you* of a stressful experience from the past? | | | | | |
| 8. | Trouble *remembering important parts* of a stressful experience from the past? | | | | | |
| 9. | Loss of *interest in things that you used to enjoy?* | | | | | |
| 10. | Feeling *distant* or *cut* off from other people? | | | | | |
| 11. | Feeling *emotionally numb* or being unable to have loving feelings for those close to you? | | | | | |
| 12. | Feeling as if your *future* will somehow be *cut short*? | | | | | |
| 13. | Trouble *falling* or *staying asleep*? | | | | | |
| 14. | Feeling *irritable* or having *angry outbursts*? | | | | | |
| 15. | Having *difficulty concentrating*? | | | | | |
| 16. | Being *"super alert"* or watchful on guard? | | | | | |
| 17. | Feeling *jumpy* or easily startled? | | | | | |

**PCL-M for DSM-IV (11/1/94)** Weathers, Litz, Huska, & Keane National Center for PTSD - Behavioral Science Division

Appendix C: Letter of Intent to Participate ~ South Bend Fire Department

Steve Cox, Chief
South Bend Fire Department
1222 South Michigan Street
South Bend, IN 46601
574-235-9255

March 8, 2015

Dear Renee Kosor,

Based on my review of your research proposal, I give permission for you to conduct the study entitled Testing a Psychological Readiness Training Intervention on PTSD, Depression, Anxiety, and Stress in First Responders within the South Bend Fire Department. As part of this study, I authorize you to introduce the study to the officers within the department, provide them the opportunity to participate in the training intervention, request completion of pre- and post-tests, collect training packets, and compile results for a follow-up meeting with key leaders within the department. Individuals' participation will be voluntary and at their own discretion.

We understand that our organization's responsibilities include providing vocal support for the study's potential value, a roster of all fire personnel, a meeting place for the study introduction as well as a location for the collection of consent forms. We reserve the right to withdraw from the study at any time if our circumstances change.

I confirm that I am authorized to approve research in this setting and that this plan complies with the organization's policies.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the student's supervising faculty/staff without permission from the Walden University IRB.

Sincerely,

Steve Cox, Chief
South Bend Fire Department
574-325-9255

Appendix D: Letter of Intent to Participate ~ South Bend Police Department

Ron Teachman, Chief
South Bend Police Department
701 West Sample Street
South Bend, IN 46601
574-235-9201

March 8, 2015

Dear Renee Kosor,

Based on my review of your research proposal, I give permission for you to conduct the study entitled Testing a Psychological Readiness Training Intervention on PTSD, Depression, Anxiety, and Stress in First Responders within the South Bend Police Department. As part of this study, I authorize you to introduce the study to the officers within the department, provide them the opportunity to participate in the training intervention, request completion of pre- and post-tests, collect training packets, and compile results for a follow-up meeting with key leaders within the department. Individuals' participation will be voluntary and at their own discretion.

We understand that our organization's responsibilities include providing vocal support for the study's potential value, a roster of all police personnel, a meeting place for the study introduction as well as a location for the collection of consent forms. We reserve the right to withdraw from the study at any time if our circumstances change.

I confirm that I am authorized to approve research in this setting and that this plan complies with the organization's policies.

I understand that the data collected will remain entirely confidential and may not be provided to anyone outside of the student's supervising faculty/staff without permission from the Walden University IRB.

Sincerely,

Ron Teachman
Chief of Police
South Bend Police Department
574-325-9201

Appendix E: Curriculum Vitae

Renee Kosor | South Bend, IN 46635 | renee.kosor@waldenu.edu

## Education

Walden University, PhD in Human Svcs: Crisis Intervention Strategies Jan 2017
Currently active ABD student, GPA: 4.0
Tau Epsilon Alpha Honor Society, Presidential Nominee
*Dissertation*: Testing a Psychological Readiness Training Intervention on PTSD, Depression, Anxiety, & Stress in First Responders

Liberty University, MBA in International Business May 2010
Graduated Magna cum Laude, GPA: 3.67

Liberty University, Bachelor of Science in Multidisciplinary Studies June 2007
GPA: 3.43

Military DINFOS, Print & Broadcast Journalism and Public Affairs May 2000
Distinguished Honor Graduate, GPA: 4.0

## Authored Works, Public Speaking Engagements, Editing Projects

All work represented by Word Wise Media: Steven Hutson, Owner & Literary Agent

**Novels:** Protecting our Heroes Minds, A Sailor's Burden, Young Knights
**Magazine Articles:** Next Generation Leadership, Building a Company Resume, Immersive Training, Bipartisan Leadership, Psychological Capital: The Combatant of Workplace Anxiety
**Speaking Topics:** Beware the Frozen Heart, Hope beyond the Fantasy, Goal-Mapping the Future, Five Keys to Professional Speaking, Music as a Bridge between Generations, The Resilient Mind, Learning Optimism, Social Media in Marketing & Branding, PTSD outside the Service, Branding our Schools, Admissions Policies that Work
**Editing Projects:** The Lean, Sustainable Supply Chain by Robert Palevich ~ Pearson Publishing

## Experience

**Arkansas Tech University 2012 - Present**
**Adjunct Professor**
Tasked with training 90-100 undergraduate students per quarter on the fine art of Business and Professional Speaking utilizing email, Blackboard, Tegrity video classes, and web-based instruction. As the primary Business and Professional Speaking instructor, it is my responsibility to train assistant instructors and oversee student special needs, requests, or complaints. To date, the feedback given from former students has increased the popularity of my course so much that the university has more than doubled its offerings of my class in the Speech program.

Renee Kosor | South Bend, IN 46635 | renee.kosor@waldenu.edu

Responsibilities

**Successfully manage 80%+ pass-rate for undergraduate speech students.** Utilizing a newly-instituted online development tool, students from all over the country can engage with each other and their professor regularly via video recording.

Accomplishments

- Identified pattern of students who were dropping the course due to technical difficulties and instituted alternative assignment submission program as well as increased technical support from the university.
- Aligned the formats of 8 & 16-week courses in Blackboard and updated the system accordingly.
- **Student attrition rate <15% with a 100% positive feedback loop.** Course feedback consistently points out the engaging nature of my course and fewer students are withdrawing from the class due to increased instructor and technological support.

**Metamorphosis 2004 – Present**

***Business Development & Marketing Manager*** ***2004-2014***

1. Create and implement marketing and branding program to include the use of social media and speaking engagements.
2. Develop annual sales goals, prepare program budgets including travel, development and delivery
3. Identify potential clients through relationship building with industry executives, particular focus given to sales forces/departments.
4. Conduct initial assessments to determine custom training needs and respond with professional presentations, proposals and long-term contract.
5. Contract negotiations to advance the initial impact of the proposal to include additional training opportunities such as annual reviews, individual coaching and executive development plans.
6. Develop and maintain long-term business relationships with senior managers and c-level executives for continuous feeding of the contract pipeline.
7. Assess effectiveness of training initiatives as a component of contract maintenance and renewal.

***Editor: Undergraduate, Master's, and PhD Research Papers*** ***2004-2010***

1. Review and edit, using Microsoft Office programs, research papers for college students attending Liberty University, Purdue, Bethel, University of Southern Indiana, University of Michigan, and Western Michigan University

Renee Kosor | South Bend, IN 46635 | renee.Farmer@waldenu.edu

***Organizational Psychologist, Master Facilitator*** ***2007-2014***

1. Create leadership development training programs for front-line supervisors, mid-level managers, and senior management.
    a. Supervisory Development Program
    b. Performance-Based Leadership Tools
    c. Essentials for First-Time Supervisors
    d. Leading the Engaged Team
2. Create communications development training programs for front-line supervisors, mid-level managers, and senior management.
    a. Employee Engagement
    b. Candid Conversations
    c. Engaging Presentations
    d. Motivational Speaking
3. Create training programs customized to the needs of the client and level of learner.
    a. Business Acumen
    b. Behavioral Interviewing
    c. Executive Presence
    d. Accountability 360-degree review for mid- to executive-level managers
    e. Upward Feedback Program for supervisors with > 2 direct reports
4. Master Facilitator
    a. Classroom training
    b. Individual coaching
    c. Train-the-Trainer & Delivery Assessment

***Ad Hoc Organizational Development Researcher & Trainer*** ***2014-Present***

1. Conduct organizational research to determine training program, leadership development effectiveness and sustainability.
2. Determine where curriculum or program implementation requires adjustment
3. Report findings of effectiveness and suggestions for improvement to boards of directors, c-level executives, senior managers, regional sales teams, etc.
4. Publish research findings in journals and appropriate trade magazines

**Howe Military School** **2008 – 2010**

***Administrator, Female Program***

Recruited and given the challenge of determining the viability of the female program. Upon arrival, female enrollment was at its lowest point, with only six students enrolled for the 2008-2009 school year. I immediately began an assessment of the program curriculum and the needs of the interested parents and students. After adjusting the program deliverables and updating the program offerings, enrollment increased from six to thirty-six in three months.

Renee Kosor | South Bend, IN 46635 | renee.kosor@waldenu.edu

**Regional Detention Support Services** **2002 – 2008**

***Youth & Family Interventionist***
Working for the State of Michigan's juvenile justice system, I was assigned to act as program developer and daily monitor for young people with legal issues. The focus of the program was to bring together the family, the school, and the justice system to positively impact the growth and development of young people who were acting out. In a short time, I gained a reputation for being able to help the most difficult young people and ultimately carried the heaviest caseload of all RDSS staff.

**United States Navy** **1999 – 2002**

***Journalism & Public Affairs***
As a military journalist, it was my responsibility to create and develop factual and feature articles for print and broadcast across the military. Additionally, I worked as a public affairs officer responsible for building a relationship between the local civilian population and the military installations I was assigned to. Speech writing, photography, and web design rounded out my daily responsibilities.