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The Effects of Perceived Stress on First Responders' Job Performance While Moderating for Self-Efficacy

Diane Craig
Walden University

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Walden University

College of Management and Human Potential

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Diane Craig

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Walden University
2025

Abstract

The Effects of Perceived Stress on First Responders' Job Performance While Moderating
for Self-Efficacy

by

Diane Craig

MPhil, Walden University, 2020

MPA, University of La Verne, 1991

BS, California State University, Los Angeles, 1976

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Industrial Organizational Psychology

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Abstract

Stress in the workplace results in substantial economic losses for U.S. organizations. The effects of perceived stress on reducing the job performance of first responders continue to be a concern for administrators in emergency response management. Grounded in self-efficacy theory, the purpose of this quantitative correlational study was to examine the moderating effects of self-efficacy on the relationship between perceived stress and job performance among U.S. first responders. The sample comprised 78 men and 65 women ($N = 143$) from professional response agencies in the United States. They completed the Perceived Stress Scale, Endicott Work Productivity Scale, and the General Self-Efficacy Scale. The Spearman's rho correlation between perceived stress and job performance was statistically significant, $r(143) = .41$, 95% CI [.26, .54], $p < .01$, indicating a moderate positive relationship. A multiple regression analysis including the interaction term (perceived stress \times self-efficacy) was also significant, $F(1, 139) = 34.34$, $p < .001$, determining that self-efficacy moderated the relationship between perceived stress and job performance. Understanding this relationship can help first responder administrators create training programs and support systems to prepare first responders to manage the effects of perceived stress. The implications for positive social change include the potential for emergency response managers to establish policies and procedures that mitigate stress while enhancing the quality of work life for all U.S. first responders.

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Chapter 1: Introduction

First responders suffer from the effects of stress causing efficiency to decrease during job performance. First responders experience occupational cumulative stress because of repeated traumatic encounters due to the nature of the job. Some first responders react to stress by participating in increased consumption of alcohol, increased frequency of smoking, high levels of absenteeism, and high levels of turnover. Although all first responders receive training when preparing for first responders' duties, some first responders experience cumulative stress because of constant traumatic incidents such as the tragic deaths and loss of coworkers during terroristic threats and events. The focus of this study is to examine the relationship between perceived stress and job performance while moderated by self-efficacy and aimed at helping first responders regain control of any physiological and psychological imbalances resulting from traumatic experiences.

Background of Study

According to Cacciatore et al. (2011), emergency management in the United States required skilled first responders when responding to a variety of emergency situations such as domestic violence, traffic incidents, and caring for persons who experienced the effects of a mental disturbance. Cacciatore et al. argued that in recent years, because of the change in the scope of duties, training for first responders in the United States was designed for handling the dramatically revolutionized responsibilities for the 21st century. Training was enhanced to match the expanded responsibilities of current first responders such as providing life-saving efforts by emergency medical

technicians (EMTs) and coordinating disasters scenes. Cacciatore et al. found that more responsibility led to higher levels of stress and strain that affected first responders' abilities when performing their duties.

Symptoms generated by stress experienced by individuals included avoidance, fear of recalling past exposure to people, places, and sensations associated with traumatic events (Baldwin, 2013). Baldwin (2013) found that other stress symptoms included the hyperarousal of the autonomic nervous system and interruptions of individuals' sensory functions. Hyperarousal of the autonomic nervous system is an involuntary shift in the body's state of normal balance and function to a state of continuous activation (Baldwin, 2013). The condition is usually in preparation for an encounter with eminent danger. Experiencing the interruption of the sensory motor functions indicated physiological changes that impaired signals from the brain controlling bodily functions in professionals such as first responders (Baldwin, 2013).

Johnson et al. (2020) argued that a lack of proper training when preparing first responders for coping with the exposure to increasingly traumatic emergencies contributed to the reduction in the quality of job performance for modern-day first responders. For instance, when first responders failed in their attempts to save lives or when those injured at accidents scenes were children, these types of events had long-lasting psychological effects on emergency response professionals. Cacciatore et al. (2011) also found that the psychological effects from trauma often lingered and emotionally incapacitated first responders when recalling events.

Johnson et al. (2020) found the unique work environment associated with emergency response duties contributed to the level of stress professionals experienced. For instance, first responders who perceived a high safety risk while working in a life-threatening environment experienced increased levels of stress. Additionally, Wagner and Martin (2012) found that first responders' stress level increased considerably when the safety of others was at risk for great bodily injury.

Prati et al. (2011) examined whether self-efficacy mitigated stress and quality of work life in rescue workers. Researchers found that maintaining high levels of self-efficacy mitigate stressful work environments rescue workers routinely encounter. Rescue workers with high levels of self-efficacy were able when maintaining control of the environment to make decisions and job tasks effectively.

One of the most recent approaches used as a coping strategy for helping first responders after traumatic events is the critical incident stress debriefing (CISD) that used forums where participants discussed experiences and feelings about traumatic incidents (Johnson et al., 2020). Although various emergency response departments use CISD as a form of intervention, the treatment was not effective for reducing the psychological effects of trauma, or for increasing the physiological balance for all first responders. The effect of perceived stress on job performance continues to be an area of importance for organizational psychologists. Following is a discussion of the problem statement addressing the impact stress has on organizational effectiveness in the form of financial losses and employee performance.

Problem Statement

Professionals experiencing stress in the workplace leads to high economic losses for U.S. organizations. Sawhney et al. (2018) estimated that stress cost U.S. organizations from \$200 to \$300 billion annually and indicated that the United States lost as much as 10% of gross domestic product because of low productivity, healthcare expenses, and lawsuits related to stress. Failure in managing stress can be life threatening and lead to increased morbidity and mortality for professionals whose jobs are inherently stressful, such as first responders (Sawhney et al., 2018). Researchers found that a natural response to trauma and stress in the human body is from a section of the peripheral nervous system known as the autonomic nervous system. Carlton and Gabay (2012) argued that first responders often experience an imbalance in their autonomic nervous system because of excessive traumatic stress experiences, indicating an inability to effectively manage stress and perform duties. The specific problem identified for the study was determining the relationship between the effects of perceived stress on job performance of first responders while moderating for self-efficacy.

Purpose of the Study

The purpose of this survey study was to examine the moderating effects of self-efficacy on the relationship between the independent variable perceived stress, and the dependent variable job performance. Perceived stress was measured by the Perceived Stress Scale (PSS) created by (Cohen et al., 1983). Job performance was measured by the Endicott Work Productivity Scale (EWPS) created by (Endicott & Nee, 1997). The

moderating effect of self-efficacy was measured by the General Self-efficacy Scale (GSES) created by (Matthias et al., 1981). Providing managers with insight related to the effects of perceived stress on job performance and the moderating effect of self-efficacy creates potential for positive social change. Developing training programs to manage stressful work environments while performing at an optimal level can be applied to conditions in other industries with similar performance demands.

Research Questions and Hypotheses

RQ1: Is there a relationship between perceived stress levels measured by the PSS and first responders' job performance measured by the EWPS?

H₀1: There is no relationship between perceived stress levels and first responders' job performance.

H_a1: There is a relationship between perceived stress levels and first responders' job performance.

RQ2: Does self-efficacy measured by the GSES moderate the relationship between perceived stress levels measured by the PSS and first responders' job performance measured by the EWPS?

H₀2: Self-efficacy does not moderate the relationship between perceived stress levels and first responders' job performance.

H_a2: Self-efficacy does moderate the relationship between perceived stress levels and first responders' job performance.

Theoretical Framework

The fundamental principle of self-efficacy theory is the theoretical framework chosen for the study. Self-efficacy theory evolved from the social cognitive theory introduced by Bandura (1997). Bandura described self-efficacy as an individual's perception of their ability for coping with stressful experiences and completing assigned tasks. Bandura argued that the ability of professionals when adapting to an environment is associated with an individual's ability for self-regulating. By utilizing self-evaluation, professionals such as first responders adequately develop the ability for adapting to the stress encountered in the work environment. The self-efficacy theory related to coping with traumatic experiences is a primary component of self-evaluation; therefore, the approach is appropriate as the foundation of the study.

Nature of the Study

Conducting the study required utilizing a quantitative methodology with a correlational design for examining the relationship between perceived stress and job performance while moderating for self-efficacy among first responders. Utilizing a survey method of inquiry allowed for the use of questionnaires when examining the intended sample, professional first responders. The responses obtained from the survey method can be generalized to the population of first responders in the United States (Babbie, 2016).

The quantitative methodology also benefits testing Bandura's (1997) self-efficacy theory when managing occupational stress. Utilizing a survey method is useful for

measuring attitudes of first responders regarding managing stressful work-related experiences, and when utilizing the close-ended questions approach. Ouweneel et al. (2013) found that incorporating increased self-efficacy was useful when predicting student's belief in personal ability that leads to positive outcomes in academic performance. Utilizing a quantitative methodology is beneficial when studying large populations such as first responders, when observing participants dispersed over a large geographical area, and when using a closed ended questionnaire.

Definitions

Critical incident stress debriefing (CISD): A form of intervention that addresses the psychological needs of first responders soon after exposure to a traumatic event. First responders discuss their experiences while supervised by a trained counselor in a forum consisting of peers. The participants described an account of the traumatic event and were provided with an opportunity to discuss the feelings experienced during the incident (Harrison & Wu, 2017).

Hyperarousal Autonomic Nervous System (HANS): The body shifts from a state of normal function to continuous activation, usually in preparation when encountering eminent danger and preparing an individual for self-preservation by fighting or fleeing. The autonomic nervous system usually responds to various stimuli in the body, during a hyperarousal condition, the body functions impacted by stress can cause the body functions to be out of balance (Baldwin, 2013).

Perceived self-efficacy: An individual's belief in the ability to complete the necessary actions required when coping with difficult experiences, perform assigned tasks and attain desired goals. Bandura (1997) argued that belief contributes to the expectation of individuals when meeting desired outcomes and when maintaining composure needed for overcoming obstacles during challenging encounters. Additionally, according to Bandura, individuals who experience a higher level of self-efficacy are likely to achieve higher levels of success based upon determination.

Assumptions, Limitations, and Delimitations

Assumptions

The first assumption is that first responders have experience with the phenomenon of occupational stress resulting from traumatic experiences that affect job performance. The next assumption is that first responders responded truthfully about the nature of their experiences. A further assumption is that first responders believe that there is a relationship between perceived stress and job performance. Mitigating the study assumptions requires utilizing a sufficiently large sample size for observing the phenomenon studied.

Limitations

Some limitations for conducting the study included time, cost, and technology or the inability of some first responders to use computers due to a lack of computer knowledge. Another limitation was the lack of availability of participants due to an emergency response requirement by first responders. A further limitation was the attrition

that could have occurred due to the level of stress some participants experience, causing participants to drop out of the study. Mitigating for the limitations required utilizing a sufficiently large sample size for ensuring study completion.

Delimitations

The study included professional first responders working for agencies in the United States. The participants were male and female first responders who have experienced stress generated from a traumatic event or demands related to first responder duties. Further, the study participants included professionals of various ethnicities, ages, and experience levels.

Scope of Study

The study includes first responder professionals such as EMTs, firefighters, members of law enforcement, mental and medical health professionals working in the United States. Additionally, the study includes first responder professionals from federal and state agencies such as Federal Emergency Management Assistance (FEMA), State Emergency Management Assistance (SEMA), and U.S. military personnel, such as state National Guard units.

Significance of Study

The results of the study are promising for closing the gap in literature and creating awareness aimed at reducing perceived stress among first responders, thereby increasing the effectiveness of first responders when performing emergency response duties. The results provide a meaningful contribution to social change by assisting first responders

when recovering from the effects of work-related stress and for increasing the quality of home and work life (Jeannette & Scoboria, 2008). Managers can use the results of the study to understand how the work environment affects employees such as first responders in large metropolitan areas. Currently there are not enough studies providing insight to help reduce occupational stress among first responders. Members of first responder departments can benefit by understanding the relationship between perceived stress and job performance moderated by self-efficacy.

In addition, the public benefits when first responders maintain a high level of proficiency while providing emergency response services. Further, the results of the study add to the body of knowledge for helping first responders to maintain productivity and provide for managing control of the effects of occupational stress in other populations. Finally, by reducing occupational stress, first responders may benefit by enjoying a higher quality of work/home life balance.

Social Change Implications

The results of the study are promising for closing the gap in literature and creating awareness aimed at reducing perceived stress among first responders, thereby increasing the effectiveness of first responders when performing emergency response duties. The results provide a meaningful contribution to social change by assisting first responders when recovering from the effects of work-related stress and for increasing the quality of home and work life (Jeannette & Scoboria, 2008). Managers can use the results of the study to understand how the work environment affects employees such as first responders

in large metropolitan areas. Currently, there are not enough studies providing insight to help reduce occupational stress among first responders. Members of first responder departments can benefit by understanding the relationship between perceived stress and job performance moderated by self-efficacy.

Summary and Transition

The effects of perceived stress on job performance of first responders continue to be a concern for administrators in the field of emergency response management. Cumulative effects of stress in the United States contributed to absenteeism and turnover and researchers argued that first responders' responsibilities have increased with the modernization of providing emergency response service. Researchers have argued that although first responders have received training for performing first responder duties sufficient training for coping with the effects of stress was not received (Cacciatore et al., 2011).

When first responder duties evolved to include increased responsibilities, additional perceived-stress-related symptoms such as hyperarousal of the autonomic nervous system was noted (Baldwin, 2013). Different forms of interventions used as a coping mechanism were not successful for all first responders. Many first responder departments in the United States used CISD; however, researchers acknowledged that the need for additional methods of intervention exists. Examining the relationship between job performance and perceived stress experienced by first responders provides awareness for administrators of emergency response service (Carlton & Gabay, 2012). The next

section will discuss the relevant literature that highlights the problem identified as the basis for the study. The approach and databases used to find studies for conducting the literature assessment are described.

Chapter 2: Literature Review

The cost expended in the United States by organizations when managing work related stress such as emergency response departments was over \$300 billion (Zhuang, et al., 2017). First responders in large metropolitan cities experiencing stress had disruptions in job performance due to traumatic exposure (Straud et al., 2018). CISD was an established strategy for coping with stress, but CISD was not always effective for all first responders. Harris et al. (2002) examined the CISD strategy in a study using participant satisfaction levels with the coping strategy. The results revealed low levels of satisfaction resulted in increased symptoms of anxiety and depression (Harris et al., 2002). The purpose of the study was to examine the relationship between perceived stress and job performance-moderated by self-efficacy.

I searched the Walden library using the EBSCOhost database for relevant terms to identify available sources that would support the focus of the research. Through the EBSCOhost database, several databases such as PSYCH Info, PSYCH Articles, PSYCH Extra, and PSYCH Books were identified. The results of the searches identified studies related to first responders, self-efficacy, stress, and job performance. The literature review included a range of years from 1981 to 2024, which allowed for considering a historical perspective with a focus on current literature.

Self-Efficacy Theory

The theoretical framework for the study is the self-efficacy theory created by Bandura (1995). Bandura argued that the theory is useful for understanding people's

beliefs, attitudes, and abilities for coping during stressful situations. The theory is relevant to the professional experience of first responders that need a strong sense of self-efficacy for effectively coping with threats. These threats included events such as falling through burning roofs, responding to traffic accidents with injuries or major disasters, and then having the ability to return to work without fear of personal safety. Prati et al. (2011) found that consistent with the social cognitive theory, self-efficacy was useful for determining people's reaction to stressful situations based on an assessment of abilities for coping with stressful events.

Emergency workers such as first responders need a strong sense of belief in their own skills and knowledge about using emergency techniques in times of trauma and stress. The challenges that first responders encountered routinely while performing job related duties are sometimes magnified due to the inherent dangers associated with the profession (Setti & Argentero, 2014). Increasing self-efficacy was effective for navigating the responsibilities of emergencies such as extinguishing fires and performing life-saving efforts resulting from injuries when rescuing people (Lambert et al., 2012).

Bandura (2009) found that developing a high level of self-efficacy occurred because of people's beliefs and skill level. Lambert et al. (2012) found that there was a link between self-efficacy and coping among first responders and their abilities when navigating extreme demands and managing work related stress. Self-efficacy was not just useful for personal efforts, but also among group efforts such as working in a firefighting

company, indicating that first responders often benefitted from collective self-efficacy when operating in a team setting.

Bandura (1997) suggested that collective self-efficacy during group exercises became necessary for successfully completing tasks such as controlling emergencies. The nature of emergency response work required large groups working as emergency response professionals to support each other's self-efficacy vicariously, when accomplishing assignments during critical incidents. Prati et al. (2011) argued that failure in supporting each other in groups negatively affected the quality of work life among rescue workers including first responders. Prati et al. argued that stressors caused by trauma negatively affected the collective efficacy of work groups, leading to low levels of job satisfaction.

The principles of the self-efficacy theory suggest that by increasing self-efficacy, individuals were more capable of managing in adverse conditions in different ways (Conner, 2015). The findings contributed to an understanding of the effects of self-efficacy on job performance in four ways. These four principles associated with self-efficacy affecting people's attitudes were (a) vicarious experiences, (b) tasks mastery, (c) social persuasion, and (d) emotional conditioning (Conner, 2015). The following sections are discussions on the effects of each self-efficacy principle and the effect of each principle on people's attitudes. A discussion of the effects of vicarious experience for increasing self-efficacy is next.

Vicarious Experience

When individuals observed others completing difficult tasks, the experience contributed to the individual's belief that by using the same level of effort, accomplishing similar goals was attainable (Bandura, 2009). Scopelliti et al. (2013) found that an association existed between self-efficacy of individuals observing other individuals and completing difficult tasks. The vicarious experience was useful for developing a stronger belief in one's own abilities when overcoming challenges. Bandura (2009) found that through observing others, individual's belief was reinforced and supported the belief that people could complete desired tasks even when the tasks were difficult. Bandura argued that proximity to a model had an influencing effect on individuals. In addition, when individuals vicariously judged the performance of others to assess their levels of performance proficiency, their self-efficacy increased (Scopelleti et al., 2013).

Mastery Experiences

Bandura (2009) found that mastery incorporates individuals believing strongly in their ability to complete attempted tasks. An essential aspect of accomplishing goals involves possessing the necessary skill to succeed. Scopelliti et al. (2013) found that a significant amount of control was essential for mastering difficult tasks. The researchers discussed that self-efficacy was influenced by the individual's proximity to those observed and that there was a link between individual's perception of control and mastery. Self-efficacy enhanced through mastery experience required a concentrated effort. Bandura (2009) argued that mastery required developing an individual's behavior

and a cognitive process for enabling and identifying the appropriate choices necessary when navigating life challenges.

Emotional/Psychological State

In a study involving a training program for student nurses, Conner (2015) found that harmful conditions affecting the individual health and welfare of students resulted from an inability to cope with stressful academic and work environments. When adverse conditions remain untreated, the stress generated affected the student's ability when performing tasks required in the training program and negatively affected the emotional state of students.

Stress impacting first responders' job performance results in adverse effects on the ability for some first responders to complete their duties proficiently (Straud, 2018). Bandura (2009) argued that the emotional state of individuals affected the self-efficacy of those individuals, manifesting a physical response. Additionally, Bandura identified mood as an influencer of self-efficacy. The various factors that individuals considered when determining their individual self-efficacy included past experiences.

Conner (2015) argued that students completing a nursing training program experienced higher levels of self-efficacy more frequently when compared to those students who possessed low levels of self-efficacy. Students possessing high self-efficacy developed the skills needed for navigating the challenges of the program and for attaining the educational training goals. Students with low self-efficacy levels, who were not

successful at completing the training program requirements , chose negative approaches to coping with stress such as substance abuse and self-criticism (Conner, 2015).

Social Persuasion

Social persuasion contributes to a person's belief that they possess the ability needed when performing tasks proficiently. Verbal communication can provide psychological and physiological cues that influence other individuals' efforts to overcome reservations about completing a goal (Bandura, 2009). Conner (2015) found that people who received positive reinforcement experienced increased self-efficacy. When individuals were exposed to negative forms of persuasion, less energy was used to overcome difficult encounters. The results of this study are important for the current study in providing an understanding of the association between emotional state and how self-efficacy affects performance.

In a 2017 study, De Clercq et al. (2018) found that self-efficacy contributed to good health and general well-being of individuals who believed they maintained some control over a stressful event. Researchers found that the physiological display of response to stressful encounters was less prevalent in people who perceived they were in control over the adverse event in their environment than those individuals who believed they lacked control over the same events (Brown et al., 2012).

Stress and Stress Management

Sawhney et al. (2018) conducted a study focusing on approaches used for managing work related stress and the resulting psychological symptoms experienced by

first responders. The researchers discussed how the effects of stress caused by exposure to traumatic events affect the job performance of professionals such as first responders and acknowledged the significance of providing care for first responders exposed to traumatic incidents. The cost to organizations in the United States has climbed to \$300 billion, resulting in employee absenteeism, or short- and long-term disability due to stress-related trauma exposure (Sawhney et al., 2018).

Sawhney et al. (2018) posited that first responders work in atmospheres that expose them to “traumatic” and “occupational stressors” (p. 443). Traumatic stressors can occur in a first responders’ work environment when they perceive danger to their personal safety. Occupational stressors can generate for example when first responders experience a disruption in their environment that impacts their ability to perform effectively and can be further depleted by insufficient rest (Sawhney et al., 2018). Identifying the strategies useful in moderating symptoms originating from exposure to first responders’ work environment provides insight for managers when creating training to assist first responders cope with work related stress and return to duty after suffering from impairment influenced by stress (Sawhney et al., 2018).

Sawhney et al. (2018) study identified the significance of providing opportunities for first responders to have access to coping strategies while engaged in their work environment. A positive association was identified between work stress first responders experienced and the psychological symptoms they suffered such as inattention. Beneficial coping strategies available for first responders while on duty involved providing an

environment where first responders could relieve stress by having a quiet environment to disengage and communicate with peers. The study results may apply to other work environments where duties are performed in a stressful work atmosphere (Sawhney et al., 2018).

Additionally, Sawhney et al. (2018) argued that first responders would benefit from receiving treatment from a critical incident stress experienced by first responders and job performance moderating for self-efficacy would be beneficial in preventing further effects of job-related burnout caused by the phenomenon.

Other researchers such as Straud et al. (2018) examined the effect of resilience in managing stress experienced by first responders such as firefighters, paramedics, and EMTs. Researchers found that emergency response professionals who were required to perform the highly specialized skills of their profession suffered from posttraumatic stress disorder (PTSD) as they strived to meet increased demands for service to the public (Straud et al., 2018).

Additionally, Straud et al. (2018) described resiliency as an individual's ability to cope with adverse conditions by adapting to a stressful work environment. Resilience was cited as a mediating factor for first responders who experienced the cumulative effects of frequent exposure to traumatic contacts while performing their duties. Researchers noted that with high levels of resilience professionals experienced less sleep interruption and demonstrated less depression or anxious behaviors. Resilience provided for some first

responders having the ability to return to their duties with reduced impact on their ability to perform those duties (Straud et al., 2018).

Stress and Job Performance

Job stress, considered by organizations as one of the greatest demands placed on organizational effectiveness occurs when work demands exceed the employee's ability to manage the workload or feel a lack of control in the work environment (Ekienabor, 2019). Ekienabor (2019) discussed the impacts stress had on productivity resulting from poor time management or the inability to understand specific job requirements. Organizational management also has responsibility for supervising employees and providing guidance in meeting organizational goals (Ekienabor, 2019).

In a 2016 study, Okeke et al. examined how stress impacts job productivity in a population of Nigerian banking employees. The study's theoretical foundation was based on person environment fit theory, discussed by Caplan (1987), who subscribed to accessing the compatibility of employee characteristics and their work environment when making assignments. Researchers posited that by placing employees in assignments where they are most compatible, the resulting job performance may be positively influenced and realized in the form of a benefit to organizational effectiveness (Caplan, 1987).

Stress occurs when individuals lack the ability to manage conditions in their environment that are out of balance and can create an overwhelming effect. Stress is experienced in two forms and is generally categorized as *eustress*, or good stress, and

distress, or bad stress (Okeke et al., 2016, p. 39). Eustress can occur in the work environment when employees are charged with completing tasks associated with work projects and meeting demanding deadlines. In meeting those deadlines, employees can experience a sense of accomplishment resulting in demonstrated loyalty to the organization (Okeke et al., 2016).

Distress experienced by employees is manifested when maintaining control of changing conditions in the work environment is not available to them. The cumulative effects of bad stress if not resolved are sometimes realized in the form of psychological and physical impairment. Some employees were incapable of managing their work conditions, resulting in stress, increased absenteeism, and poor work performance. The physical impairment experienced by some employees was seen in the form of increased blood pressure and related heart problems (Okeke et al., 2016).

Okeke et al. (2016) found that work productivity was positively related to stress and controlling the negative effects of stress rests with management. Okeke et al. discussed management's responsibility for acknowledging that work outcomes are not limited to employee performance, but it should be an organizational concern. It was recommended that management take a proactive approach to determine employee perception of how management values their contribution to the organization. When assignment decisions are made, an effort to assign employee work tasks based upon demonstrated ability should be prioritized. Professional experience and job tenure should also be given consideration.

When management establishes organizational goals and employee performance expectations, it should provide employees with easily perceived directions to better manage their work environment and a sense of control which can affect stress levels (Okeke et al., 2016). This study relates to the current study in that the effects of perceived stress on job performance and job productivity were examined.

In a 2016 study, Banerjee and Metha found that teachers in India experienced the effects of occupational stress resulting in reduced levels of job performance and job satisfaction. Workplace stress generated from the work environment was evidenced by tardiness to work, increased errors when completing job tasks, absenteeism, and increased job attrition. The effects of stress experienced by employees can manifest physiologically in the form of hypertension and high cholesterol, and psychologically in the form of aggressive behavior and depression. Poor morale contributed to poor relationships with clients and increased costs were generated by sick pay and replacement cost for creating substandard products. Specialized training was recommended for assisting employees with skills to cope with the effects of stress (Banerjee & Metha, 2016).

In a 2015 study, Sharma found that employees in the automobile industry in India experienced occupational stress. Management acknowledged their responsibility for being aware of the work atmosphere contributing to the well-being of the employees. The work demands requiring employees to devote significant number of hours at the organization resulted in some employees experiencing occupational stress with symptoms

including obesity and heart complications. A reduction in productivity and work quality was also noted (Sharma, 2015).

Jo et al. (2018) reviewed how on-duty traumatic experiences impact PTSD amongst professional firefighters in South Korea. Symptoms resulting from exposure to traumatic events and culminating in PTSD in prior studies included “hyperarousal, avoidance, re-experience, and negative cognition or emotion” (Jo et al., 2018, p. 131). The nature of professional firefighters’ duties potentially exposes them to hazardous work conditions.

The study focused on the impact of stressful events that first responders experienced from routine firefighting exposure to stressful events when performing during natural disasters (Lee et al., 2017). Exposure to events involving hazards to first responders’ peers generated symptoms associated with posttraumatic stress. The frequency of exposure to this type of event was associated with the level of intensity of symptoms first responders experienced. The level of intensity of the symptoms was even greater from peer exposure than first responders’ personal exposure to traumatic events (Jo et al., 2018).

Kim et al. (2018) conducted a study involving South Korean first responders. The focus of the study examined whether a link existed between the PTSD first responders suffered and the level of treatment they pursued. First responders are trained to perform even when they are exposed to traumatic events. Their dedication to their profession prepared them to do so without displaying how they were affected by events. Reluctance

for first responders to seek treatment after trauma exposure was generated by a fear of being perceived as weak by their peers (Kim et al., 2018).

Researchers acknowledged that peer influence was commonly experienced amongst the first responder culture. The study revealed a positive link was established between first responders' existing PTSD levels and their lack of pursuit of professional treatment. The choice not to pursue treatment was influenced by a concern for peers and management perception of weakness. A sense of belonging to the organization as first responders working together supported camaraderie and effectiveness amongst personnel. From a management perspective, first responders who continued working through their stress demonstrated strength and could be considered for opportunities of advancement (Kim et al., 2018).

Recommendations for efforts to create an atmosphere that is conducive for first responders to seek treatment for the effects of PTSD include continued education on the importance of receiving treatment. Providing access for communicating in a confidential setting to discuss their PTSD symptoms and incorporating use of the internet to provide options that are effective for aiding first responders in need of assistance was also suggested (Kim et al., 2018).

Meina et al. (2020) conducted a study involving firefighters in Warsaw, Poland. The study focused on determining whether a correlation existed between physiological data used to chart physical changes in firefighters during performance and their indicated stress levels. Firefighters were attached with sensors where data was transmitted while

performing job tasks. Written data were collected in the form of a questionnaire to assess the firefighter's view of their work experience to accompany the physiological data at the completion of a scheduled work period (Meina et al., 2020). The study was designed to aid firefighters suffering with physical and psychological impairment associated with the firefighting profession using an innovative approach. The effects of prolonged exposure to work related stress resulted in instances of insomnia, drug, and alcohol abuse and in some cases where firefighters were unable to cope with stress; it resulted in suicide as discussed in a prior research study (Roberts, 2019).

The results of Meina et al.'s (2020) study revealed that a positive association between perceived stress and physiological data existed. Researchers found that data from the study provided a source of valuable information useful for tracking stress levels in firefighters and could be used in similar professions that were equally demanding. The data were also valuable for consideration in establishing future training designed for managing stress experienced by firefighters (Meina et al., 2020).

First responders work in hazardous and challenging work environments; without the utilization of effective intervention or coping skills, the cumulative effects of work-related stress can result in job burnout (Smith et al., 2019). Smith et al. (2019) examined the link between burnout, the stress first responders experienced through work exposure, and the resulting disruption of family routine related to the firefighting profession. Burnout is described as a psychological condition that can result from exposure to a

demanding work atmosphere perceived by employees as stressful and over time impacts their ability to perform work responsibilities.

Response to burnout was demonstrated in the form of increased absence from work, reasoning difficulty, substandard performance, and a shift away from having a positive efficacious attitude toward meeting work goals. A positive association was identified between perceived stress, and the disturbance of family functions relative to work demands. That link was noted as contributing to burnout experienced amongst a population of first responders in southeastern United States (Smith et al., 2019).

Arbona et al. (2017) conducted a study to examine the perceived stress experienced by Black and Latino male first responders in the southwest region of the United States, and the conditions affecting their stress categorized as “protective and risk factors” (Arbona et al., 2017, p. 422). The duties of professional first responders require them to respond to calls for service that are perceived as stressful because of the potential dangers they confront when protecting citizens and their peers. The cumulative effects of stress are realized in the form of physiological and mental health disturbance and can manifest in vulnerability to illness and substance abuse to manage stress (Arbona et al., 2017).

Arbona et al. (2017) considered how racial distinction may further contribute stress to the emergency response experience of Black and Latino first responders. The researchers posited that members of each ethnic group potentially faced additional stress because of racial discriminatory practices historically encountered by each group. This

observation is accompanied by long work schedules, tenure in position, meeting demands of providing care for their families, and having outside work responsibilities contributed to risk factors. Protective factors that were identified included first responders' educational accomplishment, advancement level, health status, being involved in a committed relationship, having a religious affiliation, and a commitment to service (Arbona et al., 2017).

The results of Arbona et al.'s (2017) study revealed when considering each group of first responders, the percentage of incidents resulting in stressful exposure was slightly greater amongst Latino first responders than Black first responders. The development of stress coping approaches is indicated for managing stress. The racial distinction of first responders and acknowledgment that alcohol abuse was also a prevalent factor associated with stress first responders experienced should be considered when developing an approach to assist first responders with stress management (Arbona et al., 2017).

Smith et al. (2019) examined the association between what was referred to as "the effects of perceived stress, misuse and posttraumatic stress severity" (p. 367). First responders are exposed to potential work-related traumatic events such as performing life-saving efforts for fire victims or their peers. When the cumulative effects of stress resulted from performing those duties was such that first responders were unable to cope, some first responders chose alcohol to manage their impairment. The symptoms were sometimes reflected in the form of re-occurring bad dreams with results indicating that the effects of "perceived stress on probable alcohol misuse and posttraumatic stress on

probable alcohol misuse were statistically significant” (Smith et al., 2019, p. 367).

Research with a focus on identifying an effective intervention for first responders would contribute to an alternative approach to alcohol consumption used for coping with perceived work-related stress (Smith et al., 2019).

First responders’ responsibilities included working to extinguish fires, providing rescues for victims of trauma, and working during long shifts. The demands of performing first responder duties contribute to a stressful work environment sometimes resulting in friction caused by unclear directives from supervisors and communication differences between their peers. Stress experienced from exposure to conditions in the work environment creates concerns for management regarding employee wellness and work productivity (Carpenter et al., 2015).

Soteriades et al. (2019) examined the link between stress and musculoskeletal injuries in a population of Cypriot first responders. Complaints of pain or injury involved several body parts with the most frequent reported injury for back pain (Soteriades et al., 2019). Soteriades et al. found that a positive association was established between first responders’ musculoskeletal symptoms and occupational stress experienced by Cypriot first responders (Soteriades et al., 2019). These findings highlight the perceived stress experienced by first responders and the debilitating effects it has on first responders’ performance.

The professional duties of first responders expose them to work related traumatic experiences that can leave them with cumulative effects resulting in PTSD symptoms.

Armstrong et al. (2016) conducted a study to examine the link between organizational and operational stress experienced by emergency response workers amongst a population of Australian first responders. Operational issues generating challenges that contributed to stress for first responders included participating in major operations requiring many resources and, in some cases, resulted in creating family friction in response to work demands. Organizational assignments required performing administrative responsibilities with the potential to over-extend the abilities of first responders to complete assigned tasks (Armstrong et al., 2016). The study results identified a positive relationship between PTSD symptoms and operational stress. Organizational stress, however, was not shown to be related to PTSD symptoms. The significance of having first responders involved in the organization and feeling a sense of belonging contributes to a sense of well-being and potentially counters the effects of depression created by work demands (Armstrong et al., 2016).

Makara-Studinska et al. (2018) conducted a study involving Polish first responders to examine the association between perceived stress, burnout, and the moderating effects of self-efficacy. Perceived stress over time has the potential to create an environment where first responders suffer from cumulative effects resulting in burnout. Burnout resulting from exposure to work experiences can cause tiredness, a disturbance in relationships and a lack of confidence in individual ability (Makara-Studinska et al., 2018). The researchers found that certain trends were identified amongst the group of first responders in the study. When the exposure to stressful circumstances

increased, that exposure was consistent with a decrease in job satisfaction experienced by the first responders. The first responders possessing less self-efficacy, an association with increased mental health issues was noted. This observation was shown to exist amongst first responders whether their stress levels were high or low (Makara-Studzinska et al., 2018).

Makara-Studzinska et al. (2018) posited that the belief a first responder possessed in his ability to perform his duties was based on self-efficacy. That foundation may promote an increased level of participation and excitement toward performing first responders' job requirements and the development of individual approaches for coping with stress or pursuing career advancing opportunities (Makara-Studzinska et al., 2018).

Smith et al. (2018) conducted a study to understand causes for burnout amongst first responders and found that first responders' ability in a southeast region of the United States to confidently perform their duties was significantly impacted by the effects of burnout. Burnout is described as a condition resulting from the cumulative effects of exposure to a demanding or perceived stressful work environment. Expectations to perform at a high level without sufficient resources, a lack of adequate rest, and work shifts contributed to work life and home conflicts (Smith et al., 2018).

Some conditions generated from burnout experienced by first responders varied from decreased mental acuity, increased safety concerns associated with a lower level of performance and an unwillingness to engage. Self-efficacy possessed by first responders

was noted as establishing a moderating effect on the perceived stress and burnout they experienced (Smith et al., 2018).

Lee et al. (2019) conducted a study to understand how stress coping affects resilience in firefighters. The population for the study included firefighters from a province in Korea. Stress coping is a conscientious effort used for overcoming the effects of stimulating circumstances that overwhelm an individual and can potentially render them without the ability to function (Lee et al., 2019).

Resilience is the condition occurring in response to exposure to life altering incidents that can leave a firefighter feeling stressed. The ability to rebound from the experience and continue performing in a demanding environment after repeated exposure creates resilience. Participating in proactive coping activities such as sharing with peers from work or using relaxation was suggested for assisting firefighters with managing stressful work environments. Lee et al.'s (2019) study results demonstrated a positive correlation exists between stress coping and resilience in firefighters.

In a 2018 study, Jo et al. examined calling in first responders and how it is linked with burnout and the PTSD symptoms they experience. First responders work in a potentially hazardous environment routinely fighting fires, performing rescues for victims of accidents, and aiding people who are impacted by natural disasters (Jo et al., 2018). Burnout is described as a condition employees experience from exposure to stressful work environment that causes fatigue, a negative change in attitude toward work responsibilities and diminished confidence in their ability to perform work related duties.

Burnout is enhanced by repeated exposure to stressful work conditions. When burnout is not addressed, individuals may experience symptoms of PTSD including isolation, depression, anxiousness, and a loss of hope (Jo et al., 2018). Researchers discussed calling is motivated by belief that a person is predetermined to perform a particular role in a work environment. Calling was also considered to provide a positive influence that reduced burnout and PTSD symptoms for individuals engaging in the result of the study showed, “there was a significant positive correlation between PTSD symptoms and burnout” (Jo et al., 2018, p. 120). “Correlation between PTSD symptoms and a sense of calling” was not significant (Jo et al., 2018, p. 120). “Burnout had a significant negative correlation with calling”, (Jo et al., 2018, p. 120).

Milligan-Saville et al. (2017) conducted a study involving Australian first responders to examine a link between the age of a first responders, PTSD, and their associated symptoms. PTSD is a condition sometimes experienced by first responders resulting from the cumulative effects of work-related trauma and symptoms suffered by first responders ranging from increased blood pressure, digestive problems, and re-occurring complaints of muscular pain. Researchers posited that the long-term effects of work conditions experienced by first responders over the length of their career can intensify with age and become the catalyst for a premature retirement (Milligan-Saville et al., 2017).

The study results showed first responders suffering with PTSD symptoms had an increase in complaints of “neurological, gastrointestinal, and cardiorespiratory

symptoms” when compared to those first responders who did not suffer from PTSD (Milligan-Saville et al., 2017, p. 142). Researchers acknowledged that the age process first responders experienced was linked with a reduced level of physical performance, however, “there was no significant interaction between age and the relationship between PTSD and physical health,” (Milligan-Saville et al., 2017, p. 145).

Stress-Related Suicide

In a 2019 study, Roberts examined a comparison of suicide in police officers, other first responders, and members of the military in the United States. With the focus identifying similarities found in each group, the suicide that resulted occurred when individuals demonstrated inability to establish effective coping mechanisms for managing the effects of stress generated from their work environment. Some common influences affecting stress levels in each group included exposure to traumatic events, alcohol abuse, and personal relationships at work and home environments. Some problems that manifested in home relationships were related to work responsibilities created by demands on time at home (Roberts, 2019).

Relationship strain was revealed in Roberts’s (2019) study as prevalent in each group. The professional demand amongst police, first responders and members of the army was linked with incidents of suicide. The need for working long hours and the lack of availability to significant others created by that demand was noted as a source for creating additional strain in existing relationships (Roberts, 2019). Roberts noted in some incidents where individuals had a history of previous psychological treatment for PTSD,

suicide was still the result. Additionally, management's role in some cases contributed to a stressful work environment when organizational goals or directions were not clearly conveyed or when a lack of appreciation for job performance during rating periods was perceived by personnel (Roberts, 2019).

Madison (2014) a management level first responder based in the United States discussed his inability to protect a member of his first responder personnel. That inability was associated with the cumulative effects of stress created by trauma exposure experienced by the first responders (Madison, 2014). Madison reflected that a twenty-year veteran first responder needed assistance. Madison listened to the first responders' experiences before he was transferred to a medical facility where he received treatment from health care professionals for an apparent emotional breakdown (Madison, 2014). The first responder was unable to return to work to perform his duties and was medically retired, although he had access to a continuous support system, the first responder later committed suicide (Madison, 2014).

Madison (2014) discussed the importance of acknowledging his overall responsibility for protection and care for his personnel. That responsibility should not stop personnel receiving fire suppression training, but it extended beyond the logistical or routine operational needs of the department. The emotional and psychological needs of first responders should be treated with the same kind of urgency as emergency preparedness (Madison, 2014).

Madison (2014) learned through the experience that there was a perception amongst first responders that professionals made available to them for treatment, did not fully understand their experience. The lack of understanding created an atmosphere that impacted the effectiveness of the treatment they were provided relative to psychological trauma. Madison emphasized the need of a targeted approach to convey the first responders experience by educating health care professionals specifically in the treatment of first responders suffering from cumulative stress or emotional trauma (Madison, 2014).

Hom et al. (2018) conducted a study to examine the relationship between female first responders' bereavement and suicide exposure. The Centers for Disease Control and Prevention (2017) identified more than 40,000 deaths on an annual basis resulting from suicide which encompassed the general population. Hom et al. included female first responders in a larger group of response workers that were exposed to suicide and suicide attempts as a part of their professional responsibilities. Researchers posited that female first responders were more likely to die from suicide than members of other professions because of the increased risk associated with suicide bereavement experienced through association with the death of a colleague (Hom et al., 2018).

Researchers discussed that bereavement experienced by first responders resulting from the suicide of a colleague increased the possibility of a resulting suicide. The female first responders' experience in the study of being closely associated with a deceased person generated an increase in symptoms such as nightmares, depression, and

sleeplessness. The significance of this observation acknowledged the importance of providing access to intervention for coping with the effects of suicide related bereavement. The results further revealed that a significant link between suicide tendency and professional or personal suicide exposure was not established. However, it was noted that the number of career suicide related plans tripled (Hom et al., 2018).

DeGryse (2012) discussed considerations for assisting members of the firefighting service who are at risk for attempting or completing suicide. Suicide is a problem facing members of the fire service, yet research that tracks statistical data highlighting this condition is limited. Fire departments located in various geographic areas of the United States were considered for their experiences with suicide and suicide prevention efforts (DeGryse, 2012).

This startling reality prompted the Chicago Fire Department to engage in a concentrated effort to assist members of their department and identify a factor that impacted individuals that had fallen to suicide. A model that is helpful for understanding the components of suicide that exist when persons who commit suicide include a feeling that they don't belong, that their existence creates a problem for others, and the individual possesses the ability to complete actions resulting in deadly consequences (DeGryse, 2012).

Antonellis Jr. and Thompson (2012) posited that successful efforts to stop suicide can occur when the distressing conditions experienced by the individual are identified and proper care is provided such as intervention. Factors identified as contributing to

suicide ideation and reluctance for seeking assistance may be associated with a concern for being perceived as weak. First responders without the options to share their experience may feel alienated and withdrawn. Stress generated from the work environment contributed to psychological conditions at a greater frequency than for the general population not employed in fire service (Antonellis Jr. & Thompson, 2012).

It was noted that most fire departments include a protocol that provide support for their members to treat conditions such as alcoholism, drug abuse and mental health conditions resulting in suicide or suicide ideation. This type of program is helpful in encouraging first responders to request assistance and may prevent a future attempt to commit suicide. It was recommended that employees of the fire department receive training to identify potential risks for their peers. When behavior indicates, first responders are encouraged to take the appropriate action to act as a good listener or make the needed notifications or referrals for professional assistance (Antonellis & Thompson, 2012).

Work Experience

Work experience is described as knowledge or skills acquired while completing job assignments or tasks that are associated with a field or profession. Emergency response workers including first responders are highly trained professionals with specialized skills needed to perform their duties (Prati et al., 2011). Specialized training prepares first responders to perform skills proficiently even when performing under difficult and stressful work conditions. First responder department managers' awareness

of stressful work conditions and the need for establishing stress management strategies is helpful for enhancing Risk Management efforts by reducing safety issues (Prati et al., 2011).

Gender and Job Performance

A distinction between male and female first responders' abilities should not occur, as first responders receive the same training. However, female first responders make up only 4% of first responders in the United States (UPI, 2016). This statistic contributes to the perception of job performance and capability of female first responders, when compared with male first responders is sometimes completed with more scrutiny (UPI, 2016).

Education

The self-efficacy theory created by Bandura (1995) argued that self-efficacy is improved by individuals acquiring advanced skills through education. Mastery is also a component of the self-efficacy theory obtained through repeated performance of skills until acquiring a proficient level of performance. Individuals with higher levels of education possess the ability to obtain additional job skills more easily. This is significant in relation to the existing study as mastery acquired by first responders including possessing the ability to acquire new skills is helpful in contributing to improved job performance (Bandura, 1995).

Critical Incident Stress Debriefing

In a 2008 study, Jeannette and Scoboria posited that first responders benefited from having access to a debriefing soon after a critical incident occurred. The purpose of the debriefing was to provide the participants with a forum where they could express their experience securely amongst their peers while being supervised by trained peer support counselors. The CISD method been widely used throughout the United States for assisting first responders with coping after exposure to a traumatic incident. In addition, CISD debriefing sessions created an environment that was conducive for emergency response workers for returning to work after receiving support from trained counselors (Jeanette & Scoboria, 2008).

Summary and Conclusions

This chapter provided background information on how stress affects job performance in first responders. Organizations experienced costs in the billions when addressing the effects of stress on job performance. Researchers found that first responders needed treatment to assist them in coping with the symptoms of stress caused by exposure to traumatic events. The literature search identified databases in the on-line library available for conducting word and subject matter searches, which identified articles relevant to the research. I focused on articles that discussed the independent variable perceived stress, the dependent variable job performance and the co-variate, self-efficacy. Self-efficacy is also the theoretical framework for the study.

Researchers found that there was an association between stress and job performance and that first responders benefited from receiving various forms of treatment that provided them with coping mechanisms for managing the effects of stress. A commonly used coping strategy used throughout the United States is CISD. Although departments throughout the United States used this method, it was not effective for all first responder participants.

The current study examined the relationship between perceived stress and first responders' job performance while moderating for self-efficacy, and demographic variables that include age, gender, job classification, education, and ethnicity. The next section will describe the research design and methodology used for conducting the research and collecting the data for the study. The data collected will provide information that answers the research questions and hypotheses.

Chapter 3: Research Method

The purpose of the study was to examine the relationship between perceived stress and first responders' job performance while moderating for self-efficacy. The independent variable is perceived stress as measured by the PSS (Al Kalalkeh & Shosa, 2012). The dependent variable is job-performance as measured by the EWPS (Beaton et al., 2010). Self-efficacy is a moderating variable as measured by a GSES (Leung & Leung, 2011). Discussions in this chapter include arguments on the research design and methodology selected for the study and provides a discussion regarding the research questions, identifications of the sampling and data collection procedures, and ethical consideration employed for participants.

Research Design and Rationale

Conducting the study required utilizing a quantitative approach with a correlational design. The independent variable is perceived stress measured by the PSS, the dependent variable is first responders' job performance measured by the EWPS, and self-efficacy measured by the GSES is the moderating variable. Other demographic variables include gender, age, ethnicity, education and job classification. Utilizing a correlational design and a quantitative approach for the study examined the following research questions:

RQ1: Is there a relationship between perceived stress levels measured by the PSS and first responders' job performance measured by the EWPS?

H_01 : There is no relationship between perceived stress levels and first responders' job performance.

H_{a1} : There is a relationship between perceived stress levels and first responders' job performance.

RQ2: Does self-efficacy measured by the GSES moderate the relationship between perceived stress levels measured by the PSS and first responders' job performance measured by the EWPS?

H_02 : Self-Efficacy does not moderate the relationship between perceived stress levels and first responders' job performance.

H_{a2} : Self-Efficacy does moderate the relationship between perceived stress levels and first responders' job performance.

Methodology

The quantitative methodology with a correlational design was the approach chosen for the study. The correlational design was appropriate for conducting a study utilizing a survey instrument with closed ended questions, and to access a population distributed over a large geographical area. The quantitative methodology and correlational design were preferred in the administration of the study by reducing constraints associated with data collection when using a survey instrument. The findings of the study are potentially helpful to administrators to aid in reducing the effects of PTSD in first responders and to improve the quality of work life for first responders after traumatic experiences.

Whereas the qualitative methodology includes interviews regarding personal experiences of the subjects conducted by the researcher, the mixed methods methodology uses the findings of quantitative and qualitative research. However, the qualitative and the mixed methods methodology were not appropriate for the study. Neither approach allows for examining large populations or the ability to generalize the results (Babbie, 2016).

Population

The Bureau of Labor Statistics (2020) estimated that there were approximately 311,350 first responders working in the United States. The first responder population targeted for the study included men and women adults with various levels of experience, education, and rank. The results of the study may enhance first responders' ability to perform their duties and a better understanding of how stress affects job performance.

Sample and Sampling Procedures

The aim of the study was to gain insight through the findings drawn from the sample of professional first responders. The probability sampling method is useful when conducting a survey to study a large population and a random selection approach is desired. Utilizing a random selection approach reduces the opportunity for "conscious or subconscious" bias created by the researcher and allows for the results based upon the sample selected to be generalized as representative of the population studied (Babbie, 2016, p. 191).

The minimum sample size ($N = 111$) was determined through analysis utilizing the G*Power application (Faul et al., 2007). Parameters included using an alpha level of 0.05 reduced the possibility of Type I error and the power level of .95 and a medium effect size. Correlation and moderated regression were used for hypotheses testing. The survey for the study was closed upon obtaining sufficient responses resulting in a large sample size ($N = 143$). The respondents included first responders from various professional emergency response agencies located in regions throughout the United States and is representative of the population.

Recruitment and Data Collection Procedures

Recruiting procedures included requesting approval to conduct a research study involving members of emergency response departments in the geographical region of the United States. A correspondence forwarded to an administrative staff member serving as a liaison provided information concerning the researcher and the purpose of the study. The study was administered through Alchemer, an independent third party specializing in data collection using an online platform. To gain access to the survey site a link was provided to participants via the liaison allowing participants to independently access the survey site. Information regarding the administration of the survey was provided upon accessing the survey site. The importance of completing the survey and appreciation for their participation was discussed.

Participants reviewed an informed consent form before continuing to complete the survey. Participants had an option to end the survey at any time or at the conclusion of

completing the survey, which could be accomplished in approximately 15–20 minutes. If a participant decided not to respond to a particular item, that item was eliminated from consideration in the statistical data obtained. No follow-up was necessary and there was no need to return to the survey site.

As the researcher, I was responsible for securing all materials associated with the study and for retrieving the subsequent statistical data. The demographic data collected included gender, age, ethnicity, education, and classification. The instruments used for data collection were the PSS, the EWPS, and the GSES.

Instrumentation and Operationalization of Constructs

The Perceived Stress Scale

The instruments used for the study include the PSS developed by Sheldon Cohen in 1983. It was appropriate to the current study as perceived stress is the independent variable (Cohen et al., 1983). The instrument was previously used in a population among pregnant and postpartum women in Qatar (Chaay et al., 2010). The PSS has been demonstrated to be a valid and reliable instrument as one of the most widely used instruments for measuring stress.

The PSS uses a 5-point scale that ranges from 0 (*never*) to 4 (*very often*; Cohen et al., 1983). A question example is as follows: “In the last month, how often have you been upset because of something that happened unexpectedly?” (Cohen et al., 1983).

The Endicott Work Productivity Scale

The EWPS was developed by Jean Endicott in 1991. This instrument was appropriate to the current study as job performance is the dependent variable. The instrument was previously used in a study involving employees' inability to perform their work responsibilities due to arthritis Beaton et al. (2010). The EWPS demonstrated being a valid and reliable scale. Validity was documented in a study involving a worker's inability to perform work responsibilities due to arthritis (Beaton et al., 2010). Reliability indicated using Cronbach's alphas scores ranged from (0.71) to (0.94). The scale was useful for determining an employee's perceived ability to perform work responsibilities.

The EWPS uses a 25-item questionnaire that was originally designed to assess individuals' inability to perform job skills caused by illness or physical impairment. The scale uses a 5-point scale that ranges from 0 (*never*) to 4 (*almost always*). A question example in the survey is as follows: "During the past week how frequently did you work more slowly or take longer to complete tasks than expected?" (Endicott & Nee, 1997).

The General Self-Efficacy Scale

The GSES was developed in 1979 in Germany by Ralf Schwarzer and Matthias Jerusalem. The instrument is appropriate for the study as self-efficacy is a co-variate for the study and the instrument was previously used in a study including German cardiac patients to test self-efficacy before and after surgery (Schwarzer & Scholz, 2000). The GSES was demonstrated as being valid and a reliable scale. Validity was documented in a previous correlation study, reliability indicated using Cronbach's alphas scores ranged

from .76 to .90. The scale was useful for accessing quality of life issues before and after surgery (Schwarzer & Scholz, 2000).

The GSES is used to determine individuals' response to stressful situations and their ability for managing those occasions with self-efficacy. The scale includes a 10-item questionnaire with a 4-point scale ranging from 1 (*not at all true*) to 4 (*exactly true*). A sample item taken from the survey is this statement: "I can always manage to solve difficult problems if I try hard enough." (Mathias et al., 1995, p. 1).

Each instrument is designed to address the research questions in response to the survey items and use the appropriate test for analyzing the data collected. Using a correlation was appropriate for the research question to determine if there was a relationship between each variable and if statistical significance was indicated. A moderated regression analysis determined the levels of self-efficacy participants experienced and the difference in scores relative to the participants in the sample (Babbie, 2016).

The survey data was represented with the following codes for confidentiality and for data management purposes: Descriptive statistics which include demographical variables include Gender = Nominal (1 – M, 2 – F), Age = Nominal, Ethnicity = Nominal (1 - White, 2 – Black, 3 – Hispanic, 4 – Asian Pacific, 5 – Other), Education level = Ordinal (1 – lowest / 5 – highest), Rank – Ordinal. The codes assigned to survey question responses were designated as (Stress) PSS – code Stress01, Stress02, Stress03 etc., which represents scale one, first item, second item, third item etc.; (JP) EWPS – code JP01,

JP02, JP03 etc., which represents scale two, first item, second item, third item etc.; (SE) PSES – code SE01, SE02, SE03 etc., which represents scale three, first item, second item, third item etc. Upon completion of data collection, data were downloaded from the website into the Statistical Package for Social Sciences (SPSS) format for analysis.

RQ1: Is there a relationship between perceived stress levels measured by the PSS and first responders' job performance measured by the EWPS?

H_01 : There is no relationship between perceived stress levels and first responders' job performance.

H_{a1} : There is a relationship between perceived stress levels and first responders' job performance.

RQ2: Does self-efficacy measured by the GSES moderate the relationship between perceived stress levels measured by the PSS and first responders' job performance measured by the EWPS?

H_02 : Self-efficacy does not moderate the relationship between perceived stress and first responders' job performance.

H_{a2} : Self-efficacy does moderate the relationship between perceived stress and first responders' job performance.

A correlation and moderated regression analysis was used to test the hypothesis and to answer the research questions. Conducting a test to determine normal distribution using a graph can reveal normal distribution when a bell shape curve is the result and

kurtosis was established. The use of a graph for establishing whether a linear relationship exists is revealed in a scatter plot (George & Mallory, 2020).

If assumptions are violated when analyzing data alternative actions are required such as a non-parametric test used as an alternative for a correlation when assumptions are not met, or the presence of outliers is revealed in the Spearman's Rank Correlation. This test is useful in determining if the outliers affect the outcome of the analysis (George & Mallory, 2020). The Bonferroni Correction is a viable option when the use of multiple tests is required for analyzing data. The results allow the researcher to address the occurrence of Type I error and use an adjusted p value when necessary to determine significance in the results (George & Mallory, 2020).

Self-efficacy is the covariate used in the study to determine a moderating effect when examining the effects of perceived stress of first responders on their job performance. Self-efficacy is the theoretical foundation for the study and contributes to the individual commitment experienced by people determined to meet their goals (Bandura, 1995).

Data Analysis Plan

SPSS was used for conducting statistical tests resulting in inferential and descriptive statistics. The tests used for testing the research questions include correlation and moderated regression. The preceding tests were used to determine the .05 level of significance relative to the relationship between first responders perceived stress and job

performance while moderating for self-efficacy. The demographic variables considered for descriptive analysis included gender, age, ethnicity, education, and job classification.

The data were entered into the SPSS software program where data cleaning and screening was completed via the use of the computer program. This process is helpful in identifying any errors that occurred with data input or possible coding representation (Babbie, 2016). The Alchemer website, an independent third party used for the administration of the survey, provided a code for missing data created by missing responses. Items for missing data were replaced with the overall mean value so that the overall mean was not changed during data analysis. The purpose of the study was to examine the relationship between the independent variable perceived stress and the dependent variable job performance, and self-efficacy as a moderating variable.

RQ1: Is there a relationship between perceived stress levels measured by the PSS and first responders' job performance measured by the EWPS?

H₀1: There is no relationship between perceived stress levels and first responders' job performance.

H_a1: There is a relationship between perceived stress levels and first responders' job performance.

RQ2: Does self-efficacy measured by the GSES moderate the relationship between perceived stress levels measured by the PSS and first responders' job performance measured by the EWPS?

H₀₂: Self-Efficacy does not moderate the relationship between perceived stress and first responders' job performance.

H_{a2}: Self-Efficacy does not moderate the relationship between perceived stress and first responders' job performance.

Threats to Validity

There were several threats to the validity of a study with the possibility of having a negative influence on the outcome of the study. The threat of greatest concern was construct validity, which was the instrument used for collecting data was not effective. Using validated constructs with reliability levels greater than .70 mitigated this threat. As such there were no further concerns about the validity of data collected.

Ethical Procedures

The Standard Application for Research Ethics Review requesting approval to conduct research was completed. Correspondence was provided to an administrative liaison requesting access to conduct a study with emergency response personnel. I received authorization to complete the study via the administrative liaison. I was guided by the standards set forth by Walden University dissertation guide that stressed the requirement of maintaining confidentiality of participants of research studies and ensuring that under no circumstances shall participants experience any harm by their association or participation in the study.

Anonymity

Efforts to ensure privacy was maintained for participants during data collection and was addressed by obtaining the responses through a secure web site and by using coded designations that prevent identifying persons associated with responses. All data obtained will be maintained by the researcher in a secure location for the requisite five-year period and then appropriately destroyed. Participation was established on a volunteer basis without any promise of compensation.

Confidentiality

Confidentiality was maintained for study participants, by ensuring all information that could identify them was withheld and only known to the researcher. The name of the geographic locale was altered to prevent any association with people who work or reside in surrounding areas. The Walden University Institutional Review Board (IRB) granted permission to conduct the research study and assigned an approval identification number 02-28-23-0136198. No other ethical concerns were identified.

Summary

This chapter discussed the research design and rationale identifying the independent, dependent variables and a moderating variable for the study. The methodology identifying the population for the study, recruitment procedures and data collection were discussed. The ethical procedures regarding participation treatment of data are included in this chapter. The study used a quantitative methodology and a correlational design to examine the relationship between the first responders perceived

stress and job performance while moderating for self-efficacy. The use of a survey instrument was useful for accessing a large population spread over a large area and establishing that the sample drawn to complete the study was representative of the population.

The next chapter will describe the results of the study and what the implications are for enhancing the work life experience for first responders impacted by the effects of perceived stress. In Chapter 4, I will discuss data collection procedures and the descriptive statistics that include demographic descriptions that are representative of the sample. Tables and figures are included to demonstrate the relationship between independent variable perceived stress, dependent variable first responder job performance and moderating variable self-efficacy. Statistical evidence that supports the research findings is provided.

Chapter 4: Introduction

The purpose of the survey study was to examine the effects of perceived stress on first responders' job performance while moderating for self-efficacy. Self-efficacy as the foundational basis for the study is an integral component of the significance of the study.

The GSES was useful for accessing quality of life issues before and after surgery. The PSS has demonstrated being a valid and reliable instrument as one of the most widely used instruments for measuring stress. The EWPS was used in a study involving a worker's inability to perform work responsibilities due to arthritis. The results provide a meaningful contribution to social change by assisting first responders when recovering from the effects of work-related stress and for increasing their quality of work and home life. In Chapter 4, I describe the data collection process, the results generated from data analysis are discussed, and a summary of the findings is provided. The data collection process examined demographic data including gender, age, ethnicity, education, and job classification which provide insight relative to the sample characteristics. Correlation and regression analyses were used to answer the research questions and test the hypotheses.

The research questions and hypotheses in the study include the following:

RQ1: Is there a relationship between perceived stress levels measured by the PSS and first responders' job performance measured by the EWPS?

H_0 1: There is no relationship between perceived stress levels and first responders' job performance.

H_{a1}: There is a relationship between perceived stress levels and first responders' job performance.

RQ2: Does self-efficacy measured by the GSES moderate the relationship between perceived stress levels measured by the PSS and first responders' job performance measured by the EWPS?

H₀₂: Self-efficacy does not moderate the relationship between perceived stress and first responders' job performance.

H_{a2}: Self-efficacy does moderate the relationship between perceived stress and first responders' job performance.

Data Collection

Response Rates and Recruitment Overview

The original target sample size identified in Chapter 3 ($N = 111$) was determined through analysis utilizing the G*Power, power analysis (Faul et al., 2007). The study remained open for approximately 6 months from spring 2023 to fall 2023. Upon obtaining adequate responses, no additional data was collected. Due to slow periods of participant response, the invitation to participate in the study was broadened to include first responders in general working within the United States and not limited exclusively to firefighters as previously established in Chapter 3. Under Walden University IRB approval 02-28-23-0136198, the adjustment resulted in the final sample size ($N = 143$).

Descriptive Analysis

Conducting this study was for examining whether self-efficacy had a moderating effect on any relationship found between perceived stress and job performance among first responders in the United States. Measuring perceived stress was by using the PSS. Measuring job performance was by using the EWPS and measuring self-efficacy was by using the GSES. Participants for the study were accessed through Alchemer, an independent third party specializing in data collection using an online platform.

Gender Variable

The gender of the first responder participants in the sample includes male and female respondents. The number of male respondents ($n = 78$) was 55% and represented as the greater proportion of the sample. The number of female respondents ($n = 65$) was 45% of the sample and represented the smaller proportion of the sample. Together the combined percentages represent the total ($N = 143$) of the sample size.

Age Range Variable

The sample for this study ($N = 143$) participated in the study using a convenience sampling method. Among first responders, results showed that males ($n = 78$) were represented and were 22% of the sample. Participants in the study were categorized by age groups that were as young as 18 years old to 59 years or older. The largest group of all first responders were ages 30–39 years old, which was 36% of the sample. Results also showed that those who were 50–59 years old were in the smaller group.

Approximately 1 of 4 participants were between the ages of 18–29 years old and approximately 1 of 5 were 40–49 years old, representing 22% of the sample.

Ethnicity Variable

The sample of first respondents comprised of many ethnicities, however, those who reported as being White ($n = 94$) made up the largest proportion of the sample (66%) while those who reported as being of other races ($n = 5$) were in the smallest group and were 4% of the sample. Participants who reported as being Black ($n = 21$) were 15% of the sample and were the second largest ethnic group in the study. Together, Hispanics and Asians comprised 16% of the sample.

Education Variable

Results showed that first responders were highly educated. Approximately 75% of the sample representing 3 of 4 first responders earned an associate's degree and up to a doctorate degree. Approximately 32% earned an associate degree ($n = 46$), and approximately 29% of the sample earned a bachelor's degree ($n = 41$). Approximately 13% earned a master's or doctorate degree ($n = 18$), and approximately 25% representing 1 in 4 first responders ($n = 38$) reported earning a high school diploma.

Job Classification Variable

Several job classifications were represented in the sample. For instance, firefighters ($n = 47$) were 33% of the sample. Participants classified as other first responders were the second highest proportion of the sample ($n = 37$) and were 26% of

the sample. Police officers represented 1 in 5 participants ($n = 26$), and EMT/Paramedics made up the rest of the sample.

Table 1

Summary of Demographic Variable Results

Variable	<i>N</i>	Category	<i>n</i>	%
Gender	143	Male	78	55
		Female	65	45
Age	143	18-29yrs old	34	24
		30-39yrs old	52	36
		40-49yrs old	32	22
		50-59yrs old	25	17
Ethnicity	143	Asian	6	4
		Black	21	15
		White	94	66
		Hispanic	17	12
		Other race	5	3
Education	143	High school diploma	38	27
		Associate's degree	46	32
		Bachelor's degree	41	29
		Master's degree	13	9
		Doctorate degree	5	3
Job classification	143	EMT/paramedic	33	23
		Firefighter	47	33
		Other first responder	37	26
		Police officer	26	18

Self-Efficacy Variable

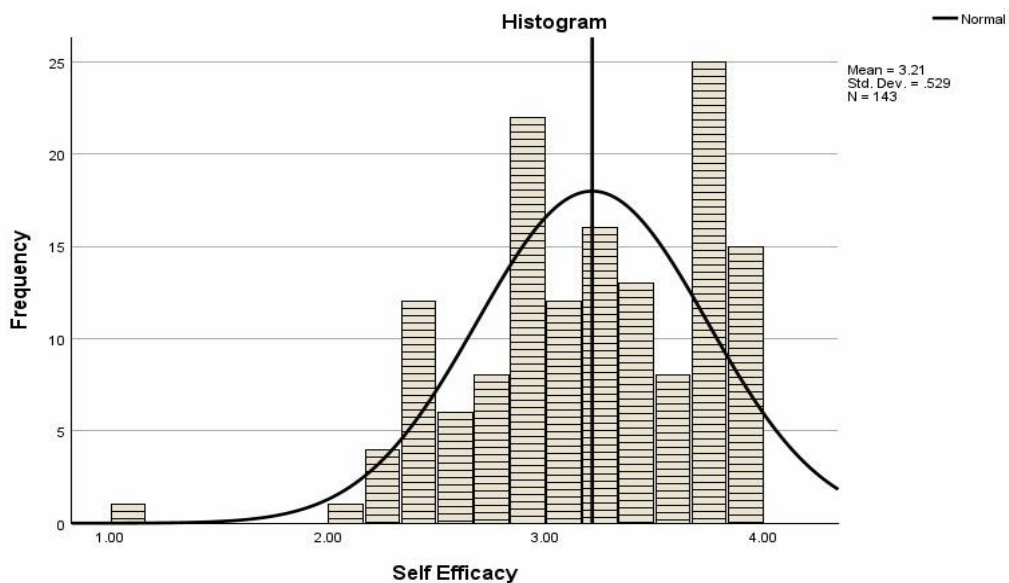
An analysis was conducted on the self-efficacy variable. The variable was measured using the GSES. The range of values for the Likert type scale was from 1 to 4, where 1 indicated the lowest level of efficacy and 4 indicated the highest level. Results show that participants experienced a high to moderately high level of self-efficacy ($M = 3.21$, $SD = .53$). This indicated that approximately 68% of the sample had a low level of self-efficacy of 2.68 and a high level of self-efficacy of 3.74. The median value was 3.3, demonstrating that approximately 50% of the sample had above average self-efficacy.

Some participants reported the lowest level of self-efficacy of 1 and others reported the highest level of self-efficacy of 4. In the population, the 95% confidence level ranged from 3.13 to 3.30 with a standard error of .04. This low standard error indicated that the sample mean score for self-efficacy was very close to the population mean score.

The histogram in Figure 1 shows that most of the scores for self-efficacy fell under the bell curve, suggesting the data were normally distributed. In Figure 2, the QQ plot shows that a majority of the datapoint for self-efficacy were close to the slope, which was another indication of normality. There were, however, responses that indicated outliers existed, as demonstrated in the boxplot in Figure 3. The sample size, however, was sufficiently large and reduced any limitations of the results, showing that sample participants experienced high levels of self-efficacy as first responders. A summary of self-efficacy results is in Table 3.

Figure 1

Histogram of the Distribution of Self-Efficacy Among First Responders

**Figure 2**

QQ Plot Showing Normality of Self-Efficacy Among First Responders

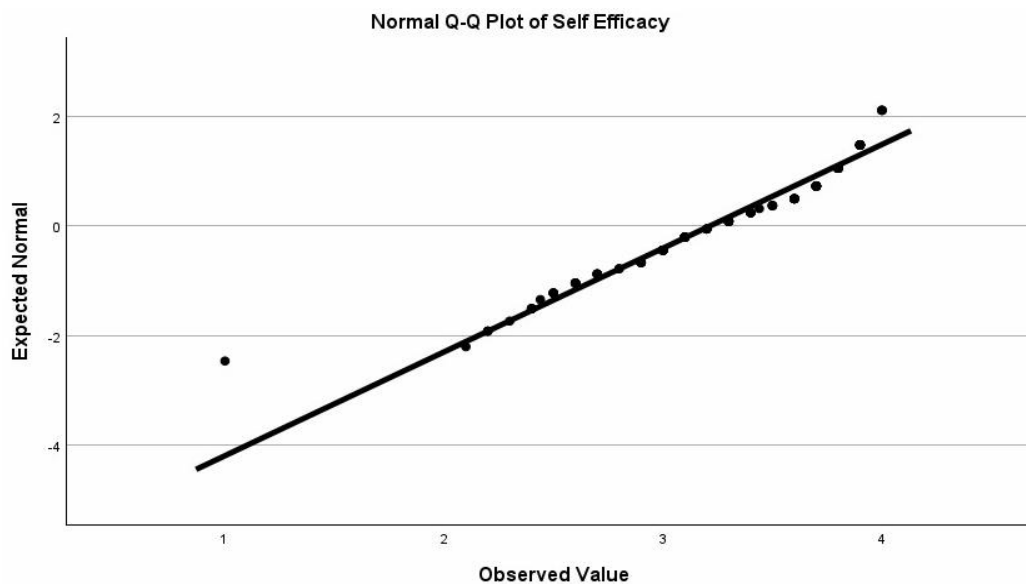
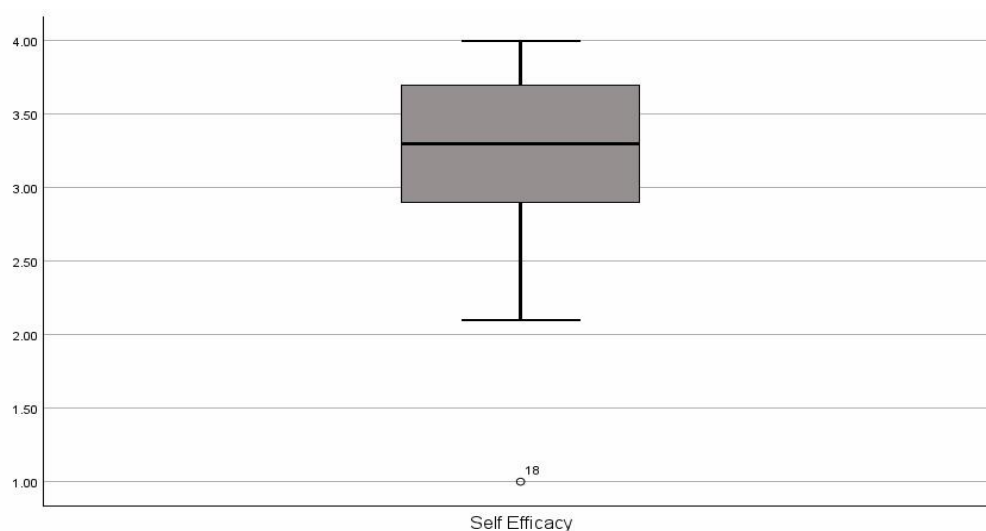


Figure 3

Boxplot Showing Single Outlier for Self-Efficacy Among First Responders



Job Performance Variable

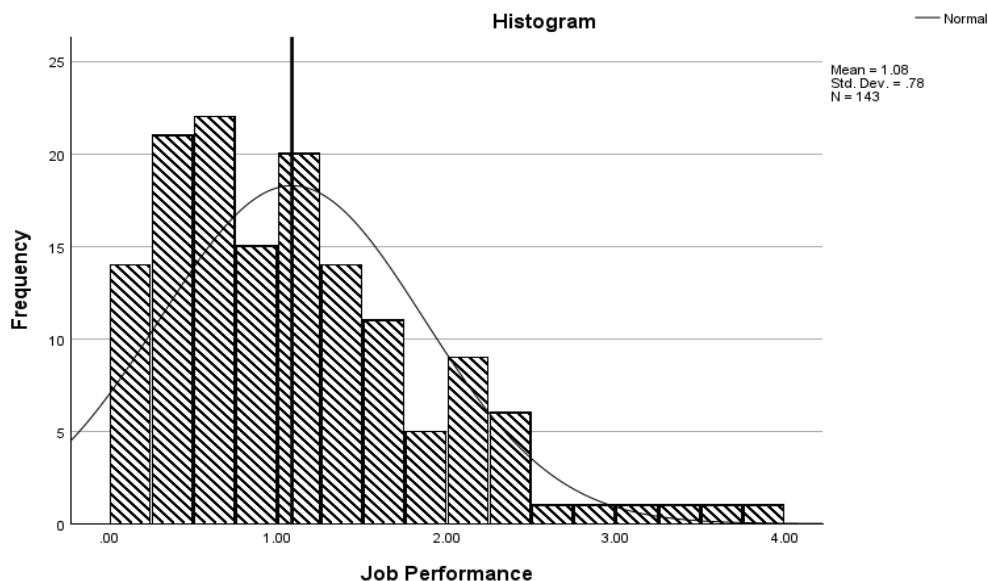
An analysis of the job performance of first responders was conducted. The variable was measured using the EWPS. The Likert type scale had a range of 0 to 4, where a zero indicated the lowest level of job performance and a four indicated the highest level of job performance. For first responders in this study, job performance was very low ($M = 1.08$, $SD = .78$), demonstrating that first responders do not feel very productive. Approximately 50% of all first responders reported a job performance score of less than .96, while some participants reported a zero level of job performance. On the spectrum, some first responders indicated the highest level of job performance, accounting for a range of 3.92. The 95% CI shows that sample results are similar to

population results where the lowest level of job performance was .95 and the highest level of job performance was 1.21 ($SE = .06$).

The sample ($N = 143$) results showed that 3% of the sample ($n = 5$) reported the lowest level of job performance, while 3% reported job performance levels of 2.88 or higher. The histogram in Figure 4 shows the distribution of job performance scores, indicating that while most of the scores are well within the bell curve, a majority of responses are on the low end of the distribution, accounting for a skewness of 1.04. The Kurtosis score of 1.16 supports that the lower responses are on the right side of the distribution. The solid line in the middle of the bell curve represents the mean value of job performance. Results are summarized in Table 3.

Figure 4

Histogram of Distribution of Job Performers Scores Among First Responders



The QQ plot in Figure 5 shows that several of the data points reported are not close to the normality slope, indicating that results are not normal. In Figure 6, the boxplot shows outliers on the higher end of the distribution for job performance among first responders. These results are supported by the normality test results summarized in Table 2, demonstrating that results are not normally distributed. A summary of variables descriptive analysis are in Table 3.

Figure 5

QQ Plot Showing a Lack of Normality Distribution for Job Performance Among First Responders

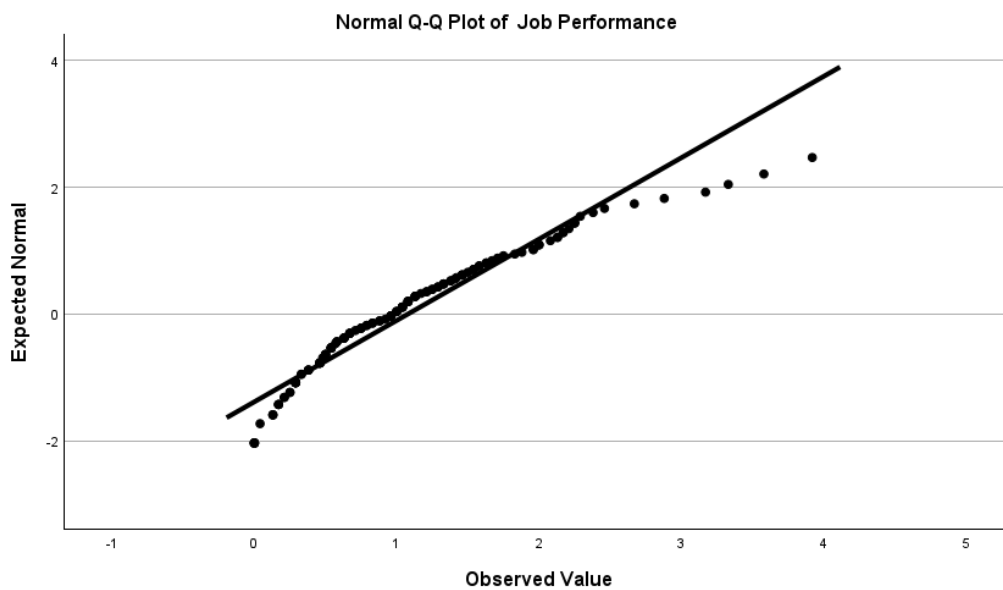
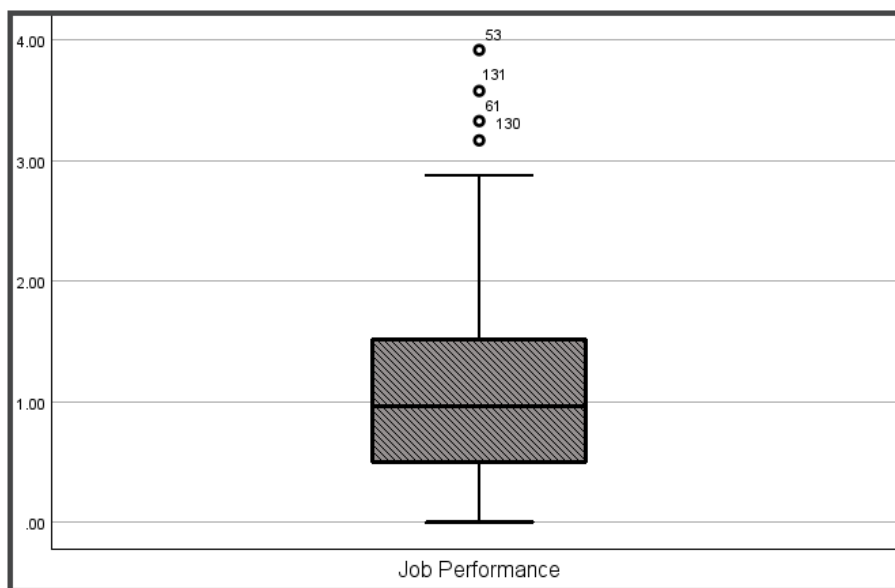


Figure 6

Boxplot Showing Outlier Responses for Job Performance Among First Responders

**Table 2**

Summary of Normality Test for Job Performance Among First Responders

	Tests of normality					
	Kolmogorov-Smirnov ^a			Shapiro-Wilk		
	Statistic	df	p	Statistic	df	p
Job Performance	.10	143	.002	.93	143	.000

^a Lilliefors Significance Correction.

Perceived Stress Variable

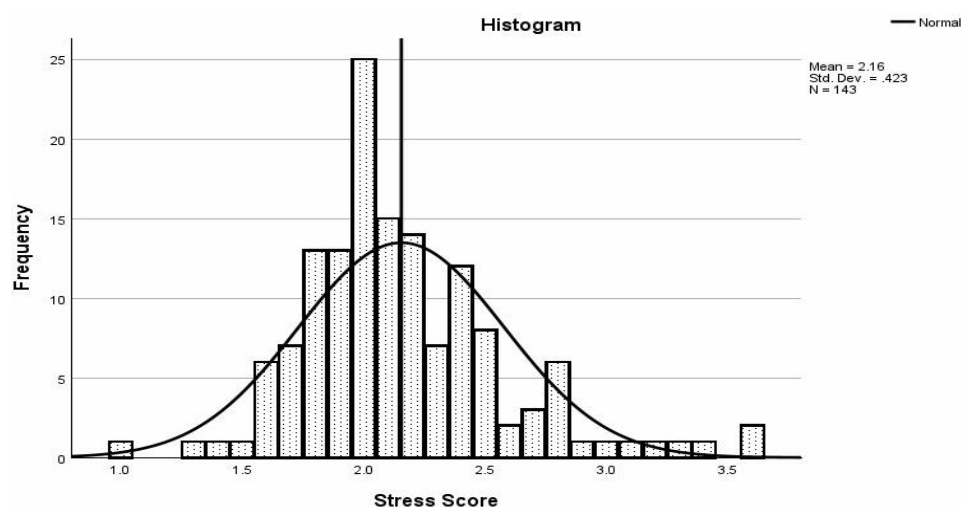
An analysis was done on the perceived stress first responders reported experiencing in this study. Perceived stress was measured using the PSS. The Likert-type scale was measured from 1 to 5, where 1 indicated the lowest level of stress experienced as a first responder, and 5 represented the highest level of stress experienced. The sample

($N = 143$) reported experiencing a moderate level of stress as a first responder ($M = 2.16$, $SD = .42$). These results demonstrate that approximately 68% of respondents experienced perceived stress on a range from 1.74 to 2.58. Approximately 95% reported a range from as low as 1.32 to as high as 3.00. The median value suggests that approximately 50% of respondents experienced more than 2.10 level of perceived stress. The lowest level reported was 1 and the highest level reported was 3.6, accounting for a range of 2.6.

The histogram Figure 7 shows the distribution of perceived stress reported. Most of the values are well within the bell curve, suggesting normality in the distribution of perceived stress. The mean value is depicted by the solid line in the middle of the bell curve. The skew value is positive, indicating that most of the value for perceived stress is lower than the mean value. The Kurtosis value suggests that smaller frequencies of perceived stress were reported above the mean.

Figure 7

Histogram of the Distribution of Perceived Stress Among First Responders



A review of the QQ plot in Figure 8 shows that many of the data points are away from the normality slope, indicating that the data were not normally distributed, despite suggestions from viewing the histogram. A clear reason for a lack of normality in the distribution of perceived stress was revealed by analyzing the box plot in Figure 9. The whiskers of the box plot show the normal range of values and that most of the values in the distribution are within the large box. There are, however, values outside the normal range of the distribution, which likely contributed to the lack of normality in the distribution, on both the high and low sides of the distribution.

Figure 8

QQ Plot Showing Lack of Normality

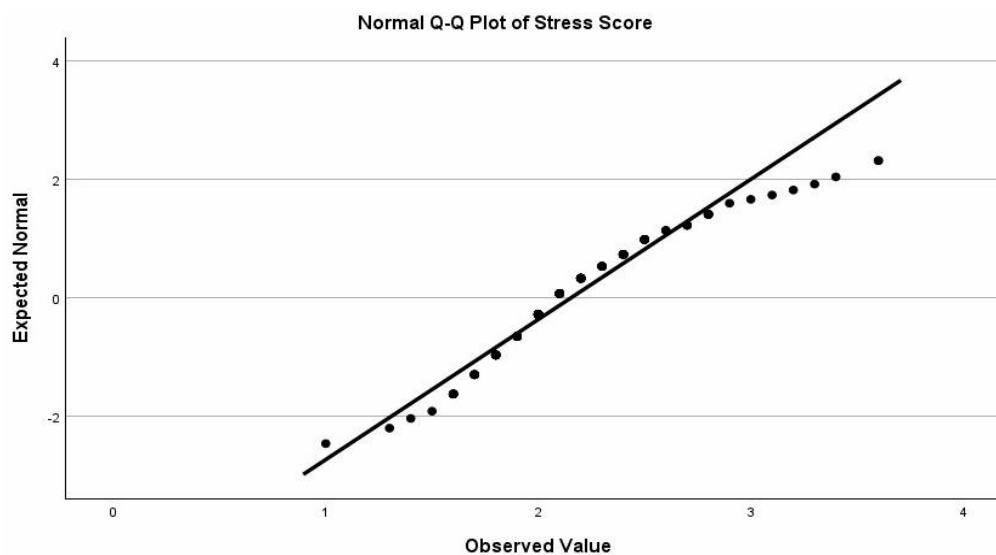
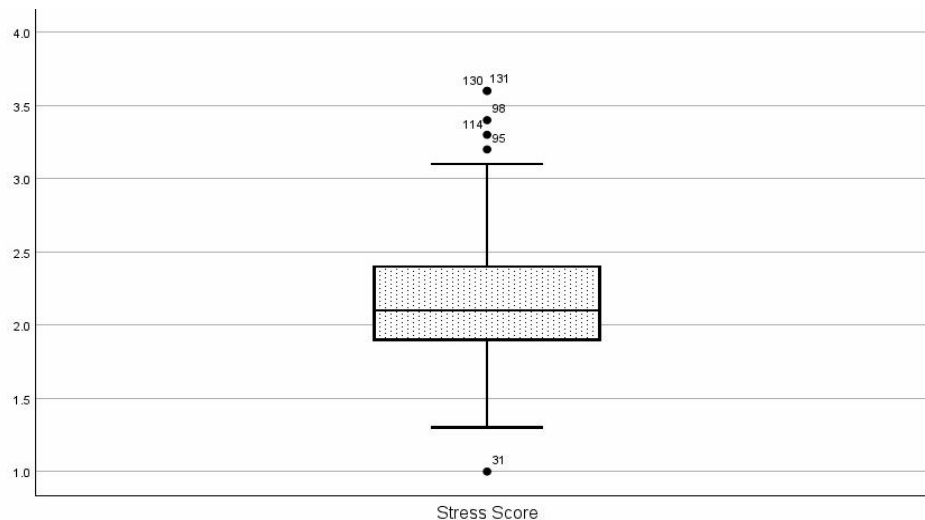


Figure 9

Box Plot Showing Outliers of Perceived Stress Among First Responders



A review of results from the test of normality shows that the data were not normally distributed ($p < .001$). A further examination of extreme values shows that 3% of the samples reported the lowest level of perceived stress and 3% of the samples reported a very high level of perceived stress. These extreme values account for 6% of the overall results; however, 94% of the values are well within the normality of distribution. This suggests that final results are not affected by these small extreme values. A summary of results for perceived stress is in Table 3. The following are the results for RQ1 and RQ2.

Table 3*Summary of Variables: Descriptive Analysis*

Variable	<i>M</i>	<i>SD</i>	<i>Med</i>	Min	Max	<i>SE</i>	95% CI	
							<i>LL</i>	<i>UL</i>
Job Performance	1.08	.78	.96	.00	3.98	.07	.95	1.21
Self-Efficacy	3.21	.53	3.30	1.0	4.0	.04	3.13	3.24
Perceived Stress	2.16	.42	2.10	1.0	3.6	.04	2.09	2.23

Note. CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

Research Questions and Hypotheses Analyses

The following research questions were addressed in this analysis. Addressing research questions is by analysis associated hypothesis. Results of statistical test analysis were used for answering each research question. A summary of all results is provided at the end of this analysis.

Research Question 1

RQ1: Is there a relationship between perceived stress levels measured by the PSS and first responders' job performance measured by the EWPS?

Hypothesis

H_0 1: There is no relationship between perceived stress levels and first responders' job performance.

H_a 1: There is a relationship between perceived stress levels and first responders' job performance.

Research Question 2

RQ2: Does self-efficacy measured by the GSES moderate the relationship between perceived stress levels measured by the PSS and first responders' job performance measured by the EWPS?

Hypothesis

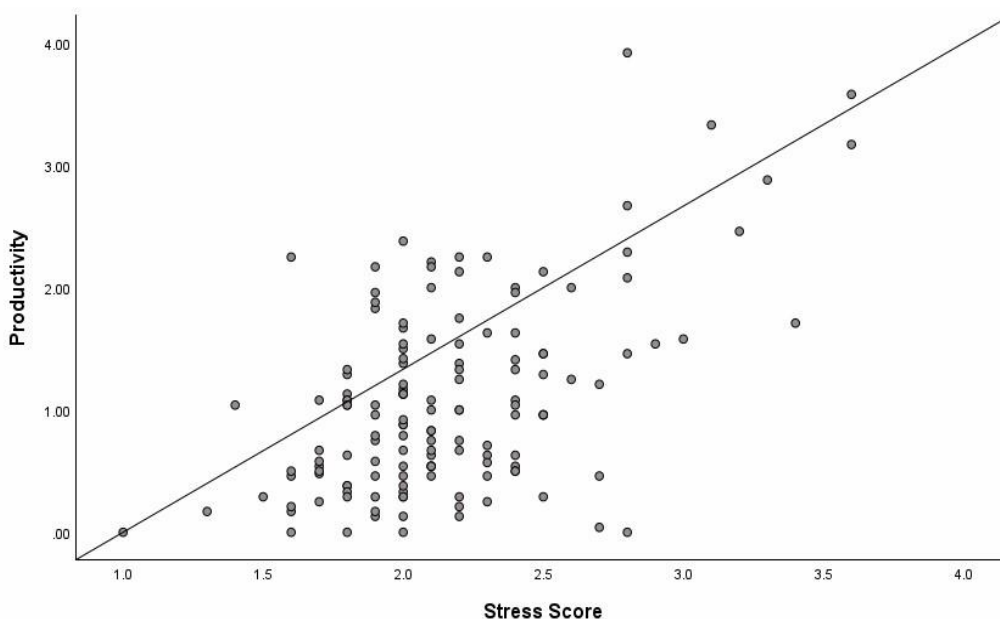
*H*₀2: Self-efficacy does not moderate the relationship between perceived stress and first responders' job performance.

*H*_a2: Self-efficacy does moderate the relationship between perceived stress and first responders' job performance.

Results of Analyses

Research Question 1

A correlations analysis was conducted among first responders ($N = 143$) to assess whether there was a relationship between perceived stress measured by the PSS and job performance measured by the EWPS among first responders. The stress scores ($M = 2.16$, $SD = .42$) showed that perceived stress among first responders was moderate. The results also show that job performance was very low ($M = 1.08$, $SD = .78$) among first responders. The assumptions for this analysis were that each variable was normally distributed and that a linear relationship exists. Cases represented a random sample of the population of first responders. An inspection of a scatterplot in Figure 10 shows that there was nonlinearity between perceived stress and job performance. As such, a Spearman's rho analysis was conducted as an alternative when assumptions were violated.

Figure 10*Scatterplot of Perceived Stress and Job Performance*

Results of analyses require an alpha level of .05 or less for significance. Results of the Spearman's rho correlations analysis was significant ($r = .41, p < .001$). The null hypothesis was therefore rejected. Results of the analysis indicate that as perceived stress increased, job performance also increased, which may be as a result of the nature of the job functions of first responders. The 95% CI of .26 to .54 means that since the correlation coefficient is within the confidence level, the results are significant in the population of first responders. The .41 correlation coefficient showed a medium effect size and indicated that perceived stress was responsible for the variance in job performance ($R^2 = .16$). This experimental effect is a demonstration of the moderate strength of the relationship between perceived stress and job performance (see Table 4).

Table 4

Summary of Spearman's rho Correlations Test Results Between Perceived Stress and Job Performance

Spearman's <i>RHO</i> Correlations		95% CI	
	Job performance	<i>LL</i>	<i>UL</i>
Perceived Stress	<i>r</i> .41	.26	.54
	<i>p</i> .000		
	<i>N</i> 143		

Note. CI = confidence interval; *LL* = lower limit; *UL* = upper limit.

Cronbach's Alpha Scale Reliability Results

An internal consistency estimate of reliability was conducted on three scales used in this study, which included the PSS, the EWPS, and the GSES. The PSS included 10 items with a highly reliable Cronbach alpha score (.89). Results of the EWPS showed a highly reliable Cronbach score (.96) and the GSES reliable test was no different (.89). Together these results indicate that instruments used in this test were reliable and results are also deemed reliable. A summary of results are in Table 5.

Table 5

Cronbach Alpha Scale Reliability Results

Scale	Cronbach's alpha	Cronbach's alpha based on standardized items	No. of items
Perceived Stress Scale (PSS)	.84	.83	10
Endicott Work Productivity Scale (EWPS)	.96	.96	25
General Self-Efficacy Scale (GSES)	.89	.90	10

Research Question 2

An analysis was conducted to assess whether self-efficacy had a moderating effect on any relationship between perceived stress and job performance of first responders. A correlations matrix was performed using SPSS (Version 30) to determine whether each variable had a linear relationship independently with the dependent variable, job performance. Results show that perceived stress had a significant positive linear relationship with job performance ($r = .55, p < .001$), so that when perceived stress increased, job performance also increased. The effect was large of strong.

Results also show that self-efficacy had a significant negative relationship with job performance ($r = -.27, p < .01$), indicating that as self-efficacy decreased, job performance increased, demonstrating first responders did not necessarily rely on self-efficacy alone when performing their job functions. The results indicated that self-efficacy was only responsible for 7% of the variance in job performance. Additionally, the interaction between perceived stress and self-efficacy had a positive linear relationship with job performance ($r = .28, p < .001$), indicating that together, these variables accounted for 7% of the variance in job performance. The variable was used in the multiple linear regress model to assess its effectiveness (see Table 6).

Table 6

Correlation Matrix Showing the Independent Relationship Between Each Independent Variable and the Dependent Variable

Correlations Matrix	
Variables	Job Performance
Perceived Stress	.55***
Self-Efficacy	-.27**
Interaction of Perceived Stress and Self-Efficacy	.28***

** Significant at .01 Level; *** Significant at .001 level.

A multiple regression analysis was conducted between the dependent variable job performance and the independent variable perceived stress, and self-efficacy using the product of self-efficacy and perceived stress, and self-efficacy, and also using the product of self-efficacy and perceived stress as a moderating variable. The analysis produced two models. The first model included perceived stress and self-efficacy as predictors of job performance. The model was significant where the strength of the relationship when both variables were added, was strong ($r = .56$, adj. $r^2 = .31$, $p < .001$). The results show that the model was strong, and predictor variables fit the model tested ($F = 32.74$). The second model included the same predictor variables, but with the addition of the moderation variable (self-efficacy by perceived stress). These results showed an improved model ($r = .59$, adj. $r^2 = .33$, $p < .03$).

The model was also a good fit ($F = 24.34$). The first model without the moderation variable accounted for 31% of the variance in job performance, but the second model improved and showed that with the moderation term, the variance increased to 33% of job performance. The rest of the analysis is based on Model 2. The

small standard error of .64 is a good indication of the predictive values of the slope, another indication of a good model for predicting job performance among first responders. A summary of the model results is provided in Table 7.

Table 7

Summary of Model Results

Model	<i>R</i>	<i>R</i> ²	Adj <i>R</i> ²	<i>SE</i>	Change statistics				
					<i>R</i> ² Chg.	<i>F</i> Chg.	<i>df</i> 1	<i>df</i> 2	<i>P</i>
1	.56 ^a	.32	.31	.65	.32	32.74	2	140	.000
2	.59 ^b	.34	.33	.64	.03	24.34	1	139	.021

^a Predictors: (Constant), Self Efficacy, Stress Score. ^b Predictors: (Constant), Self

Efficacy, Perceived Stress, Perceived Stress X Self-Efficacy. ^c Dependent Variable: Job Performance.

An analysis of variance summary of results showed the goodness of fit for the model. The model results $F(1, 139) = 34.34, p < .001$ are significant when assessing the interaction of perceived stress, self-efficacy, and self-efficacy by perceived stress as predictors of job performance. A summary of results is in Table 8.

Table 8*Summary of Goodness of Fit Analysis of Variance Results*

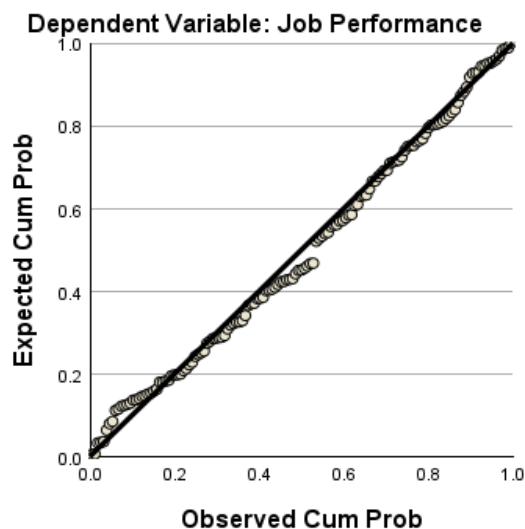
Model		<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>P</i>
1	Regression	27.56	2	13.78	32.74	.00 ^b
	Residual	58.92	140	.42		
	Total	86.48	142			
2	Regression	29.78	3	9.93	24.34	.00 ^c
	Residual	56.70	139	.41		
	Total	86.48	142			

^a Dependent Variable: Job Performance. ^b Predictors: (Constant), Self Efficacy, Perceived

Stress. ^c Predictors: (Constant), Self Efficacy, Perceived Stress, Perceived Stress X Self-

Efficacy.

The multiple linear regression test was used to determine whether perceived stress, self-efficacy, and the interaction of self-efficacy and perceived stress were significant predictors of job performance. The QQ plot of residuals in Figure 11 show that data points were close to the slope, indicating normality in the population. As such, violations of unequal variances were not present, and linearity was present.

Figure 11*QQ Plot Showing Normality of Regression Residuals***Normal Q-Q Plot of Regression Standardized Residual**

Results of the multiple linear regression analysis show that without any input from independent predictors, first responders were still able to do their jobs. When assessing perceived stress in the model, the results show that perceived stress had a negative effect on job performance, so that when perceived stress increased, job performance decreased, but the results were not significant. When assessing self-efficacy, job performance decreased. On its own, this variable was not helpful for improving job performance among first responders, however, these results were significant.

When evaluating the interaction between perceived stress and self-efficacy, this variable showed a strong effect on job performance, so that even with the presence of self-efficacy does moderate perceived stress, resulting in significantly increased job performance among first responders ($t = 2.33, p < .03, CI = .08 - .91$). The

unstandardized beta value ($B = .49$) is within the 95% confidence interval, indicating that in the population, this interaction variable is not zero and that results of repeated tests will show a range within the confidence interval from the population.

The collinearity statistic for both the VIF and tolerance is very low and within the acceptable ranges, indicating that beta coefficients in the model are not closely related and were affected by other predictors. The equation ($Y = \alpha + b_{1X} + b_{2X} + b_{3X}$) best predicting job performance, which was $Y = 3.29 - .32_{(\text{perceived stress})} - .91_{(\text{self-efficacy})} + 1_{(\text{Stress x Efficacy})}$. Self-efficacy in the model did not contribute significantly. Results show that as self-efficacy diminished, job performance increased in the population, and a zero level of contribution was not likely. This indicates that having self-efficacy alone was not beneficial to first responders because it significantly diminished their job performance. When self-efficacy was interacted with perceived stress, the effect changed to positive and accounted for 100% of the job performance of first responders (see Table 9).

Table 9

Summary of Regression Analysis Results

Model	<i>B</i>	<i>SE</i>	β	<i>t</i>	<i>P</i>	95% CI for B			Collinearity	
						<i>LL</i>	<i>UL</i>	Part	Tol	VIF
1 (Constant)	-.23	.49		-.47	.64	-1.21	.74			
Stress Score	.94	.13	.51	7.12	.00	.68	1.20	.52	.95	1.06
Self-Efficacy	-.22	.11	-.15	-2.10	.04	-.43	-.01	-.17	.95	1.06
2 (Constant)	3.29	1.59		2.07	.04	.15	6.43			
Stress Score	-.60	.67	-.32	-.89	.38	-1.92	.73	-.08	.04	1.06
Self- Efficacy	-1.34	.49	-.91	-2.73	.01	-2.31	-.37	-.23	.04	1.06
Perceived Stress x Self-Efficacy	.49	.21	1.00	2.33	.02	.08	.91	.19	.03	1.09

Note. Dependent Variable: Job Performance. CI = confidence interval; *LL* = lower limit;

UL = upper limit.

Table 10*Summary of Findings*

Research Question	Hypothesis	Conclusion
RQ1: Is there a relationship between perceived stress levels measured by the Perceived Stress Scale (PSS) and first responders' job performance measured by the Endicott Work Productivity Scale (EWPS)?	H_01 : There is no relationship between perceived stress levels and first responders' job performance	Rejected
	H_a1 : There is a relationship between perceived stress levels and first responders' job performance.	Accepted
RQ2: Does self-efficacy measured by the General Self-Efficacy Scale (GSES) moderate the relationship between perceived stress levels measured by the Perceived Stress Scale (PSS) and first responders' job performance measured by the Endicott Work Productivity Scale (EWPS)?	H_02 : Self-efficacy does not moderate the relationship between perceived stress and first responders' job performance.	Rejected
	H_a2 : Self-efficacy does moderate the relationship between perceived stress and first responders' job performance	Accepted

Summary of Findings

A summary of findings show that perceived stress had a negative relationship with job performance, so that when perceived stress was reduced, job performance increased. Results indicated that self-efficacy alone was not a factor for increasing job performance, and data shows that when self-efficacy reduced, job performance increased. When perceived stress and self-efficacy were interacted, this had a strong and significant effect on job performance. The results indicate that when first responders experienced perceived stress doing their job together with their self-efficacy, this caused first responders to be more productive, and their job performance increased significantly. In Chapter 5, the limitations, implications and recommendations of the study are discussed. The conclusion summarizes the contribution to future research.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The objective of this study using a quantitative methodology with a correlational design, was to examine the moderating effects of self-efficacy (moderating variable) and job performance (dependent variable) on any correlation between the perceived stress (independent variable) and job performance (dependent variable). The survey method of inquiry was used to collect data among U.S. first responders. This approach was appropriate when using surveys with closed ended questions, collecting numeric data, testing self-efficacy theory, and employing statistical techniques for answering research questions and hypotheses. Using the quantitative methodology was also required when engaging a large sample size ($N = 143$) for collecting data using an online platform. This strategy created abilities for making inferences about the population of first responders, disbursed over a large geographical area such as the United States.

Interpretation of the Findings

The findings for question one revealed statistical evidence that supports a relationship existing between perceived stress and first responders' job performance. The results from this sample are aligned with prior research. Traumatic stressors often occur in a first responders' work environment when they perceive danger to their personal safety or the safety of others. Occupational stressors are also generated, for example, when first responders experienced a disruption in their environment that impacts their ability to perform effectively (Sawhney et al., 2018).

Job stress, considered one of the greatest demands placed on organizational effectiveness, occurs when work demands exceed the employee's ability to manage the workload or feel a lack of control in the work environment. Further, that stress had an impact on productivity resulting from poor time management or the inability to understand specific job requirements (Ekiembor, 2019).

Bandura (1997) described self-efficacy as an individual's perception of their ability to cope with stressful experiences and completing assigned tasks. Bandura argued that belief contributes to the expectation of individuals when meeting desired outcomes and when maintaining composure needed for overcoming obstacles during challenging encounters. Additionally, individuals who experience a higher level of self-efficacy are likely to achieve higher levels of success based upon determination.

Whether individuals are first responders or members of other professions, studies have shown that self-efficacy can have a positive influence that enhances the effectiveness of employees' performance in various work environments (De Clercq et al., 2018). The findings for research question number two revealed that as self-efficacy diminished, perceived stress increased. When self-efficacy was interacted with job performance, the influence of self-efficacy changed. Having self-efficacy together with job performance had a moderating influence on perceived stress.

Limitations of the Study

Individuals participating in a research study in response to an online survey do so on a volunteer basis. Although the study was available and remained active for several

months to allow access for participants, there was no way to control the rate of response regarding how expeditiously the surveys were completed. This limitation required developing patience during slower response time periods until the desired sample size was obtained.

Another limitation experienced during the study was attrition from some participants failing to complete surveys resulting in eliminating the data from consideration. To address the threat of construct validity and the possibility for experiencing Type II error a power level of 95% was used for analyzing the data obtained in the study (Garcia-Perez, 2012).

Recommendations

First responders work in a potentially hazardous work environment where reoccurring exposure to life threatening events can result in injury to members of the public or their peers (Lee et al., 2019). Perceived stress can occur when first responders experience a lack of control in their work environment or when clearly defined tasks are not identified (Okeke et al., 2016). Emergency response managers are responsible for the safety and welfare of their personnel. This can be realized by creating an atmosphere of support that encourages enhanced communication and through providing appropriate training that prepares personnel to perform their job responsibilities effectively, and to continue functioning at a competent level after exposure to traumatic events.

The result of the study provides insight for first response managers regarding the relationship that exists between perceived stress and first responders' job performance

while moderated by self-efficacy. Equipped with this knowledge, managers should be mindful when developing training that prepares responders first for meeting logistical needs to perform physical tasks, and to create an outlet to enhance stress management.

My recommendation for increasing self-efficacy is to practice flexibility. Maintaining a willingness to adapt, when necessary, by including behavior that prioritizes self-care. Possessing organizational awareness through training and enhanced communication can contribute to an individual's confidence level and personal commitment for achieving goals (Makara-Studinska et al., 2020).

As a final recommendation, training for stress management should be conducted in an environment where participants can feel comfortable discussing their experiences and associated feelings without concern for censorship or judgement. In previous studies, a form of stress management that was used successfully in the United States is CISD (Straud et al., 2018). It is recommended that this previously successful form of stress management be even more widely encouraged by managers. This targeted approach would be designed to establish consistency in care for first responders in need of assistance with stress management.

Recommendations for future research are that incorporating additional types of research such as qualitative research may be advantageous where participants are interviewed, and their experiences are included for consideration. Providing insight for executives who may not be as informed of the work environment as necessary for change to occur may result from additional research.

Implications

Positive Social Change

Positive social change results when an attitude adjustment or a paradigm shift occurs. When the outcome impacts members of the public or professional employees who provide service for public safety in a positive way, the adjustments may prove beneficial for all concerned. Communication that involves open dialogue on a regular basis is advisable and promotes a positive work environment. When individuals have a sense that their input is valued and there is an option available to them where they can be heard, it creates a potential for first responders to experience a sense of belonging. Professionals with the responsibility for the welfare of others who are accustomed to working under stressful circumstances and expected to perform at an optimal level still require support even if they do not request it. The role of management becomes significant to ensure the entire operation, especially providing care for the most valued asset, all first responders who may experience stress in the workplace. The implications for positive social change include the potential for emergency response managers to establish policies and procedures that mitigate stress while enhancing the quality of work life for all U.S. first responders.

Conclusion

The aim of the study was to provide new knowledge for first responder administrators to use in creating training and enhanced support systems to prepare first responders to manage the effects of perceived stress. The training that informs and

supports those individuals who need it most may improve job performance, resulting in an enhanced quality of work life. Utilizing individuals specially trained to create programs designed to educate personnel and management in policies and newly created procedures, contributes to a positive work atmosphere.

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Appendix A: Permission to Use the Perceived Stress Scale

Diane Craig
 To: scohen@cmu.edu
 Ms. Diane Craig Sunday, June 26, 2016

Sun, June 26, 2016 at 11:13

Sheldon Cohen:

My name is Diane Craig, and I am a doctoral student conducting a research study at Walden University. I am respectfully requesting your permission to use the Perceived Stress Scale for Research I am conducting on the effects of stress on First responders' Job Performance.

The scale can be found in the following publications:

Cohen, S., Mamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of Health and Social Behavior*, 24, 386-396.

Spacapan, S. and Oskam, S. (Eds.) *The Social Psychology of Health*. Newbury Park, CA: Sage, 1988.

Your consideration is greatly appreciated,

Ms. Diane Craig
 Walden University
 Doctoral Student

Sheldon Cohen<scohen@cmu.edu>
 To: Diane Craig <email redacted>

Sun, Jun 26, 2016 at 12:11PM

Diane, you are welcome to use the PSS in your project. sc

From: Diane Craig [email redacted]
 Sent: Sunday, June 26, 2016 2:13 PM
 Subject: Re: Perceived Stress Scale

Appendix B: Permission to Use the Self-Efficacy Scale

Diane Craig

June 24

Ms. Diane Craig
Friday, June 24, 2016
Prof. Dr. Ralf Schwarzer

My name is Diane Craig, and I am a doctoral student conducting a research study at Walden University. I am respectfully requesting your permission to use the General Self-Efficacy Scale for research I am conducting on the effects of stress on first responders' Job Performance.

The scale can be found at <http://userpage.fu-berlin.de/~health/selfscale.htm>
Your consideration is greatly appreciated.

Sincerely,

Ms. Diane Craig
Walden University
Doctoral Student

Reply Forward
Schwarzer, Ralf<ralf.schwarzer@fu-berlin.de>

June 24

To me

Yes

Prof. Dr. Ralf Schwarzer
Freie Universitat Berlin, Psychology
Habelschwerdter Allee 45
14195 Berlin, Germany
Email ralf.schwarzer@fu-belin.de
WEB <http://my.psyc.de>
ORCID <http://orcid.org/0000-0002-0069-3826> 74
Twitter <https://twitter.com/Schwarzer> 1
BLOG <https://the.meritus.wordpress.com/>

Appendix C: Permission to Use the Work Productivity Scale

Re: Endicott Work Productivity Scale

Diane Craig

June 24

to je 10

Ms. Diane Craig
Friday, June 24, 2016
Jean Endicott PhD
Department of Research
Assessment and Training

My name is Diane Craig, and I am a doctoral student conducting a research study at Walden University. I am respectfully requesting your permission to use the Endicott Work Productivity Scale for research I am conducting on the effects of stress on first responders' Job Performance.

The scale can be found at the following:
File://F:/Chapter%203/Measuring%Employee%20Productivity%Endicott%20
Work%20Productivity% Scale.pdf

Your consideration is greatly appreciated,

Ms. Diane Craig
Walden University
Doctoral Student

Reply Forward

Endicott, Jean <jeanje10@cumc.columbia.edu>

June 29

To me

You definitely have my permission to use the Endicott Work Productivity Scale for your research. I am attaching the following EWPS materials for your use. A copy of the procedure, scoring instructions, a paper describing the development and testing of the procedure, a list of publications (this list may not be up to date because the person who usually added articles no longer works with me and I don't have funds to hire another.)

Don't hesitate to contact me if you have questions.

From: Diane Craig [email redacted]
Sent: Friday, June 24, 2016 5:37 PM