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Effects of Mass Shootings on Life Satisfaction of First Responders

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Walden University
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Abstract

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MS, Walden University, 2012

BS, Kherson State University, 2005

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Social Psychology

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Abstract

Mass shootings are devastating events that occur in many communities in the United States. Mass shootings bring significant psychological distress and contribute to the development of trauma. The communities affected by mass shootings rely on an effective and efficient response from first responders who assist survivors by providing psychological and physical assistance. Because first responders are the first to deal with the aftermath of mass shootings, they assume immediate secondary trauma. The purpose of this quantitative correlational study was to examine whether a statistically significant relationship existed between the independent variables of post-traumatic stress disorder (PTSD), anxiety, and the three dimensions of burnout (Maslach Burnout Inventory [MBI] emotional exhaustion, MBI depersonalization, and MBI personal achievement) and the dependent variable of life satisfaction among first responders who responded to a mass shooting. The hedonic treadmill model, the cognitive model of PTSD, the emotion dysregulation model of anxiety, and a multidimensional theory of burnout provided the framework for the study. Survey data were collected from 105 first responders. Multiple linear regression was used to examine and describe the relationships between the independent variables and outcome variable. Results revealed statistically significant relationships between PTSD, anxiety, MBI emotional exhaustion, MBI depersonalization, MBI personal achievement, and life satisfaction of first responders. Leaders of agencies that employ first responders may use the findings to target mental health stigma among first responders and to promote mental health literacy in the workplace leading to positive social change.

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Dedication

This dissertation is dedicated to Jesus Christ, my husband, my daughter, and my family. They always stand behind me no matter what. They provide me with comfort, hope, love, and tremendous support. Nothing would get accomplished without all of you.

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I would like to extend my deepest gratitude to my chairperson, Dr. Jay Greiner; second committee member, Dr. Matthew Geyer, and university research reviewer, Dr. Virginia Salzer, for their enormous support, motivation, encouragement, and guidance that helped me navigate through this doctoral journey. Thank you, Dr. Greiner, for everything! Without your mentorship and positive attitude, I would not have been able to complete my study in such a short period of time. Your patience, willingness to help me, and dedication to my success made this whole process so much better. You rock! Thank you, Dr. Geyer, for challenging me and pushing me to critically evaluate my work. Your input helped me better understand what I needed to develop a solid manuscript. Thank you, Dr. Salzer, for your feedback and input.

I would also like to thank my amazing family. My husband, Gilbert; my daughter, Sasha; and my family who believed in me and my abilities to complete the program. Honey, you made tons of sacrifices so I would be able to focus on my dissertation. Thank you, honey, for your love, support, patience, confidence in me, and never-ending encouragement throughout this journey. To Sasha, I hope my experience motivates you to pursue your dreams and become who you want to be. Thank you, God, for giving me the health and the resources to get through this process.

Lastly, I want to thank my amazing friend and mentor, Dr. Kim Morse. Your encouragement and late-night conversations kept me going and helped me achieve my goal. I appreciate your time, your jokes, and your guidance throughout this challenging process. Thank you!

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Chapter 1: Introduction to the Study

In recent years, the United States has witnessed a significant increase in deadly mass shootings (Lowe & Galea, 2017). The psychological ramifications of witnessing or experiencing a mass shooting are often serious (Littleton et al., 2009). Mass shootings cause pain and sorrow and claim dozens of innocent lives. The shooting at Virginia Technological Institute that took place on April 16, 2007, in Blacksburg, Virginia claimed 32 lives and left at least 25 individuals wounded (Day et al., 2017). The shooting at Sandy Hook Elementary School that occurred on December 14, 2012, in Newton, Connecticut claimed 28 lives and caused two non-life-threatening injuries (Wombacher et al., 2017). The shooting at Pulse Nightclub in Orlando, Florida that happened on June 12, 2016, claimed 49 lives, leaving 53 individuals injured (Molina et al., 2019). The Las Vegas, Nevada mass shooting on October 1, 2017, took lives of 58 individuals and left over 800 with firearm wounds and other injuries (Grech, 2020; Reeping et al., 2020; Wallace & Loffi, 2017). The Stoneman Douglas High School shooting in Parkland, Florida, also referred as the Valentine massacre, that happened on February 14, 2018, took 17 lives and inflicted injuries to 17 other individuals (Fallucco et al., 2020). The shooting at Walmart in El Paso, Texas that happened on August 3, 2019, took lives of 23 citizens with 26 injured, while the shooting in Dayton, Ohio on August 4, 2019, claimed nine lives leaving 27 individuals hurt and wounded (Science Direct, 2019).

The current scientific literature did not provide a clear definition of the term *mass shooting*; however, some researchers attempted to coin a definition of the term (Lopez et al., 2020). Beard et al. (2019) defined mass shooting as "the number of people injured

within a proximate time and space" (p. 1), while Wilson (2014) described mass shooting as "a gun violence incident that occurs in a public place, involving the deaths or injury of four or more indiscriminately selected victims" (p. 632). Mass shootings have a significant impact on victims, witnesses, and first responders who respond to the shooting (Stanley et al., 2016). Mass shootings contribute to the development of different mental health conditions such as post-traumatic stress disorder (PTSD), anxiety, and burnout, and may also impact overall quality of life and reduce life satisfaction (Grills-Taquechel et al., 2011; Moukarzel et al., 2019; Schnurr et al., 2009).

Life satisfaction is the ability to be content with life circumstances and have a sense of peace no matter what occurs in life (Bartels, 2015). Life satisfaction is key to physical and psychological well-being (Di Castro et al., 2018). Research has shown that a greater level of life satisfaction is associated with a higher level of resiliency to stress, higher self-esteem, lower burnout, and overall better physical and mental health (Lala et al., 2016; Maslach & Leiter, 2016; Tas & Iskender, 2018). Prior research supported a correlational relationship between PTSD and life satisfaction (Berle et al., 2018; Karatzias et al., 2013), anxiety and life satisfaction (Bastos Machado de Resende et al., 2020; Grills-Taquechel et al., 2011), and the three dimensions of burnout (Maslach Burnout Inventory [MBI] emotional exhaustion, MBI depersonalization, and MBI personal achievement) and life satisfaction (Lala et al., 2016; Moukarzel et al., 2019). However, current literature had not addressed how multiple variables such as PTSD, anxiety, and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) affect life satisfaction. Further

research was needed to understand how multiple variables may impact life satisfaction of first responders (see Chatzea et al., 2018).

The current quantitative study addressed how five independent or predictor variables (PTSD, anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) impacted one dependent or outcome variable (life satisfaction). This study provided clarity and filled the gap in literature regarding the lack of information on how multiple variables impact life satisfaction. The independent variables were PTSD, anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement. The dependent variable was life satisfaction of first responders. Four assessment tools were used to gather data and assess all variables. Symptoms of PTSD were measured using the Short Post-Traumatic Stress Disorder Rating Interview (SPRINT; Vaishnavi et al., 2006); symptoms of anxiety were measured by the Generalized Anxiety Disorder - 7 scale (GAD-7; Spitzer et al., 2006); symptoms of emotional exhaustion, depersonalization, and personal achievement were measured by the MBI (Bakker et al., 2002); and life satisfaction was measured by the Satisfaction with Life Scale (SWLS; Diener et al., 1985).

Researcher used multiple linear regression to analyze the collected data and to assess the correlational relationship between the independent variables and life satisfaction of first responders. Findings of this study may provide new knowledge about life satisfaction of first responders. Multiple linear regression analysis was used to evaluate the relationship between each independent variable and the dependent variable (life satisfaction) and also between all five independent variables and life satisfaction.

Multiple linear regression analysis revealed which independent variable had the greatest impact on life satisfaction. The results of this study could be beneficial for social psychologists who strive to understand the impact of social events on individuals, and how those social events contribute to changes in human behavior and attitude.

Background

Limited research existed regarding the correlational relationship between the independent variables and life satisfaction of first responders. Exploration of the literature led to the discovery of a gap and formulation of the purpose of the study. According to Bavolar (2017) and Desrumaux et al. (2017), life satisfaction is one of the most important components of everyday living. Life satisfaction is connected to many factors including but not limited to psychological well-being, physical health, financial well-being, and social wellness (Diener et al., 2006). According to Stanley et al. (2016), first responders often experience job-related stressors that can have serious impacts on their mental and physical health. Research confirmed that first responders face difficult occupational challenges that can threaten their life and can contribute to the development of mental health problems such as PTSD (Klimley et al., 2018).

Recent literature indicated possible factors that may contribute to difficulty reaching life satisfaction in first responders. Wilson (2014, 2015) discussed the relationship between human-made mass violence and the development of PTSD symptoms in first responders. Wilson (2014, 2015) identified the probable correlational relationship between mass violence and the development of PTSD symptoms among first

responders. Wilson (2015) called for additional research to address the connection between mass shootings and the development of PTSD symptoms in first responders.

Boffa et al. (2016) addressed the implications of campus shootings on the development of anxiety and PTSD. The study was limited in sample size, and future research with at-risk populations such as the military was recommended (Boffa et al., 2016). J. K. Lee et al. (2016) stressed the importance of self-resilience in police officers to reduce the possibility of the development of PTSD and anxiety following a critical incident, while Vieselmeyer et al. (2017) discussed the role of resilience in the relationship between mass shootings and the development of PTSD symptoms following the shooting at a university campus.

Klimley et al. (2018) found several significant limitations in current literature on PTSD and life satisfaction in first responders. Berle et al. (2018) and Karatzias et al. (2013) examined the connection between life satisfaction and PTSD. Motreff et al. (2020) discovered that as a result of several terrorist attacks in France in 2015, a high percentage of first responders who responded to the attacks had demonstrated some signs of PTSD. Findings from Stanley et al.'s (2016) study revealed that police officers, firefighters, EMTs, and paramedics were at a higher risk for suicidal thoughts and PTSD than those in other occupations.

Sabarwal and Sharma (2019) examined the relationship between emotional intelligence and the job satisfaction of police personnel. This study was limited by its focus on only one police department, and Sabarwal and Sharma recommended having more variables and examining other occupational groups of first responders in future

studies. Finally, Tarcan et al. (2017) examined the relationship between burnout and career satisfaction among emergency department health professionals and found a significant connection between job satisfaction, burnout, and symptoms of anxiety.

Problem Statement

In the past two decades, the United States has experienced dozens of mass shootings (Beard et al., 2019). The communities affected by mass shootings rely on an effective and efficient response from first responders (Beard et al., 2019). First responders are typically the first to arrive on the scene of mass shootings and face difficult and life-threatening circumstances (Chopko et al., 2015). First responders assist mass shooting survivors by providing psychological and physical assistance. Because first responders are the first to deal with the affected population, they absorb the strongest and most unfiltered reactions (Ellrich & Baier, 2015; Lanza et al., 2018). Therefore, first responders, by proxy, assume immediate secondary trauma (Lewis-Schroeder et al., 2018).

Recent literature addressed the long-term implications of mass shootings on different populations and indicated the correlational relationship between mass shootings and the development of PTSD (Potard et al., 2018; Wilson, 2015). Literature also indicated a relationship between mass shootings and anxiety disorder (Grills-Taquechel et al., 2011). Additionally, a relationship was established between mass shootings and MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement (Day et al., 2017; McCarty et al., 2019). As a result, individuals reported experiencing a significantly lower quality of life (Bastos Machado de Resende et al., 2020; Berle et al., 2018;

Moukarzel et al., 2019). Tas and Iskender (2018) found that life satisfaction was associated with overall mental and physical well-being. A higher level of life satisfaction led to fewer chronic physical conditions, lower levels of anxiety, and reduced burnout (Maslach & Leiter, 2016). The highest level of effectiveness could have been measured by lower long-term effects of PTSD by allowing the individuals to identify the impactful levels of single event traumas (Potard et al., 2018). Although research supported the relationships between each independent variable in the current study and life satisfaction, further research was needed on how multiple variables affect life satisfaction among other groups such as first responders (see Sabarwal & Sharma, 2019; Wilson, 2015). It was not known whether or to what extent a statistically significant relationship existed between PTSD, anxiety, the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) and life satisfaction of first responders who responded to a mass shooting. A gap existed in the literature regarding the relationship between the independent variables and life satisfaction among first responders (see Cenk, 2018; Sabarwal & Sharma, 2019; Schnurr et al., 2009). I sought to fill that gap by examining the correlational relationship between the independent variables and life satisfaction of first responders.

Purpose of the Study

The purpose of this quantitative correlational study was to examine whether a statistically significant relationship existed between PTSD, anxiety, and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) and life satisfaction of first responders who responded to a mass

shooting. I attempted to address the gap in the literature by examining whether mass shootings had long-term effects such as PTSD, anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement on first responders. A quantitative evaluation was conducted to determine whether a statistically significant relationship existed between the five predictor variables and the outcome variable. The predictor variables in this study were PTSD, anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement. The outcome variable was life satisfaction of first responders. The results provided insights regarding the influence of mass shootings on the development of PTSD, anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement among first responders. I examined the effect these factors had on life satisfaction through an objective frame. The target population for this study included law enforcement officers (police officers, state troopers, federal agents, sheriff's deputies, constables, and school resource officers), paramedics, EMTs, firefighters, and trauma nurses.

Research Questions and Hypotheses

This quantitative correlational study included the independent variables or predictor variables of PTSD, anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement, and the dependent variable or outcome variable of life satisfaction. The five independent variables were used in five research questions designed to address the problem statement.

The following research questions and hypotheses guided this study:

RQ1: Is there a statistically significant relationship between PTSD and life satisfaction of first responders while controlling for anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement?

H_o1: There is no statistically significant relationship between PTSD and life satisfaction of first responders while controlling for anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement.

H_a1: There is a statistically significant relationship between PTSD and life satisfaction of first responders while controlling for anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement.

RQ2: Is there a statistically significant relationship between anxiety and life satisfaction of first responders while controlling for PTSD, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement?

H_o2: There is no statistically significant relationship between anxiety and life satisfaction of first responders while controlling for PTSD, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement.

H_a2: There is a statistically significant relationship between anxiety and life satisfaction of first responders while controlling for PTSD, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement.

RQ3: Is there a statistically significant relationship between MBI emotional exhaustion and life satisfaction of first responders while controlling for PTSD, anxiety, MBI depersonalization, and MBI personal achievement?

H_o3: There is no statistically significant relationship between MBI emotional exhaustion and life satisfaction of first responders while controlling for PTSD, anxiety, MBI depersonalization, and MBI personal achievement.

H_a3: There is a statistically significant relationship between MBI emotional exhaustion and life satisfaction of first responders while controlling for PTSD, anxiety, MBI depersonalization, and MBI personal achievement.

RQ4: Is there a statistically significant relationship between MBI depersonalization and life satisfaction of first responders while controlling for PTSD, anxiety, MBI emotional exhaustion, and MBI personal achievement?

H_o4: There is no statistically significant relationship between MBI depersonalization and life satisfaction of first responders while controlling for PTSD, anxiety, MBI emotional exhaustion, and MBI personal achievement.

H_a4: There is a statistically significant relationship between MBI depersonalization and life satisfaction of first responders while controlling for PTSD, anxiety, MBI emotional exhaustion, and MBI personal achievement.

RQ5: Is there a statistically significant relationship between MBI personal achievement and life satisfaction of first responders while controlling for PTSD, anxiety, MBI emotional exhaustion, and MBI depersonalization?

H_o5: There is no statistically significant relationship between MBI personal achievement and life satisfaction of first responders while controlling for PTSD, anxiety, MBI emotional exhaustion, and MBI depersonalization.

H_a5: There is a statistically significant relationship between MBI personal achievement and life satisfaction of first responders while controlling for PTSD, anxiety, MBI emotional exhaustion, and MBI depersonalization.

Theoretical Framework

The theoretical framework provided the foundation for the study and served as the roadmap to examine the relationship between the independent variables and dependent variable (see Chirico, 2016). The researcher employed a theoretical framework to examine the correlational relationships between the independent variables of PTSD, anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement and the dependent variable of life satisfaction, while providing an explanation and an understanding of how life satisfaction of first responders was affected by the independent variables. Results of this study may help other researchers gain significant insight about the long-term impact of mass shootings on life satisfaction of first responders.

This quantitative correlational study included four theoretical platforms. The theories that were employed in this study were the hedonic treadmill model, the cognitive model of PTSD, the emotion dysregulation model of anxiety, and a multidimensional theory of burnout. The hedonic treadmill model states that people have the ability to be resilient in positive and negative circumstances, and to return to their previous state of neutrality (Brickman & Campbell, 1971; Diener et al., 2006; Di Fabio & Palazzeschi, 2015; Gleibs et al., 2013). The cognitive model of PTSD suggests that the successful treatment of PTSD starts with identifying three major key components that cause the

disturbance (Lancaster et al., 2011). These components are intrusive unprocessed memories, irrational beliefs about the self, and maladaptive coping strategies (Berntsen et al., 2008; Ehlers & Clark, 2000). The emotion dysregulation model of anxiety states that emotional dysregulation depends on the person's affective style (Hofmann et al., 2012; Mennin et al., 2005). People respond in a positive or negative manner to certain triggering events based on their individual predispositions (Suveg et al., 2010). A multidimensional theory of burnout explains burnout by using three different factors: MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement (Bakker et al., 2002; R. T. Lee & Ashforth, 1990; Maslach, 2017; Maslach & Leiter, 2016). These theories were used throughout the current study to explain, understand, and inform variables that had an effect on life satisfaction of first responders.

Nature of the Study

The researcher used a correlational design to examine and describe the relationships between the independent variables and dependent variable. The independent variables included PTSD, anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement, as reported by different first responders. The dependent variable was life satisfaction. The purpose of correlational research is to determine whether a connection exists between variables, and the extent of the connection, if any (Graßhoff et al., 2020).

The correlational design was selected for this study because there were multiple predictor variables (PTSD, anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) and one outcome variable (life satisfaction). The

hypotheses were developed to test the relationship between the predictor variables and outcome variable. The SPRINT was used to measure the first predictor variable: PTSD. The GAD-7 was used to measure the second predictor variable: anxiety. The MBI was used to measure the third, fourth, and fifth predictor variables: MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement. The outcome variable life satisfaction was measured using the SWLS.

All assessment tools and scales that were selected to measure the variables in this study were proven to be reliable and valid. The SPRINT is a self-report screening tool to measure the core symptoms of PTSD (Connor & Davidson, 2001). The GAD-7 is a psychological screening measure to assess symptoms of anxiety (S. U. Johnson et al., 2019). The MBI is a psychological assessment to measure occupational burnout (Bakker et al., 2002; Pérez-Mármol & Brown, 2019). The SWLS is a self-report scale to measure the life satisfaction of individuals (Pavot et al., 1991; Pavot & Diener, 1993).

The data for the current study were collected by using the internet platform ResearchAndMe.com and through the survey tool Microsoft Forms. I used the survey collection method to gather data. The target population was first responders who are trained to respond to emergency situations (see Lanza et al., 2018). All participants completed the survey voluntarily. No compensation was offered for participation in the study. The survey responses were sent to me for analysis after participants completed the survey. Anonymity was maintained at all times because the survey did not collect personal identifiable information from the respondents. I was the only individual who received the survey responses, and I did not know who completed the survey.

Definition of Terms

Anxiety (independent variable): Excessive worry, fear, restlessness, and the apprehension that occurs most days and interferes with an individual's daily functioning (American Psychiatric Association [APA], 2013).

Burnout (independent variable): A psychological syndrome characterized by emotional exhaustion, depersonalization, and a diminished sense of personal accomplishment that occurs due to chronic exposure to work stress (Maslach & Jackson, 1981; O'Connor et al., 2018).

Cognitive model of PTSD: A theoretical concept proposed by Ehlers and Clark (2000) to evaluate the negative impact of trauma on the development of PTSD.

Compassion fatigue: A preoccupation with absorbing stress experienced by other individuals, and developing vicarious trauma (Andersen & Papazoglou, 2015).

Compassion satisfaction: A sense of achievement that occurs as a result of helping people (Andersen & Papazoglou, 2015).

Depersonalization (independent variable): A distant or indifferent attitude toward work that manifests as a cynical attitude toward people (Maslach & Leiter, 2016).

Emergency medical technician (EMT): An individual who is employed by an organization or agency that responds to medical emergencies. The scope of duties includes CPR, oxygen, glucose, and other external treatments (Stanley et al., 2016; Tarcan et al., 2017).

Emotion dysregulation model of anxiety: A theoretical framework composed by Mennin to explain, understand, and treat anxiety (Mennin et al., 2002; Suveg et al., 2010).

Emotional exhaustion (independent variable): Feeling fatigued and drained of emotional and physical resources (Maslach & Leiter, 2016; O'Connor et al., 2018).

First responder: An individual who is trained to respond to emergency situations; these individuals can include law enforcement officers, firefighters, paramedics, and EMTs (Lanza et al., 2018, Motreff et al., 2020).

Hedonic treadmill: The original hedonic adaptation theory coined by Brickman and Campbell (1971) and adapted by Diener et al. (2006). The hedonic treadmill model is the universal approach to understanding the purpose and functioning of happiness (Shinde, 2017).

Law enforcement officers: People whose primary responsibilities include enforcing laws (O. Johnson et al., 2019; McCarty et al., 2019). The following individuals are considered law enforcement officers: police officers, sheriff's deputies, customs and immigration officers, state troopers/officers, special agents, criminal investigators, border patrol agents, court officers, probation officers, parole officers, constables, marshals, detention officers, and correction officers (Wallace & Loffi, 2017).

Life satisfaction (dependent variable): A construct used to assess and evaluate a person's overall quality of life (Bavolar, 2017; Bopp et al., 2015).

Mass shooting: As described by Wilson (2014), a mass shooting is an act of gun violence that occurs in a public place involving the death or injury of four or more individuals.

Multidimensional model of burnout: A theoretical model developed by Maslach to describe, evaluate, and define burnout (Maslach, 1993, 2017; Maslach & Jackson, 1981).

Paramedic: An advanced medical provider employed by emergency services whose scope of duties includes administering IVs, external pacemakers, and other procedures that require internal treatments (Stanley et al., 2016; ALmutairi & El Mahalli, 2020).

Personal achievement (independent variable): A sense of accomplishment (Maslach et al., 2001; Maslach & Leiter, 2016).

Post-traumatic stress disorder (PTSD; independent variable): A trauma-related disorder that may occur after exposure to a life-threatening event, injury, or act of violence following direct exposure or learning about the incident from others (APA, 2013).

Quality of life: A person's overall level of physical, psychological, and social well-being (Jovanović, 2016; Schnurr & Lunney, 2016).

Assumptions

An assumption in psychological research refers to a speculation that allows researchers to accept specific research procedures as truth without providing scientific proof (Leedy & Ormrod, 2015). Credible scientific research relies on assumptions

because they guide the study and inform the research procedures (Murray, 1951). The following assumptions were present in the current study:

1. I assumed that the sample identified to participate in this study would represent the target population, which was composed of first responders.
2. I assumed that all participants would read the instructions carefully and accurately and would answer survey questions truthfully. Honest and accurate responses are necessary to maintain the validity of results and ensure that a correlational relationship between variables does not get affected.
3. I assumed that the quantitative research method was the appropriate method for this study. Quantitative methodology is commonly used in life satisfaction studies (Desrumaux et al., 2017; Flinchbaugh et al., 2015; Tas & Iskender, 2018).
4. I assumed that the theories used in this study, such as a cognitive model of PTSD, an emotion dysregulation model of anxiety, a multidimensional model of burnout, and the hedonic treadmill theory, could be applied to the first responder population.
5. I assumed that the research recruitment platform ResearchAndMe.com used in this study would be able to protect participants, ensure their privacy, and maintain the anonymity of the data collected during the data collection phase. The privacy policy was posted on the ResearchAndMe.com website for public access, and could be accessed by anyone.

6. I assumed that the SPRINT (Connor & Davidson, 2001; Norris et al., 2008; Vaishnavi et al., 2006) was a valid and reliable assessment to measure symptoms of PTSD. The validity and reliability of this rating were examined and established by Connor and Davidson (2001) and Norris et al. (2008).
7. I assumed that the GAD-7 (S. U. Johnson et al., 2019; Jordan et al., 2017; Kertz et al., 2013; Spitzer et al., 2006) was a valid and reliable tool to measure symptoms of anxiety. The validity and reliability of GAD-7 were explored and confirmed by Kertz et al. (2013), Spitzer et al. (2006), and Tiirikainen et al. (2018).
8. I assumed that the MBI (Bakker et al., 2002; Perez-Marmol & Brown, 2019; Taris et al., 1999) was a valid and reliable assessment to measure the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement). The MBI's validity and reliability were examined and validated in prior studies (Bria et al., 2014; Perez-Marmol & Brown, 2019; Poghosyan et al., 2009).
9. I assumed that the SWLS (Diener et al., 1985; Pavot & Diener, 1993) was a valid and reliable assessment tool to measure life satisfaction. The literature supported the validity and reliability of the SWLS (Jovanović, 2016; Lopez-Ortega et al., 2016; Lopez-Ramos et al., 2018; Pavot et al., 1991).
10. I assumed that the findings of this quantitative study would be generalizable to the target population of first responders in the United States.

Scope and Delimitations

The purpose of this study was to examine life satisfaction of first responders who had experienced a mass shooting. The first delimitation was the correlational design in which I examined the relationship between the independent variables and life satisfaction of first responders who responded to at least one mass shooting during their career. The independent variables were PTSD, anxiety, and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement). The dependent variable was life satisfaction of first responders. The survey results were analyzed using multiple regression analysis. The purpose of the correlational design was to examine the relationships between variables, but not the cause-and-effect relationships. This study was delimited to correlations.

Another delimitation of this study was related to internal validity. To maintain the internal validity of this study, a large sample size needed to be drawn from the target population. A G*Power calculation indicated the minimum number of 92 participants for this study (see Appendix A). This helped me decrease bias and maintain the internal validity by reducing the possibility of a Type I or Type II errors in statistical analysis, where the Type I error is the wrongful rejection of the true null hypothesis. This error can also be referred to as a false positive. The Type II error is the failure to reject a false null hypothesis, also referred to as false negative (Leedy & Ormrod, 2016).

Another delimitation was linked to the target population. The target population selected for this quantitative study was drawn from a pool of first responders who reside in the United States. I did not attempt to generalize the findings of this study to other

populations (i.e., teachers, physicians, retail workers, social workers) or first responders in other countries.

Limitations

This study presented several limitations. Bias related to self-reporting was a possible limitation in this study. Overreporting or underreporting when answering the survey questions may lead to inaccurate results and possible errors in the findings.

This study was conducted using two sampling methods: purposive and snowball. Both sampling methods are nonexperimental nonprobability methods (Leedy & Ormrod, 2015). A purposive method of sampling is based on the purpose of the study (Valerio et al., 2016). This type of recruitment was beneficial for this study so that findings could be generalized to all first responders who reside in the United States (see Valerio et al., 2016). Snowball sampling allows the researcher to recruit participants by sharing the information with a small group of individuals and asking them to share the study with other individuals who might meet the criteria to participate in the study (Valerio et al., 2016). This type of sampling helps researchers obtain the required number of participants in a shorter period of time (Valerio et al., 2016). This limitation was related to the use of ResearchAndMe.com to recruit potential respondents. This approach relied on the recruitment tool for the purpose of recruiting and ensuring that respondents completed the survey.

Another limitation was associated with the scope of the study. The scope of this research was narrowed to five independent variables (PTSD, anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) and one dependent

variable (life satisfaction). I examined the possible correlational relationship between the independent and dependent variables. The literature indicated that other important factors such as depression, quality of sleep, and pain might also play a role in life satisfaction of first responders (Griffith et al., 2019). These factors were excluded from this study.

Another limitation was associated with the correlational design, which was limited to the examination of predictive relationships, not causation (see Leedy & Ormrod, 2015). The purpose of this study was to determine whether a relationship existed between PTSD, anxiety, MBI emotional exhaustion, MBI depersonalization, MBI personal achievement, and life satisfaction. The cause-and-effect relationship between the variables was not examined in this study. If such a relationship existed, further research would be needed to address it.

The final limitation was associated with the assessment tools used in this study: the SPRINT (Connor & Davidson, 2001; Kim et al., 2008; Leiva-Bianchi & Gallardo, 2013), the GAD-7 (Kertz et al., 2013; Spitzer et al., 2006; Tiirikainen et al., 2018), the MBI (Bakker et al., 2002; Poghosyan et al., 2009; Maslach, 1993), and the SWLS (Diener et al., 1985; Jovanović, 2016; Pavot & Diener, 1993). Each assessment tool used in this study was a Likert-type measure that produced numerical data. According to Boari and Ruscone (2015), most statistical procedures require converting numerical data into interval data for easier analysis. However, numerical and interval data may not have accurately represented the experiences that first responders faced. For best results, I analyzed the data reported by the participants.

Significance

Prior research had focused on the relationship between PTSD, anxiety, the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) and life satisfaction separately. The relationship between PTSD and life satisfaction was examined by Berle et al. (2018), Karatzias et al. (2013), and Schnurr et al. (2009). The relationship between anxiety disorder and life satisfaction was explored and documented by Bastos Machado de Resende et al. (2020) and Grills-Taquechel et al. (2011). Although the relationship between the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) and life satisfaction was examined by Lala et al. (2016) and Moukarzel et al. (2019), current literature indicated that further research was needed to examine the relationships between each independent variable and life satisfaction among first responders (Cenk, 2018; Sabarwal & Sharma, 2019; Schnurr et al., 2009). This need created a gap in the current literature regarding the relationship between the independent variables and life satisfaction of first responders (Cenk, 2018; Sabarwal & Sharma, 2019; Schnurr et al., 2009). I sought to address this gap by examining the relationship between five predictor factors and life satisfaction. These factors included PTSD, anxiety, and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement). The correlational design was used to determine whether each independent variable had an effect on life satisfaction. Further, a multiple regression analysis was used to determine whether the presence of multiple independent variables

had an effect on life satisfaction. This analysis provided a greater understanding of the complexity of life satisfaction among first responders.

The findings of this study may be used to introduce training programs for first responders to better understand the impact of mass shootings on this population. This study may also raise public awareness of the challenges and consequences that first responders encounter following a mass shooting, and how those challenges affect their mental health and life satisfaction. Lastly, a practical implication may be the implementation of mental health programs to help first responders cope with the aftermath of mass shootings with the goal of increasing their quality of life and overall life satisfaction.

Summary

Chapter 1 provided a comprehensive overview of the study and addressed the background that led to the development of the problem statement and purpose of the study and identification of the gap. Research questions and hypotheses were outlined in this chapter to guide the study. The theoretical framework was identified to provide a foundation for this research. The nature of the study was discussed to identify the research design and assessment instruments that were used to measure the variables. The delimitations, assumptions, and limitations were stated in this chapter to outline the scope of this research. All of the components discussed in this chapter are significant factors that explained and guided this study.

The purpose of this quantitative correlational study was to examine whether a statistically significant relationship existed between PTSD, anxiety, the three dimensions

of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) and life satisfaction of first responders who responded to a mass shooting. The literature supported the relationships between each independent variable and life satisfaction among different populations (Berle et al., 2018; Lala et al., 2016; Grills-Taquechel et al., 2011); however, a gap existed in the literature regarding life satisfaction among first responders (Cenk, 2018; Sabarwal & Sharma, 2019; Schnurr et al., 2009). I sought to fill that gap by examining the possible correlational relationship between the independent variables and life satisfaction of first responders.

In Chapter 2, I synthesize the academic literature supporting the research. This review focuses on the need for further research on the topic, the literature search strategies, and the gap that was identified based on the exploration of the background information. I explain how the theoretical framework informed the variables in this study. The literature review also provides support for the relationships between PTSD, anxiety, the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) and life satisfaction.

Chapter 2: Literature Review

This chapter includes a review of current academic literature published on the topics of mass shootings, PTSD, anxiety, the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement), and life satisfaction of first responders. This chapter consists of several sections and subsections that address the literature search strategies, gap in the literature, theoretical foundations, current literature, methodology and instrumentation selected for this study, and a summary. The literature search strategy section addresses a variety of strategies that were implemented to conduct a digital search of literature. The identification and review of the gap section includes a review of the current literature that demonstrated the need for continued research to determine the correlational relationship between the study variables. The theoretical foundations section addresses theories and models used in this study. The literature review section provides a summary of the current literature that had been published in recent years on the topic of the study. The section pertaining to methodology and instrumentation provides a rationale, supported by the current literature, for the methodology and instrumentation selection. Finally, a summary provides an overview of the chapter.

Literature Search Strategy

The literature search was executed using a variety of available electronic databases. The key terms of the literature search were *mass shooting*, *mass violence*, *gun violence*, *mass trauma*, *PTSD*, *anxiety*, *burnout*, *dimensions of burnout*, *MBI emotional exhaustion*, *MBI depersonalization*, *MBI personal achievement*, *life satisfaction*,

satisfaction with life, *quality of life*, *first responders*, *law enforcement officers*, *firefighters*, *EMTs*, *paramedics*, *peace officers*, and *police officers*. The databases that were used for this search included PsycARTICLES, PsycINFO, PsycEXTRA, SocINDEX, EBSCOHost, OMICS Open Assess Journals, ScienceDirect, and ProQuest. The databases used to retrieve academic resources such as articles, peer-reviewed articles, published dissertations, brochures, newsletters, and books were accessed through the libraries, peer-reviewed journals, and archives of Walden University, Texas Tech University Health Sciences, University of Texas Southwestern Medical Center, American Counseling Association, Texas Counseling Association, and EMDR International Association.

The literature reviewed from the databases is divided into five sections. Each section pertains to each variable. The sections include mass shootings, PTSD, anxiety, the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement), and life satisfaction. Mass shootings that occurred in the United States within the past two decades are discussed. The causes, development, and treatment options of PTSD are presented. The impact of anxiety on different occupational groups of first responders is explored. An examination of the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) is provided. Finally, the literature pertaining to life satisfaction of first responders is presented. The literature that addressed other occupational groups (i.e., teachers, college professors, physicians, retail workers, social workers, attorneys, etc.) was excluded from the final literature review because it was not relevant to the topic.

The purpose of this literature review was to examine the literature published in the field in the past two decades, as well as recent literature published in the past 5 years, pertaining to the topic of the current study. The literature published in the field prior to 2015 was limited to a few articles due to the length of the review and the availability of more recent research published in the past 5 years. The literature review lays the foundation for this study.

Identification of the Gap

Several researchers sought to explore and understand the phenomenon of mass shootings (Lankford, 2016; Lott & Moody, 2019), PTSD (Ellrich & Baier, 2015; Marchand et al., 2015), anxiety (Derrick et al., 2019; Paulus et al., 2018), the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement; Bakker et al., 2002; Bria et al., 2014; Dolan et al., 2015; Leiter, 1989; O'Connor et al., 2018), and life satisfaction (Bavolar, 2017; Bopp et al., 2015). Current academic literature demonstrated the correlational relationship between mass shootings and the development of PTSD (Potard et al., 2018; Wilson, 2015). Research also supported the correlational relationship between mass shootings and anxiety disorder (Grills-Taquechel et al., 2011). Additional research supported the relationship between mass shootings the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement; Day et al., 2017; Jimenez et al., 2019; McCarty et al., 2019). Finally, research indicated that people who experienced PTSD, anxiety, and symptoms of burnout as a result of mass shootings reported a significantly

lower quality of life (Bastos Machado de Resende et al., 2020; Berle et al., 2018; Moukarzel et al., 2019).

Previous studies addressed the life satisfaction among different occupations (Bopp et al., 2015; Holland et al., 2019); however, a gap existed regarding how multiple variables affect life satisfaction among multiple occupational groups, specifically first responders (Sabarwal & Sharma, 2019; Wilson, 2015). A gap existed in the literature on life satisfaction among first responders (Cenk, 2018; Sabarwal & Sharma, 2019; Schnurr et al., 2009). I sought to address the gap by examining the correlational relationship between these variables and life satisfaction of first responders. Specifically, I examined the correlational relationship between PTSD, anxiety, and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) and life satisfaction.

Theoretical Foundations

The purpose of this study was to examine the correlational relationship between variables addressing the effects of mass shootings and life satisfaction of first responders. Several theoretical models were used to guide the study. The cognitive model of PTSD (Ehlers & Clark, 2000) was used to examine PTSD. The emotion dysregulation model of anxiety (Mennin et al., 2005) was employed to explore anxiety. The multidimensional theory of burnout (Maslach & Jackson, 1981) was used to define the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement). Lastly, the hedonic treadmill model (Brickman & Campbell, 1971) was

used to examine life satisfaction. The following sections explain how each theory defined and informed the variables, and explains the hypotheses for this study.

Cognitive Model of PTSD

The theoretical framework that was used to evaluate PTSD in this study was the cognitive model of PTSD. The cognitive model of PTSD was developed by Ehlers and Clark (2000), who postulated that symptoms of PTSD are rooted in a person's negative cognition. The symptoms of PTSD occur and continue when individuals are unable to process the traumatic event in a healthy way, leading to a belief that a threat still exists (Davidson, 1998; Ehlers & Clark, 2000). This irrational belief can serve as a trigger causing the symptoms of PTSD to persist and evolve (Davidson, 1998; Ehlers & Clark, 2000). Ehlers and Clark (2000) concluded that changing negative cognition would help reduce symptoms of PTSD, eliminating the irrational belief about existing threat.

The primary focus of the cognitive model of PTSD is to explain how negative cognition can impact development of symptoms of PTSD (Berntsen et al., 2008; Ehlers & Clark, 2000; Lancaster et al., 2011). This model was appropriate for the current study because it explains how PTSD emerges, evolves, and impacts individuals' functioning. The purpose of this study was to examine whether a statistically significant relationship existed between PTSD, anxiety, and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) and life satisfaction of first responders who responded to a mass shooting. This theoretical framework served as a guideline for the measurement of PTSD (see Berntsen et al., 2008; Ehlers & Clark, 2000; Lancaster et al., 2011). The instrument that was employed to measure PTSD in this

study was the SPRINT. The permission to use this instrument was obtained from the founder of this assessment tool Dr. Jonathan Davidson.

Emotion Dysregulation Model of Anxiety

The theoretical foundation selected to examine anxiety in this study was the emotion dysregulation model of anxiety founded by Mennin and his colleagues. Mennin (2004) and Mennin et al. (2002, 2005) postulated that individuals who experience emotion dysregulation also experience anxiety. The authors argued that emotion dysregulation occurs due to several factors such as negative cognition, lack of insight of one's emotional state, impulsivity, maladaptive coping strategies, etc. Mennin et al. (2002, 2005) stated that individuals who experience anxiety often develop irrational beliefs about themselves that may lead to a lack of insight about their emotional state, impulsive behavior, and unhealthy coping strategies. Strong emotional responses prevent individuals with anxiety from recognizing destructive emotions that cause anxiety to persist (Mennin, 2004; Mennin et al., 2005). Recognizing the existence of emotion dysregulation can help individuals struggling with anxiety gain control of their responses to situational triggers, reduce the symptoms of anxiety, and regulate their emotions (Mennin et al., 2005).

The emotion dysregulation model of anxiety was the best theory for this quantitative study because it explains the connection between emotion dysregulation and the development of anxiety (see Hofmann et al., 2012). This theory served as a foundation of measurement of anxiety in first responders who were exposed to a mass

shooting. The tool that was used to measure anxiety was the GAD-7. No permission is required to use the GAD-7 tool.

Multidimensional Theory of Burnout

The theoretical framework that was employed to evaluate the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) in this study was the multidimensional theory of burnout. The multidimensional theory of burnout is one of the most commonly used models to define, evaluate, and describe symptoms of burnout, coined by Maslach and Jackson in 1970s (Pérez-Mármol & Brown, 2019). Maslach and Jackson (1981) perceived the phenomenon of burnout as a psychological syndrome characterized by emotional exhaustion, depersonalization, and a diminished sense of personal accomplishment that occurs due to exposure to chronic work-related stress. Emotional exhaustion is a feeling of fatigue and feeling drained of emotional and physical resources (Maslach & Leiter, 2016; O'Connor et al., 2018). Depersonalization is a distant or indifferent attitude toward work that manifests as a cynical attitude toward people (Maslach, 2017; Maslach & Leiter, 2016). Personal achievement is a sense of accomplishment, while lack of personal achievement refers to feelings of inadequacy, inability to achieve goals, and lack of self-confidence (Bianchi et al., 2014; Maslach, 1993; Maslach et al., 2001). To measure the three dimensions of burnout, Maslach developed an assessment tool called the MBI, which has been validated and proven to be one of the most reliable tools for measurement of burnout (Bria et al., 2014; Nguyen et al., 2018; Poghosyan et al., 2009). The permission

to use this instrument was obtained from the founder of this assessment tool Dr. Christina Maslach.

The scope of the multidimensional theory of burnout is limited to work-related circumstances and stressors. The theory cannot cover circumstances that occur outside of employment (Evans & Fischer, 1993). Maslach and Jackson (1981) focused on helping professions such as teachers, mental health professionals, first responders, and medical personnel. For the current study, the multidimensional theory of burnout was used to analyze and understand the impact of the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) on life satisfaction of first responders who had experienced a mass shooting. The multidimensional theory of burnout was the most appropriate theory for the purpose of this study (see Bianchi et al., 2014; Lee & Ashforth, 1990).

Hedonic Treadmill Theory

The theoretical foundation that was used to examine life satisfaction in this study was the hedonic treadmill model. The hedonic treadmill model is based on the original hedonic adaptation theory proposed by Brickman and Campbell (1971). The original hedonic adaptation theory stated that people maintain a constant or neutral level of happiness (Veenhoven, 2003). Brickman and Campbell (1971) argued that positive and negative circumstances have the ability to disrupt levels of happiness, leading people to respond accordingly to events; however, with time individuals adapt to a neutral level of happiness. Brickman and Campbell (1971) considered those fluctuations in happiness as short-lived responses to normal life events, and argued individuals seek those short-lived

experiences to maintain happiness. The hedonic treadmill theory suggests that when individuals experience a disruption in neutral levels of happiness, the result veers the individual away from neutrality and presents new experiences that could lead to a new interpretation so that individuals can sustain a sense of constant happiness (Brickman & Campbell, 1971; Diener et al., 2006).

The hedonic treadmill theory explores happiness and how happiness relates to life satisfaction (Gleibs et al., 2013; Veenhoven, 2003). According to Shinde (2017), the hedonic treadmill model is the universal approach of understanding the purpose and functioning of happiness. The principles of the hedonic treadmill theory can explain how happiness relates to life satisfaction (Di Fabio & Palazzeschi, 2015). Diener et al. (2006) postulated that life satisfaction is based on individual factors and is not externally imposed. According to Diener et al. (2006), life satisfaction is a cognitive internal process that is dependent on the individual's abilities and predispositions. Determinant factors of life satisfaction are based on an individual's life experiences, such as moments of happiness in life that supersede moments of sadness (Diener et al., 2006). For the current study, the hedonic treadmill model served as a guideline for the measurement of life satisfaction. The tool that was used to measure life satisfaction was the SWLS. This scale is copyrighted; however, no permission is needed when used for academic or professional purposes, as long as credit is given to the developers of the scale: Drs. Diener, Emmons, Larsen, and Griffin.

Review of the Literature

The review of the literature section provided the background information regarding mass shootings, PTSD, anxiety, the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement), and life satisfaction. The purpose of this review was to survey the literature and find information that informed the gap and supported the need for additional research on this topic. This section reviewed prior research, and laid the foundation for the study to explore the correlational relationship of the effects of mass shootings, as PTSD, anxiety, and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) on life satisfaction among first responders.

Mass Shootings

Mass shootings are devastating events that occur in many communities in the United States (Lopez et al., 2020; Schildkraut et al., 2020). Mass shootings bring significant psychological distress and contribute to the development of trauma (Showstark, 2019). Some of the most notable communities affected by mass shootings are located in Blacksburg, VA (Virginia Tech University), Newtown, CT (Sandy Hook Elementary School), Orlando, FL (Pulse nightclub), Las Vegas, NV (country music festival), Parkland, FL (Marjory Stoneman Douglas High School), El Paso, TX (Walmart), and Dayton, OH (Ned Peppers Bar). Lowe and Galea (2017) conducted a comprehensive literature review, and discussed the mental health consequences of mass shootings. Authors examined 49 peer-reviewed articles that focused on 15 different mass shootings (Lowe & Galea, 2017). The outcome of the review demonstrated a direct

connection between mass shootings, and the occurrence of multiple psychological conditions such as PTSD, anxiety, and major depression in populations directly and indirectly affected by the event (Lowe & Galea, 2017). Lowe and Galea (2017) suggested the need for longitudinal research to determine the length, and severity of psychological conditions.

The Virginia Tech shooting sparked many nationwide discussions amongst scholars about trauma, prevention of violent events, and related mental health conditions (Day et al., 2017; Scrapa et al., 2014). An article by Littleton et al. (2009) discussed the impact of trauma following the Virginia Tech shooting, and the need for adjustment, and effective coping strategies to deal with the aftermath of the mass tragedy. Littleton et al. (2009) conducted a quantitative survey study with female undergraduate Virginia Tech University students. The sample consisted of 843 participants, who were asked to complete two separate surveys, the first survey was given two months after the shooting, and a second survey was implemented six months after the shooting. Both surveys included depression, anxiety, social support, and resource evaluation scales (Littleton et al., 2009). The findings of the study supported the need for appropriate resource developments to address the effects of post shooting trauma. Implementation of longitudinal study was recommended to examine the impact of resource gain, or loss on post shooting recovery, adjustment, and the ability to function in society (Littleton et al., 2009).

Day et al. (2017) conducted a phenomenological research study examining different types of trauma including shared trauma, vicarious trauma, compassion fatigue,

vicarious resilience, and posttraumatic growth. This qualitative study followed eight mental health clinicians, who have worked with survivors of the shooting that occurred in Virginia Tech (Day et al., 2017). The researchers established the correlational relationship between mass shootings, and the development of traumatic symptoms (Day et al., 2017). All participants involved in this study reported a significant struggle to regain personal, and professional balance, and required support from colleagues to improve their mental health, and quality of life (Day et al., 2017). One of the major limitations of this study is that the researchers only included one occupational population, mental health clinicians. The findings of this study indicate that there is a need for more evidence-based research regarding traumatic exposure in different occupational settings (Day et al., 2017).

Shultz et al. (2013) discussed one of the deadliest mass shootings in the United States, the Sandy Hook Elementary School massacre. Shultz et al. (2013) conducted an extensive literature review, analyzing the psychological well-being of individuals residing in the nearby community following the aftermath of the Sandy Hook Elementary School shooting. The authors established a link between mass shootings, and negative psychological outcomes, specifically the onset of PTSD, and anxiety in community residents. The literature review indicated that direct exposure to mass violence lead to higher level of traumatization (Shultz et al., 2013). The authors stated that the Sandy Hook Elementary School shooting garnered public attention from the media, and policy makers which resulted in stricter gun control laws in the state of Connecticut, and other

bordering states. The authors concluded that additional research regarding youth violence, and the impact of mass shootings on mental health is needed.

Another mass shooting that took place in Orlando, Florida in 2016, which opened up discussions among the community leaders, academic scholars, researchers, and mental health practitioners regarding mass shootings, mass trauma, hate crime, crimes against LGBTQ individuals, terrorist attacks, community resilience, and mental health (Cheatham, 2016; Molina et al., 2019; Smith et al., 2018). Molina et al. (2019) discussed the impact of mass trauma on, overall community mental health. The researchers conducted qualitative study, and utilized the case study approach. The purposive sampling method was used to recruit participants, but the sample size was not specified in the article. The participants sampled consisted mainly of community leaders, and mental health practitioners (Molina et al., 2019). The results of the study indicated that survivors and other members of the Orlando community experienced symptoms of PTSD after the shooting, especially representatives of the LGBTQ community (Molina et al., 2019). The noted results demonstrated a unification within the community, but it was evident that the need for mental health services had increased significantly post shooting to address the resulting trauma. Purposive sampling method created a sampling bias and future recommendation included the need for more studies with different populations and different types of sample selection (Molina et al., 2019).

Reeping et al. (2020) and Wallace and Loffi (2017) reviewed the event that took place in Las Vegas, Nevada, on October 17, 2017. Reeping et al. (2020) conducted a comprehensive literature review to explore the rapid response to the event by the police,

EMTs, and hospital staff. The authors methodically reviewed over a thousand peer-reviewed articles before narrowing the search down to 34 that met the inclusion criteria (Reeping et al., 2020). The literature review demonstrated that first responders who responded to mass shooting were organized, well trained, and prepared to effectively respond, and secure the evolving emergency situation (Reeping et al., 2020). Wallace and Loffi (2017) who conducted a case study of Las Vegas attack, wherein the challenges faced by law enforcement officers, who responded to the mass shooting, and resulting casualties, received similar results, as in previous studies. However recommendations for improvements of tactical functions were made to inform future actions when responding to mass violence events (Wallace & Loffi, 2017).

Gowing et al. (2017) conducted a review of literature to learn about levels of the preparedness of medical, paramedic, and law enforcement personnel, to disaster situations. Limitation of this review is focused on the external preparedness instead of both, internal and external preparedness. This weakness leads to the inability to generalize the findings of this review (Gowing et al., 2017). Gowing et al. (2017) called for further research regarding the preparedness level of first responders to mass shootings and other mass disaster events.

Habersaat et al. (2015) draw attention to the needs of first responders. Habersaat et al. (2015) discussed the stress experienced by police officers, and the impact that stress has on officers' mental and physical health. Sample size of 101 first responders from three different police departments in Switzerland was recruited. All participants were asked to complete a survey that consisted of: the MacArthur Scales of Subjective Social

Status, the Social Readjustment Rating Scale, the French version of the Job Content Questionnaire, The French Ways of Coping Checklist, and the UCLA Loneliness Scale (Habersaat et al., 2015). It was concluded that the stress experienced by first responders often lead to the development of serious psychological, and physical conditions such as PTSD, burnout, trauma, and fatigue. Habersaat et al. (2015) discussed the importance of mental health services to help police officers cope with the aftermath of hazardous occupational conditions. Habersaat et al. (2015) recommend future research on the development of additional preventive, and treatment based interventions that could sustain the mental health of first responders.

Lanza et al. (2018) conducted a research study focusing on the mental health needs of first responders following mass disasters. According to Lanza et al. (2018) first responders face work related challenges that increase stress, and have a significant impact on mental health. The authors indicated that in addition to occupational challenges, and stress, first responders experience significant stigma related to mental health care. Lanza et al. (2018) supports the research findings conducted by Habersaat et al. (2015) and indicates the significant need for mental health services for first responders to assist in stress reduction. However Lanza et al. (2018) postulates that therapeutic services must be tailored to the needs of first responders in order to be effective, and to reduce existing stigma. The authors stress the significance of continuing research to address the specific needs of first responders related to occupational hazards. Lanza et al., (2018) suggests that further research must focus on the prevention, post-vention, and mental health

treatment in order to provide first responders with tools necessary to be successful at work and manage mental well-being.

Research conducted by Wilson (2014) established a connection between the exposure to mass shootings and the development of symptoms of PTSD. In this study, it was hypothesized that exposure to a mass shooting would lead to greater symptoms of PTSD. After conducting a meta-analysis study, it was concluded that a substantial body of literature supports that hypothesis. A recommendation was provided that this study should serve as a guide for future researchers to help explore the relationship between mass shootings, and the development of PTSD symptoms. In addition, it was also recommended to use this research as a foundation for future studies that seek to improve mental health services for individuals affected by mass violence, or that are exposed to mass shootings (Wilson, 2014).

Further research on mass shootings was continued by Wilson (2015) who explored probable posttraumatic stress disorder in first responders following man-made mass violence. This study was built on the guidelines established by Wilson (2014). This research study is a systematic review of the literature. Wilson (2015) reviewed 575 articles that focused on the topic of mass shootings, and the impact of mass shootings on the psychological well-being of first responders. The population examined in this study consisted of: firefighters, ambulance personnel, and police officers. This study solidified the connection between mass shootings and the development of PTSD symptoms, supporting the gap in this study. However it is not evident if the mass shootings have a short-term or a long-term impact (Wilson, 2015). This study suggests that the current

understandings of the impact of mass shootings on the psychological well-being of first responders is very limited. It promotes the need for additional research on this topic and recommends that future researchers investigate the impact of mass shootings using longitudinal studies to obtain knowledge regarding short-term and long-term effects of mass shootings on the development of PTSD symptoms (Wilson, 2015).

As indicated by Klimley et al. (2018) first responders are viewed as a group that is at a higher risk for developing serious mental health conditions. Arnetz et al. (2009) discovered that personal resilience helps first responders diminish the effects of trauma exposure on their mental health. The trauma resilience study discussed resilience training that was implemented with junior police officers. Resilience training was conducted over a 10-week period and results were assessed 12 months later in an effort to determine the effectiveness of the training. Results produced a significant improvement in overall well-being, stress resiliency, and increase in work productivity (Arnetz et al., 2009). Work on resilience was continued by Andersen et al. (2015). The authors believed that resilience plays a crucial role in easing the impact of trauma on psychological well-being of first responders, and military personnel. Andersen et al. (2015) stressed the importance of professional trainings designed specifically to enhance resilience in first responders. The results of this study discovered that resilience training contributes to positive, and effective decision making, good situational awareness, and an increase in job performance (Andersen et al., 2015).

Lee et al. (2016) investigated self-resilience as one of the protective factors known to affect the occurrence of PTSD symptoms after exposure to traumatic events

experienced by police officers. A cross-sectional study was conducted with 112 male police officers, who had experienced one or more traumatic events. Participants were asked to fill out the following surveys: Korean Occupational Stress Scale-Short Form (KOSS-SF), the Center for Epidemiologic Studies-Depression Scale (CES-D), Connor–Davidson Resilience Scale-Korean (CD-RI-K), and Impact of Event Scale-Revised-Korean version (IES-R-K). The surveys were utilized to assess occupational stress, symptoms of depression, self-resilience, and PTSD symptoms (Lee et al., 2016). The findings indicated the correlational relationship between self-resilience and PTSD. Lower self-resilience leads to a greater rate of PTSD symptom occurrence, while higher self-resilience contributes to lower levels of PTSD symptoms (Lee et al., 2016). The authors suggested conducting similar studies with a larger sample size for generalization purposes. Conversely, Vieselmeyer et al. (2017) researched the role of self-resilience in the relationship between trauma exposure, and posttraumatic stress, following the campus shooting. Vieselmeyer et al. (2017) recruited a sample size that consisted of 359 students, faculty, and university staff. Participants were asked to complete self-report questionnaires about trauma exposure, PTSD symptoms, resilience, and gratitude. Vieselmeyer et al. (2017) determined that both, resilience and gratitude increase the immunity to trauma exposure.

PTSD

PTSD is a trauma related disorder that can occur after the exposure to a life threatening event, injury, or violence. Individuals who develop symptoms of PTSD often witness traumatic event, learn about it from other individuals, or experience recurrent

exposure to the details associated with the traumatic event (APA, 2013). Symptoms of PTSD include but not limited to severe anxiety, flashbacks, distressing memories of the traumatic event, recurrent nightmares, irritability, depressed mood, hypervigilance, and trouble sleeping (APA, 2013). As part of the job, first responders frequently witness difficult incidents that may contribute to development of PTSD (O. Johnson et al., 2019; Klimley et al., 2018).

Ellrich and Baier (2015) published a quantitative study using regression analysis to examine post-traumatic stress symptoms in police officers following violent assaults. The authors used a sample of 681 of male and female police officers, who have experienced assaults, or witnessed violence while being on duty. The researchers focused on several of the main risk factors (pre, peri, and post traumatic) that may predict the occurrence of PTSD, and how those factors impact male, and female officers. Risk factors include: the severity of a traumatic episode, the ability to psychologically adjust to stressors, and a lack of social support from colleagues, friends, and family (Ellrich & Baier, 2015). The results demonstrated a strong correlation between the above mentioned risk factors, and the development of PTSD in female officers only (Ellrich & Baier, 2015). Ellrich and Baier (2015) indicated that protective factors such as therapy sessions, and social support help significantly decrease symptoms of PTSD, while the fear of facing legal charges, and being investigated following a violent assault significantly increases the possibility of developing PTSD in police officers.

Klimley et al. (2018) presented a literature review discussing the probability of the occurrence of PTSD symptoms in police, firefighters, and emergency dispatchers

following a mass shooting. Klimley et al. (2018) selected 218 publications for review out of 524 articles that came up in search engines. Sixty five (65) articles focused on police officers, 36 articles focused on firefighters, 18 on emergency dispatchers, 25 focused on the first responders in general, and 74 articles focused on risk factors, protective factors, and treatment options associated with the development of PTSD in first responders following a mass shooting. Evidence suggests that police officers, firefighters, and other first responders are at a higher risk of developing symptoms of PTSD (Klimley et al., 2018). Risk factors outlined by the authors included previous trauma, low self-esteem, occupational stressors, illicit substance use, anxiety, poor coping skills, and so forth. The authors also discovered that several protective factors such as resilience, hardiness, social support, peer support, and life satisfaction help prevent, and reduce the manifestation of PTSD in first responders. As a result of this review, Klimley et al. (2018) recommended further research related to risk factors, and protective factors in first responders. It was also recommended to examine how comorbid issues such as anxiety, depression, and illicit substance use affects first responders, who experienced a mass shooting (Klimley et al., 2018).

Marchand et al. (2015) conducted a mixed methods study that involved qualitative structured interviews with 83 police officers from Quebec, Canada that recently experienced a traumatic episode, and a quantitative self-administered measure. The authors utilized the predictive analysis method that was based on a linear regression analysis to interpret the results. The results gathered from the structured qualitative interviews and quantitative questionnaire demonstrated that 3% of participants

developed, and met criteria to be diagnosed with PTSD, while 9% experienced partial PTSD symptoms (Marchand et al., 2015). The results also suggested that resilience can potentially help prevent the onset of PTSD and other mental health conditions, and serve as a protective factor against the development of PTSD, depression, and anxiety (Marchand et al., 2015). Further research is recommended using a larger sample size or different occupational groups (Marchand et al., 2015).

Motreff et al. (2020) conducted a quantitative study examining the impact of violent attacks on the psychological well-being of first responders focusing specifically on the development of PTSD, and partial PTSD symptoms following the series of terroristic attacks in Paris, France in November 2015. The authors employed the PTSD Checklist for DSM-5 (PCL-5) with 663 participants that included police officers, ambulance staff, firefighters, and other health professionals. The findings indicated an increase in PTSD symptoms from 3.4% to 9.5% and a significant increase in partial PTSD from 10.4% to 23.2% (Motreff et al., 2020). Further research is recommended to investigate the effects of mass violence on the psychological well-being of first responders. Additionally, the researchers in this study strived to bring awareness to the mental health of first responders by promoting prevention trainings, aiming to reduce stigma by educating responders about the importance of mental health, and boosting the value of mental health care programs (Motreff et al., 2020).

Potard et al. (2018) carried out a quantitative study with French police officers examining the correlational relationship between exposure to trauma and violence, hardiness, and development of PTSD symptoms. The authors used the following

measurement tools to survey 100 police officers: the Critical Incident History Questionnaire (CIHQ), the PTSD Checklist-Specific Version (PCL-S), the 28-item General Health Questionnaire (GHQ-28), and the 15-item Dispositional Resilience Scale (DRS-15). A multiple regression analysis was implemented to analyze the correlation between the variables (Potard et al., 2018). Potard et al. (2018) discovered the correlation between the exposure to traumatic events and development of PTSD. The researchers also discovered that hardiness can potentially serve as a protective factor against the development of PTSD symptoms. The major limitation of this study was associated to the small sample, only 100 participants. Further research with a larger sample size was recommended (Potard et al., 2018).

Another quantitative study regarding the effects of hardiness on the development of PTSD symptoms in U.S. Army medics was conducted by Pitts et al. (2016). The authors utilized the PTSD Checklist – Military Version (PCL-M) and the Dispositional Resiliency Scale – 15 (DRS-15) to survey 322 military combat medics, who recently returned from the combat deployment oversees. The researchers utilized a multiple regression to analyze the correlation between variables. Pitts et al. (2016) concluded that participants with a higher number of years in the military service demonstrated a higher prevalence of PTSD symptoms. The findings also demonstrated that a higher level of hardiness in military medics can potentially serve as a protective factor against the development of PTSD symptoms, suggesting the benefit of including hardiness measures into military training (Pitts et al., 2016). One limitation in the study is the ability to

generalize the results to other military personnel, indicating the need for further research with other military occupational groups (Pitts et al., 2016).

Stanley et al. (2016) executed a systematic literature review that involved 63 quantitative research studies that examined PTSD, and suicidal behavior among police officers, firefighters, EMTs, and paramedics. The researchers focused on risk and protective factors against PTSD symptoms, and suicidal behavior. The literature indicated that first responders have variety of mental health resources available to them to help them cope with trauma, PTSD, and suicidal ideations (Stanley et al., 2016). However, the literature also indicated the presence of mental health stigma especially among police officers, and firefighters. Stanley et al. (2016) concluded that the exposure to traumatic incidents increased the possibility of the development of PTSD symptoms, and suicidal thoughts among first responders. Further research on stigma reduction among police officers, firefighters and ambulance staff is recommended (Stanley et al., 2016).

Bardeen et al. (2013) presented a quantitative longitudinal study that investigated the impact of mass shootings on the ability to regulate emotions and the role emotion regulation plays in the development of PTSD symptoms. This study was executed in three phases: pre-shooting assessment, first post-shooting assessment, and second post-shooting assessment. Bardeen et al. (2013) selected the following assessments to survey participants: the Difficulties in Emotion Regulation Scale (DERS), the Traumatic Life Events Questionnaire (TLEQ), the Distressing Events Questionnaire (DEQ), the Depression Anxiety Stress Scale- 21 (DASS-21), and a 12-item self-report measure of exposure adapted from the Littleton et al. (2009) Virginia Tech shooting exposure

measure. The researchers recruited 1,045 female students who attended a Northern Illinois University. Findings revealed that inability to regulate emotions may increase risk for PTSD (Bardeen et al., 2013). The implications of this study have a potential to inform clinical settings that specialize in treatment of PTSD (Bardeen et al., 2013).

Miron et al. (2014) carried out a replication quantitative longitudinal study that focused on predictive factors of PTSD following targeted mass violence. The study was conducted with 691 undergraduate female students, who were selected from the pool of 1,045 students enrolled in psychology courses who were directly or indirectly impacted by a mass shooting (Miron et al., 2014). This study was carried out in three phases: the pre-shooting assessment, the initial post-shooting online assessment, and the second post-shooting online assessment. The researchers employed the following measurement tools to gather the data: the Traumatic Life Events Questionnaire (TLEQ), the Distressing Events Questionnaire (DEQ), the Severe Childhood Physical Abuse, the Difficulties in Emotion Regulation Scale (DERS), the Emotion Regulation Strategies Postshooting (ERSPS), the Acceptance and Action Questionnaire-II (AAQ-II), the Symptom Checklist-10 (SCL-10), the Rand Health Quality of Life Items (SF-12), the Pre and Post-shooting Heavy Drinking quantity and frequency assessments, a 12-item self-report measure of exposure adapted from the Littleton et al. (2009) Virginia Tech shooting exposure measure, the Peritraumatic Dissociative Experiences Questionnaire (PDEQ), Posttraumatic Growth Inventory (PTGI 6- items), the Satisfaction With Social Support 5-item scale, and Multidimensional Scale of Perceived Social Support (MSPSS) (Miron et al., 2014). The results pointed out that resilience played a significant role in buffering

PTSD symptoms, as 46.1% of participants did not demonstrate any symptoms of PTSD. However, 42.1% of participants reported experiencing mild to moderate PTSD symptoms after the mass shooting (Miron et al., 2014). Miron et al. (2014) recommended future researchers to include different populations to help with generalizability of results, and to focus on examining the factors that contribute to delayed development of PTSD following a mass shooting.

Lewis-Schroeder et al. (2018) discussed a literature review conceptualization, assessment, and treatment of trauma, and PTSD in first responders. The review of the literature unveiled that first responders face difficult situations and conditions that greatly contribute to the development of acute stress and PTSD. Lewis-Schroeder et al. (2018) reviewed risk factors that lead to the occurrence of PTSD, and treatment options, including: cognitive processing therapy (CPT), prolonged exposure (PE), and eye movement desensitization and reprocessing (EMDR) (Lewis-Schroeder et al., 2018). The authors discovered that there are many challenges of treating first responders, such as mental health stigma, chronic exposure to trauma, the fear of being seen as weak by the public, and substance abuse. The literature supported that first responders are at a higher risk of retraumatization, which would require a specific set of clinical skills to establish rapport and shave off unprocessed trauma (i.e., non-judgmental attitude, sensitive approach, knowledge of trauma, etc.). Further research on assessing and treating PTSD among first responders would benefit first responders and mental health professionals working with this population (Lewis-Schroeder et al., 2018).

Schnurr and Lunney (2016) presented a quantitative study regarding PTSD and quality of life in female military veterans, who served in Iraq and Afghanistan. A sample consisted of 235 female veterans and active duty soldiers who were exposed to trauma while on duty and have been diagnosed with PTSD (Schnurr & Lunney, 2016). The Clinician-Administered PTSD Scale (CAPS) was used to determine the inclusion criteria to participate in this study. Participants then were provided with 10 weekly therapy sessions to address their symptoms of trauma (Schnurr & Lunney, 2016). The Quality of Life Inventory (QOLI) was utilized to assess the quality of life among the participants (Schnurr & Lunney, 2016). Responses received from the participants have demonstrated positive changes in PTSD symptoms: 36% of participants noticed improvements in their symptoms, 17% no longer had their PTSD diagnosis, and 12% experienced remission of PTSD symptoms (Schnurr & Lunney, 2016). Schnurr and Lunney (2016) suggested that future studies should use different available treatment options and other populations to replicate this research.

Vogt et al. (2017) completed a quantitative longitudinal study with 524 military veterans, who participated in response to the 9/11 tragedy. The purpose of the study was to determine the extent of the impact of PTSD on quality of life of male, and female military veterans, who responded to the 9/11 terrorist attack. The researchers utilized a mailed survey, then employed descriptive analysis and multiple regression to process the data (Vogt et al., 2017). The study revealed the correlation between PTSD, and the overall lower quality of life especially in intimate relationships (Vogt et al., 2017). The findings of the study support the need for additional research pertaining to PTSD and its

impact on quality of life among different occupational populations. Additionally, the researchers call for further research to determine the appropriate strategies that help lessen the impact of the effects of PTSD on quality of life (Vogt et al., 2017).

O. Johnson et al. (2019) discussed how job exposure and other occupational challenges impact the law enforcement profession, and how mindfulness help lessen the impact of job related stress and exposure to trauma. O. Johnson et al. (2019) stated that first responders frequently face difficult circumstances such as homicides, suicides, crimes against children, domestic violence, life threatening injuries, pursuits, and deadly force situations. The authors indicated that traumatic events faced by law enforcement officers often lead to the occurrence of compassion fatigue, depression, anxiety, and PTSD. The authors hypothesized that mindfulness could play a crucial role in helping to decrease the possibility of manifestation of mental health conditions such as PTSD, depression, burnout, and anxiety in first responders (O. Johnson et al., 2019). According to O. Johnson et al. (2019), mindfulness brings insight and awareness that allows the officers decrease feelings of guilt, self-blame, and self-judgement that come with traumatic experiences. The authors believe that continuous mindfulness practice can boost resilience in first responders and increase job performance.

Anxiety

The definition of anxiety has evolved over the years (Crocq, 2015). DSM-5 defines anxiety as the anticipation of future threat, real or perceived (APA, 2013). Symptoms of anxiety include but not limited to excessive fear, distress, shortness of breath, chest pain, sweating, shaking, hyperventilation, nausea, dizziness, numbness,

derealization, and depersonalization (APA, 2013). DSM-5 outlines different diagnoses that fall under the criteria of anxiety disorders. Those diagnoses include generalized anxiety disorder, panic disorder, agoraphobia, separation anxiety disorder, selective mutism, social anxiety disorder, specific phobia disorder, substance induced anxiety, and anxiety disorder due to medical condition (APA, 2013). According to Crocq (2015) understanding of anxiety heavily depend on cultural beliefs and values. In Greek and Latin cultures, anxiety was referred to as *aegritudo* or medical illness, Freud and Kraepelin took anxiety from under the umbrella of medical illnesses and placed it under the umbrella of psychological conditions, as we know it today (Crocq, 2015).

Bastos Machado de Resende et al. (2020) presented a quantitative study where the correlational relationship between anxiety and quality of life in patients with temporomandibular disorders was evaluated. The researchers implemented the World Health Organization Quality of Life Brief Version (WHOQOL), the Beck Anxiety Inventory (BAI), the State-Trait Anxiety Inventory (STAI-S and -T), the Hospital Anxiety and Depression Scale (HADS), and the Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD) to measure quality of life and anxiety in 120 individuals diagnosed with temporomandibular disorders. Bastos Machado de Resende et al. (2020) established the relationship between quality of life and anxiety. It was indicated that individuals diagnosed with temporomandibular disorders experience higher levels of anxiety and lower quality of life emphasizing therapeutic treatment to reduce anxiety and improve overall quality of life (Bastos Machado de Resende et al., 2020).

Additional research pertaining anxiety and quality of life with different populations was recommended by the researchers.

Amstadter (2008) delivered a comprehensive literature review discussing research published on the topic of emotion regulation and anxiety disorders. In this article, Amstadter (2008) referenced a scholar and pioneer of research on anxiety and trauma, Davidson (1998). Amstadter (2008) as well as Davidson (1998) revealed substantial lack of research pertaining the relationship between anxiety disorders and emotion regulation processes. The literature review supported the need for additional research on emotion regulation and anxiety disorders using variety of populations and occupational groups (Amstadter, 2008; Davidson, 1998).

According to Derrick et al. (2019) anxiety and panic accompany critical and emergency situations. The authors delivered a discussion regarding the assessment strategies and response to anxiety and panic in the Emergency Department. Derrick et al. (2019) stated that some symptoms of anxiety such as chest pain and hyperventilation often send individuals to the emergency care departments causing health concerns, stress, fear, and contributing to lower quality of life. Symptoms of anxiety could be managed with breathing exercises, yoga, mindfulness, and meditation, helping individuals gain control of their breathing and prevent trips to the emergency clinics (Derrick et al., 2019). Derrick et al. (2019) stressed the importance of early detection of anxiety, prevention, and appropriate interventions to reduce and manage the symptoms.

Novick-Kline et al. (2005) conducted a quantitative correlational study using emotion dysregulation theory of anxiety to evaluate emotional awareness as a

differentiating variable between individuals with and without generalized anxiety disorder. The authors recruited 293 male and female undergraduate students to test the hypotheses in this study. The recruits were divided into two groups: 73 participants who reported having a diagnosis of anxiety disorder or undiagnosed symptoms of anxiety, and 220 participants who did not experience anxiety (Novick-Kline et al., 2005). Two measurement tools were utilized to collect the data in this research study: the Generalized Anxiety Disorder Questionnaire-IV (GAD-Q-IV) and the Penn State Worry Questionnaire (PSWQ) (Novick-Kline et al., 2005). Higher scores were reported by the participants who belonged to the group that disclosed experiencing anxiety compare to the group that did not disclose having symptoms of anxiety. Novick-Kline et al. (2005) recommended this study to be replicated using a different theoretical foundation, and a different research design such as experimental or longitudinal. Additionally, it was recommended to utilize other measurement tools such as the Mayer–Salovey–Caruso Emotional Intelligence Test (MSCEIT) (Novick-Kline et al., 2005).

Halouani et al. (2015) introduced a quantitative cross-sectional study discussing stress and anxiety among medical and paramedical staff. This study included 54 participants who were employed in the anesthesia department, the participants consisted of 16 medical professionals and 38 paramedics (Halouani et al., 2015). The authors utilized a socio-demographic questionnaire, the Karasek questionnaire to assess occupational stress, and the Hamilton scale to measure degree of anxiety. The findings illustrated that symptoms of anxiety were mild in 61.1% of participants, moderate in 16.7% of participants, and severe in 22.2% of participants, indicating the link between

occupational stress and anxiety among paramedics and medical staff (Halouani et al., 2015). The implications of this research study will provide a better understanding of how to manage occupational stress and anxiety and prevent burnout among paramedics and other emergency workers (Halouani et al., 2015).

Grills-Taquechel et al. (2011) engaged in research study that focused on anxiety and quality of life following a mass shooting. Grills-Taquechel et al. (2011) analyzed how the shooting at Virginia Tech University impacted the onset of anxiety and quality of life in individuals attending the university. This quantitative study recruited 298 female students who were directly or indirectly impacted by this traumatic event (Grills-Taquechel et al., 2011). Data from a pre-trauma evaluation conducted approximately six months prior to the mass shooting event was utilized, and then post-shooting assessment was implemented two months after the shooting event occurred at the university (Grills-Taquechel et al., 2011). Grills-Taquechel et al. (2011) employed the Four Dimensional Anxiety Scale (FDAS), the World Health Organization Quality of Life Scale-Brief (WHOQOL), the Multidimensional Scale of Perceived Social Support (MSPSS), and the World Assumptions Scale measurement instruments to collect responses from the participants. Linear regression analysis demonstrated a significant increase in anxiety symptoms in post-shooting assessment compare to pre-shooting (Grills-Taquechel et al., 2011). Additionally, participants who were directly affected by the shooting reported experiencing higher level of anxiety that the individuals who were indirectly impacted by mass trauma (Grills-Taquechel et al., 2011). However, the survey responses did not indicate a correlation between increase in anxiety and overall quality of life (Grills-

Taquechel et al., 2011). The authors suggested that additional research pertaining anxiety and quality of life following the mass violence is needed. The authors also suggested that other studies should use different populations and occupational groups for generalization purposes.

Paulus et al. (2018) examined the effects of anxiety sensitivity and emotion dysregulation in relation to PTSD, depression, and anxiety symptoms among trauma-exposed firefighters. This quantitative study consisted of 787 firefighters, who reported experiencing at least one job related traumatic event (Paulus et al., 2018). Paulus et al. (2018) employed structural equation modeling method to analyze the data. The findings demonstrated a statistically significant relationship between anxiety sensitivity and all the variables (PTSD, depression, anxiety) (Paulus et al., 2018). The findings also suggested that anxiety sensitivity and emotion dysregulation may contribute to the development of a variety of mental health conditions. Paulus et al. (2018) stated that findings of this study can be generalized to other populations such as the law enforcement officers and the military.

Allison et al. (2019) discussed how different types of shiftwork impact the development of symptoms of anxiety and depression in police officers. This quantitative study recruited 361 male and female police officers to fulfill the purpose of the study (Allison et al., 2019). The authors utilized the Beck Anxiety Inventory (BAI) and the Beck Depression Inventory (BDI-II) to gather information from the participants and determine the degree of anxiety and depression in police officers participated in this study. The findings demonstrated that officers who worked during the day shift

experienced higher levels of anxiety and were more inclined to develop symptoms of depression than the officers who worked during the night shift (Allison et al., 2019). Allison et al. (2019) suggested the need for further research pertaining how anxiety and depression affect the well-being of police officers.

Storch and Panzarella (1996) presented a quantitative study where stress and state-trait anxiety in relation to occupational and personal stressors experienced by police officers was examined. The authors employed the State-Trait Anxiety Inventory, which was distributed to three police departments located in rural areas of the United States. The first department employed 75 police officers, the second department employed 58 officers, and the third department employed 27 officers (Storch & Panzarella, 1996). However, only 79 male police officers responded to the survey. The responses stated that when the officers experienced emergencies and high stress situations they also experienced tension and anxiety. The findings revealed that 31.04% indicated being in a state of anxiety, and 31.28% indicated the presence of anxiety traits, supporting a link between anxiety and state-trait anxiety in relation to occupational and personal stressors experienced by police officers. However, responses also stated that when emergencies and critical situations were absent, officers did not experience tension and anxiety (Storch & Panzarella, 1996). The researchers recommended future studies to recruit participants from either larger police departments or different law enforcement agencies. Additionally, researchers also suggested future research studies include a larger sample size.

Newman and Rucker-Reed (2004) conducted a replication study that focused on police stress, state-trait anxiety, and stressors among U.S. Marshals. Newman and Rucker-Reed (2004) used a quantitative research design and recruited 100 male and female U.S. Marshals from across the United States. The State-Trait Anxiety Inventory was mailed to all the participants, who responded to the questions, and mailed the inventory back. Research found that when the deputies experienced emergencies and dangerous situations they also experienced high tension and anxiety, 33.6% indicated being in the state of anxiety, and 32.94% indicated the presence of anxiety traits. However, the state of anxiety was only reported during, and after emergency conditions had occurred (Newman & Rucker-Reed, 2004). The implications of Newman and Rucker-Reed (2004) study have a potential to assist law enforcement agencies across the United States in developing programs that would help officers cope with stress, and anxiety.

Three Dimensions of Burnout

The term burnout was originally developed by Herbert Freudenberger in 1974 (Heinemann & Heinemann, 2017). Freudenberger (1974) described burnout as a feeling of constant exhaustion based on excessive work demands and stressful work conditions. Freudenberger (1974) reported that burnout produces physical and psychological symptoms that was compared to symptoms of depression (i.e., fatigue, lack of energy, loss of motivation, insomnia or hypersomnia, diminished emotional responses, anger outbursts, etc.). Burnout has been linked to decreased work performance, low self-

esteem, frequent illnesses, and overall lower quality of life (Lala et al., 2016; Moukarzel et al., 2019).

Maslach and Jackson (1981) continued the work on the topic of burnout, and recognized it as an occupational hazard for various helping professions, such as first responders, educators, health care providers, and human services workers. Maslach and Jackson (1981) described burnout by using three key dimensions: emotional exhaustion, depersonalization, and personal achievement. To measure those specific dimensions of burnout, the Maslach Burnout Inventory (MBI) was developed that consists of 22 rating items. These items include nine items that measure emotional exhaustion, five items that measure depersonalization, and eight items that measure personal achievement. Indication of burnout is demonstrated in high scores obtained in sections pertaining to emotional exhaustion and depersonalization, and a low score in a section pertaining to personal achievement (Galanakis et al., 2009).

The MBI has been validated across different occupational groups and become one of the most commonly utilized instruments to assess burnout (Bria et al., 2014; Pérez-Mármol & Brown, 2019; Taris et al., 2009). The review conducted by Bakker et al. (2002) examined the validity of the MBI in eight occupational groups including educators, social workers, and police officers. Sample size of 2919 male and female employees were recruited. The results of this examination were in favor of the three-factor model: MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement (Bakker et al., 2002). The authors also indicated that female employees demonstrated higher level of emotional exhaustion and depersonalization, and lower level

of personal achievement. Bria et al. (2014) conducted evaluation of the validity of the MBI using healthcare professionals as a target population. Bria et al. (2014) confirmed the consistency of the three-factor model: MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement, compare to the one-factor or two-factor models. The study conducted by Pérez-Mármol & Brown (2019) validated the use of the MBI and the use of three-factor model, supporting the studies conducted by Bakker et al. (2002) and Bria et al. (2014).

Pioneers of the research on burnout Maslach and Leiter (2016) defined the term of burnout, discussed different types of assessments intended to measure burnout, reviewed causes and outcomes of burnout, and indicated different types of populations that are susceptible to occupational burnout. Maslach (2017) indicated that health care professionals, educators, mental health professionals, and first responders are among the occupational groups at the higher risk of developing signs of burnout. Maslach and Leiter (2016) believed that occupational burnout caused by the following factors: poor work conditions, inflexible work schedule, low salaries, lack of advancement, excessive workload, micromanagement, lack of support from the leadership, etc. First responders often expected to make quick decisions, and work in stressful, and overwhelming conditions (Chatzea et al., 2018).

Andersen and Papazoglou (2015) conducted a literature review to investigate compassion fatigue and compassion satisfaction among police officers. The authors questioned that despite the occupational challenges that police officers face daily (i.e., mass shootings, domestic violence calls, child abuse and neglect, etc.), many officers do

not experience compassion fatigue or develop mental health conditions such as depression, anxiety, or PTSD. Andersen and Papazoglou (2015) discovered that the literature indicates that enhancing compassion satisfaction may balance the negatives effects of compassion fatigue, indicating that compassion satisfaction may serve as a protective factor against compassion fatigue, work related traumatization, and onset of mental health symptoms. A gap was reported that many studies conducted included small sizes due to skepticism towards research and stigma towards mental health. Future research was suggested in the area of compassion fatigue and compassion satisfaction among law enforcement officers. The authors suggested that inviting multiple police organizations and other agencies (i.e., criminal justice academic departments, pro law enforcement advocacy groups, law enforcement associations, etc.) would increase collaboration (Andersen & Papazoglou, 2015).

McCarty et al. (2019) conducted a review of the literature analyzing quantitative survey data gathered from 13,000 law enforcement officers employed in various settings by 89 agencies. McCarty et al., (2019) adapted the work life theory of burnout described by Leiter & Maslach (1999). The authors focused on describing two components of burnout: emotional exhaustion and depersonalization, and analyzing how occupational hazards impact the development of those components. The results indicated that nearly 19% of all participants demonstrated severe signs of emotional exhaustion and 13% had shown high rates of depersonalization (McCarty et al., 2019). It was indicated that high levels of emotional exhaustion and depersonalization were driven by the stress experienced at work. However, the authors found limited empirical support that burnout

in law enforcement officers was connected to the community related stressors. Further research in this area was recommended (McCarty et al., 2019).

Queirós et al. (2020) conducted a mixed methods study on burnout and stress management with police officers that consisted of an extensive literature review and a quantitative survey study. For the literature review part, Queirós et al. (2020) identified 108 quantitative studies conducted in the past ten years with police officers, which was isolated to research with a sample size under 500. For the quantitative study, 2,057 active duty Portuguese police officers were surveyed using the following assessment measures: the Operational Police Stress Questionnaire (PSQ-Op), the Spanish Burnout Inventory, and the Kessler Psychological Distress Scale (Queirós et al., 2020). Queirós et al. (2020) found that consistent occupational stress was identified as a number one contributor to burnout. The authors reinforce the need to invest in stress reduction programs and trainings for police officers to help prevent the distress caused by occupational challenges. The implications of this study indicated the need to continue research on job stress and burnout among police officers (Queirós et al., 2020).

Chatzea et al. (2018) examined co-occurring symptoms of PTSD, burnout and well-being among emergency rescue workers. The focus of this quantitative study was to determine the link between occupational stressors, mental health, and well-being of emergency responders (Chatzea et al., 2018). The authors surveyed 217 emergency rescue workers using the PTSD Checklist-Civilian Version (PCL-C), the MBI for burnout, and the Well-being Index (WHO-5). Responses to the scales demonstrated elevated levels of PTSD and burnout, while levels of perceived personal well-being were

low (Chatzea et al., 2018). The findings of this research show direct correlation between occupational stress and occurrence of PTSD and burnout. In addition, the findings also show the connection between burnout and perceived well-being. This study serves as a call for employment agencies to implement programs that can assist rescue workers with psychological first aid (Chatzea et al., 2018). This study also helps other researchers better understand ramifications of occupational stress on mental health and well-being of first responders (Chatzea et al., 2018).

Moukarzel et al. (2019) carried out a quantitative cross-sectional survey study to determine the impact of excessive workload and demanding work conditions on development of burnout symptoms among emergency department staff. To perform this study, Moukarzel et al. (2019) recruited 529 active duty emergency responders employed by three different emergency departments, however, only 379 survey responses were received back from the participants. The following surveys were implemented to assess the symptoms: the MBI for burnout, Karasek Job Content Questionnaire to assess job demands, and Medical Outcome Study Short Form to assess quality of life (Moukarzel et al., 2019). Emotional exhaustion and depersonalization levels were elevated across all responders. The results of Moukarzel et al. (2019) study demonstrated that emergency responders are at higher risk of developing burnout than other populations due to the nature of their work responsibilities. The link between occupational stress and development of burnout was established. This study promotes the need for stress reduction programs to help reduce symptoms of burnout in first responders and improve quality of work life (Moukarzel et al., 2019).

A quantitative survey cross-sectional study carried out by Jimenez et al. (2019) explored the connection between violence and burnout in EMTs in Santiago, Chile. The study employed the MBI with 565 EMTs, who reported being exposed to violence in the past 12 months (Jimenez et al., 2019). The authors discovered that participants who were exposed to violence demonstrated higher levels of emotional exhaustion and depersonalization. Jimenez et al. (2019) believe that additional research to establish the correlational relationship between violence and burnout is needed. Additionally, Jimenez et al. (2019) suggest the need to explore how preventative and safety measures affect the possibility of exposure to violence as well as how this leads to the development of burnout.

Cenk (2019) presented quantitative survey cross-sectional study, where an analysis of the exposure to violence and burnout levels of ambulance staff was conducted. Cenk (2019) similarly to Jimenez et al. (2019) employed the MBI to measure levels of burnout. The author recruited a sample of 143 paramedics to investigate the correlation between on the job exposure to violence and development of burnout. The outcome of the study was similar to the findings obtained by Jimenez et al. (2019). The participants who reported witnessing violence on the job scored higher in emotional exhaustion and depersonalization, and lower in personal achievement (Cenk, 2019). It was an indication that violence significantly contributes to burnout in paramedics (Cenk, 2019). Cenk (2019) recognizes the need for professional development and education regarding risk management, violence prevention, de-escalation techniques, and other job safety precautions among paramedics. Cenk (2019) stated that additional research

regarding burnout prevention strategies is needed to inform prevention policies and programs.

Howlett et al. (2015) conducted a quantitative correlational cross-sectional survey study with 616 emergency department healthcare professionals using the MBI to measure burnout symptoms and the Coping Inventory for Stressful Situations (CISS) to measure coping styles. The authors employed linear regression to explore the impact of coping styles (task-oriented, emotion-oriented and avoidance-oriented) on burnout among emergency department professionals. The results indicated that task-oriented coping style was directly linked to decreased risk of burnout, while emotion-oriented style of coping was linked to increased risk of burnout (Howlett et al., 2015). The authors' recommendations include further studies that focus on coping strategies to help first responders prevent and reduce symptoms of burnout as they recognize a significant need for additional research on burnout among first responders (Howlett et al., 2015).

ALmutairi and El Mahalli (2020) presented a similar quantitative correlational cross-sectional survey study that was conducted with 270 employees of emergency medical services. The authors utilized the MBI to assess burnout and the Coping Methods Checklist (CMC) to assess coping strategies. Multiple linear regression was utilized to explore the correlational relationship between variables outlined in the study and the three dimensions of burnout outlined by Maslach and Jackson (1981). The MBI survey results demonstrated high scores in emotional exhaustion and depersonalization sections and low scores in personal achievement section. The CMC results demonstrated that the most commonly utilized strategies to cope with burnout included talking with colleagues,

looking forward to being off duty, and thinking about the positive benefits of work (ALmutairi & El Mahalli, 2020). Practical implications of this study allow other researchers better understand how EMS professionals cope with burnout. Additionally, this study will assist employment agencies in developing appropriate training programs to reduce employees' burnout, and establish positive coping strategies to help reduce onset of burnout (ALmutairi & El Mahalli, 2020).

Another quantitative correlational cross-sectional survey study was conducted by Lala et al. (2016), who discussed coping behavior and risk, and resilience stress factors among emergency medicine unit workers. This quantitative study was conducted with 366 emergency unit staff members who were surveyed with the Perceived Stress Scale PSS-10 and the Brief COPE questionnaire (Lala et al., 2016). However, only 184 participants responded to the survey. The findings were consisted with other studies conducted on the topic of burnout (Lala et al., 2016). The authors indicated that high levels of stress and long work hours are two main contributors to the development of symptoms of burnout. The authors also stated that appropriate coping strategies play a crucial role in decreasing the onset of burnout and further research on how a variety of coping strategies impacts burnout in first responders is recommended (Lala et al., 2016).

Life Satisfaction

Life satisfaction is a complex phenomenon that has been linked to a variety of different factors such as self-esteem, family, economic status, social status, employment, stress level, emotional and physical health (Flinchbaugh et al., 2015). Diener et al. (1985) defined life satisfaction as a cognitive internal process that is dependent on the

individual's abilities and predispositions. Modern research studies on life satisfaction emerged in the 1980s by Ed Diener and his colleagues, who believed that life satisfaction is inherently connected to happiness, quality of life, and subjective well-being (Medvedev & Landhuis, 2018). Diener et al. (1985) relied on the theory of hedonic treadmill originally proposed by Brickman & Campbell (1971), and incorporated the concepts from hedonic treadmill theory to explain life satisfaction and factors that contribute to it. Adaptation theory was instrumental in the development of the hedonic treadmill theory and was incorporated into Diener's work on life satisfaction (Brickman & Campbell, 1971; Diener et al., 2006).

Research on life satisfaction was continued by Veenhoven (2003), who believed that life satisfaction refers to the extent by which an individual positively evaluates his or her level of happiness, well-being, and overall quality of life. Veenhoven (2003) incorporated the theory of hedonic treadmill in his research. The hedonic treadmill theory explores happiness and how happiness relates to life satisfaction (Veenhoven, 2003; Gleibs et al., 2013). The hedonic treadmill theory suggests that when individuals experience a disruption in neutral levels of happiness, the result veers the individual away from neutrality, and presents new experiences that could lead to a new interpretation so that individuals can decrease their experiences that lead to unhappiness (Brickman & Campbell, 1971; Diener et al., 2006). According to Shinde (2017), the hedonic treadmill theory is the universal approach of understanding the purpose and functioning of happiness and quality of life. The principles of hedonia can explain how happiness relates to life satisfaction of first responders (Di Fabio & Palazzeschi, 2015).

Flinchbaugh et al. (2015) conducted a 10-week quantitative study with 189 university students to examine the influence of a 2-dimensional model of stressors on individual thriving, resilience, and life satisfaction to determine if some stressors may be beneficial for individuals. The authors postulated that hindrance stressors diminish quality of life and overall life satisfaction, while challenge stressors boost life satisfaction. It was determined that individual thriving contributes to stress reduction and positive increase in life satisfaction. Further, it was also concluded that resilience greatly increases thriving while simultaneously decreases hindering stress (Flinchbaugh et al., 2015). The results confirm the link between stress and life satisfaction. In addition, the results indicate that resilient individuals have the higher ability to thrive, succeed, and overcome challenges (Flinchbaugh et al., 2015).

Kushlev et al. (2017) conducted a quantitative study that focused on happiness and well-being. This study was completed with 160 male and female college students using the Enduring Happiness and Continued Self-Enhancement Scale (ENHANCE). The assessment was administered at baseline, 3-months, and 6 months, either in person or online. The focus of the study was to monitor deviations in personal well-being throughout the treatment. Treatment outcomes indicated that happiness and subjective well-being are dependent on human personality and psychological needs of the individuals (Kushlev et al., 2017). Kushlev et al. (2017) suggested replicating this study with different populations.

Medvedev and Landhuis (2018) explored constructs of well-being, happiness, and quality of life. This quantitative study was conducted with 180 university students

(Medvedev & Landhuis, 2018). The participants were asked to complete the Oxford Happiness Questionnaire (OHQ), the World Health Organization Quality of Life Questionnaire, the Satisfaction with Life Scale, and the Positive and Negative Affect Scale (Medvedev & Landhuis, 2018). Medvedev and Landhuis (2018) employed correlational design, multiple regression analysis, and exploratory factor analysis to analyze the data obtained from the participants. The findings demonstrated positive correlations between happiness, psychological well-being, physical health, life satisfaction, and positive affect (Medvedev & Landhuis, 2018). Further exploration of happiness, well-being, quality of life and life satisfaction is recommended with larger sample size and different population (Medvedev & Landhuis, 2018).

Bopp et al. (2015) investigated the connection between job and life satisfaction among collegiate head coaches. This quantitative research included 348 head coaches from three major universities who were surveyed with the Satisfaction with Work Scale and the Satisfaction with Life Scale to determine their satisfaction with job and life (Bopp et al., 2015). Bopp et al. (2015) obtained 265 complete responses out of 348 participants, who were originally recruited to participate in the study. The authors concluded that job satisfaction and life satisfaction are linked together among studied population. It was recommended to replicate this study with different occupational groups using multitrait-multimethod approach (Bopp et al., 2015).

Di Castro et al. (2018) conducted a comprehensive literature review that focused on life satisfaction and subjective well-being of working individuals. In the review, Di Castro et al. (2018) included quantitative studies only that were conducted utilizing one

of the following measurement scales developed by Diener: the Satisfaction with Life Scale (SWLS), the Scale of Positive and Negative Experience (SPANE), the Positive Thinking Scale (PTS), the Flourishing Scale (FS), the Comprehensive Inventory of Thriving (CIT), or the Brief Inventory of Thriving (BIT). The focus of this review was to measure quality of life and life satisfaction of working adults (Di Castro et al., 2018). The review identified the connection between satisfaction with work and quality of life, higher satisfaction with work resulted in higher life satisfaction (Di Castro et al., 2018). Di Castro et al. (2018) recommended future systematic reviews to narrow the scope of investigation and include studies with specific occupational groups.

Karatzias et al. (2013) carried out a quantitative study that examined life satisfaction in individuals diagnosed with PTSD. Karatzias et al. (2013) recruited 46 individuals who have experienced symptoms of PTSD. All participants were asked to complete the Satisfaction with Life Scale, the PTSD Checklist, and the Hospital Anxiety and Depression Scale (Karatzias et al., 2013). The authors discovered that the persons with moderate to severe symptoms of PTSD reportedly had significantly lower life satisfaction, compared to individuals with mild symptoms of PTSD. The results also indicated that marital status played a significant role in life satisfaction, married individuals had demonstrated higher levels of life satisfaction than single individuals (Karatzias et al., 2013). Karatzias et al. (2013) recommended that future research would recruit a bigger sample size for generalization purposes.

Sabarwal and Sharma (2019) researched emotional intelligence and job satisfaction among police personnel. The researchers employed quantitative research

design to conduct this study. A sample was comprised from 100 male and female active duty constables who had been employed with the department for a minimum of five years (Sabarwal & Sharma, 2019). The authors employed two measurement instruments, the Emotional Intelligence Scale and the Job Satisfaction Scale. The findings of this study affirmed the connection between emotional intelligence and job satisfaction of police personnel. The first limitation of this quantitative study is the small number of participants, while the second limitation has to do with the fact that the researchers only focused on one police department. The limitations may affect the generalizability of the results. Sabarwal and Sharma (2019) recommended replicating this study with other law enforcement agencies and larger sample size.

Basinska and Wiciak (2013) analyzed the impact of work on the well-being of police officers and firefighters. This quantitative study included a sample that consisted of 499 active duty first responders in Poland, including 195 police officers and 304 firefighters (Basinska & Wiciak, 2013). The authors utilized the hedonic treadmill model as a theoretical foundation for this research, and the Satisfaction with Life Scale as a measurement tool for data collection. The findings revealed the connection between work and overall well-being among police officers and firefighters. The results demonstrated that police officers experienced lower quality of life than firefighters (Basinska & Wiciak, 2013). Basinska & Wiciak (2013) discovered that work performed by police officers have a higher negative impact on health and well-being compared to work performed by firefighters. The implications of this research suggest the need to develop

stress-management trainings and courses for both, police officers and firefighters (Basinska & Wiciak, 2013).

Alexopoulos et al. (2014) explored stress levels, job satisfaction, and quality of life in a sample of police officers in Greece. This quantitative research was carried out with 201 male and female police officers in Greece, who were asked to complete the following measurement scales: the General Health Questionnaire-28 (GHQ-28), the World Health Organization Quality of Life-BREF Questionnaire, and the Perceived Stress Scale-14 (PSS-14) questionnaires (Alexopoulos et al., 2014). It was discovered that a higher level of occupational stress was related to a lower level of job satisfaction and quality of life, especially in male participants (Alexopoulos et al., 2014). The practical implication of this research study demonstrates the need for stress-management programs for police officers (Alexopoulos et al., 2014).

Liu et al. (2019) examined the influence of police work engagement on life satisfaction. Liu et al. (2019) recruited 760 active duty police officers, who were asked to complete the following assessments: the Utrecht Work Engagement Scale, the Satisfaction with Life Scale, the Work-Family Conflict Scale, and the Psychological Detachment Scale. The authors carried out a quantitative study and obtained 714 complete responses from the participants. The results were analyzed with descriptive statistics and correlational analysis, and the findings demonstrated that work engagement affected police life satisfaction (Liu et al., 2019). This study was carried out with police officers in China, the authors recommended this study to be replicated with the police officers from the United States.

Choi (2018) researched the influence of firefighting officials' social capital on subjective happiness and well-being. The authors conducted a quantitative research study with 351 active duty firefighters in South Korea. Choi (2018) utilized a descriptive analysis, t-test, and hierarchical regression analysis to process the results obtained from the responders. The findings indicated that the following factors play a significant role in subjective happiness among firefighters: networking with other professionals, trusting relationships with colleagues, and cooperation (Choi, 2018). In order to improve overall well-being and happiness among firefighters, the authors suggested strengthening social capital by increasing efforts to trust colleagues within the agency, promoting informal networking with community agencies, encouraging volunteer work, developing transparency in operating the organizational policy, and opening a communication pathway by networking with governmental officials (Choi, 2018). Choi (2018) recommended replicating this study with other first responders' occupational groups such as police officers and paramedics.

Significance of the Study

Previous studies examined life satisfaction among different occupations (Bopp et al., 2015; Holland et al., 2019); however, a gap existed requiring further research on how multiple variables affect life satisfaction among multiple occupational groups, specifically first responders (Sabarwal & Sharma, 2019; Wilson, 2015). A gap existed in the literature on life satisfaction among first responders (Cenk, 2018; Sabarwal & Sharma, 2019; Schnurr et al., 2009). This study sought to address the gap by examining the correlational relationship of the effects of mass shootings on life satisfaction of first responders. Specifically, this proposed study examined the correlational relationship

between PTSD, anxiety, and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) on life satisfaction.

The practical implications of this research study may help to introduce training programs for first responders in an effort to better understand the overall impact of mass shootings on this specific population. Another practical implication of this research study may bring public awareness of the challenges and consequences that first responders encounter following a mass shooting, and how those challenges affect their mental health and life satisfaction. Lastly, a practical implication may be the implementation of mental health programs to help first responders cope with the aftermath of mass shootings with the goal of increasing their quality of life and overall life satisfaction.

Summary and Conclusions

The literature review in chapter 2 focused on the need for further research on the topic of this study. This chapter discussed a gap that was identified based on the exploration of the background information and explained how the theoretical framework informs the variables in this study. The literature review supported the relationships between PTSD, anxiety, the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) and life satisfaction. However, the review of the literature revealed the lack of research pertaining first responder population. The issue of mass shootings was discussed in this chapter as well.

Chapter 3 will focus on the research methodology used in this study. This chapter will present the problem statement, research questions, and the hypotheses. The following information will be discussed in this chapter: research design, population and sample

selection, instrumentation, validity, and reliability of the instruments, data collection and management, data analysis procedures, threats to validity, and ethical considerations. The sections pertaining methodology and design will provide the justification regarding the reasoning for selecting a quantitative research and correlational design. The section pertaining population and sample selection will cover in depth the target population and methods for sample selection. The sections pertaining to instrumentation will explain how these instruments will be implemented. The validity and reliability sections will provide information regarding the accuracy of tools selected for this research study. Sections pertaining to data collection and management along with data analysis procedures will discuss procedures related to data gathering, and processing. Threats to validity will review the potential risks affecting the accuracy of this study. Finally, the ethical considerations section will cover possible concerns that may impact this research study as a whole.

Chapter 3: Research Method

The purpose of this quantitative correlational study was to examine whether a statistically significant relationship existed between PTSD, anxiety, and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) and life satisfaction of first responders who responded to a mass shooting. The literature review indicated that mass shootings have a statistically significant effect on the development of PTSD, anxiety, and the three dimensions of burnout (Jimenez et al., 2019; Lowe & Galea, 2017; Miron et al., 2014; Moukarzel et al., 2019; Shultz et al., 2013). The literature also revealed that PTSD, anxiety, and the three dimensions of burnout contribute to lower quality of life and lower life satisfaction (Bastos Machado de Resende et al., 2020; Berle et al., 2018; Karatzias et al., 2013; Moukarzel et al., 2019).

Prior studies addressed the connection between PTSD and life satisfaction (Berle et al., 2018; Karatzias et al., 2013), anxiety and life satisfaction (Bastos Machado de Resende et al., 2020; Grills-Taquechel et al., 2011), and the three dimensions of burnout and life satisfaction (Lala et al., 2016; Moukarzel et al., 2019). However, I discovered a gap in the literature regarding the understanding of how multiple independent variables such as PTSD, anxiety, and the three dimensions of burnout impact life satisfaction; therefore, additional research was needed to fill the gap to understand how multiple variables may impact life satisfaction of first responders (see Bartels, 2015; Chatzea et al., 2018). To address the gap, I developed five research questions and hypotheses to guide this study. Quantitative methodology was deemed appropriate for this study, along

with a correlational design, because most studies pertaining to life satisfaction included quantitative methodology to answer the research questions (see Alexopoulos et al., 2014; Bartels, 2015; Choi, 2018; Karatzias et al., 2013).

This chapter includes a description of the methodology and research design used in this quantitative correlational study. The statement of the problem is provided, the research questions and hypotheses are outlined, the rationale for the methodology and research design is provided, and the sample selection is explained. The instruments that were used to survey the participants, including a discussion of the validity and reliability of the measurement tools, are presented. Additionally, the data collection and management processes, data analysis procedures, and ethical considerations are described. The summary provides an overview of the chapter and a recap of the procedures that were followed during the research process.

Statement of the Problem

Recent literature addressed the long-term implications of mass shootings on different populations and indicated the correlational relationship between mass shootings and the development of PTSD (Potard et al., 2018; Wilson, 2015). Literature also supported a relationship between mass shootings and anxiety disorder (Grills-Taquechel et al., 2011). Additionally, studies revealed a relationship between mass shootings and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement; Day et al., 2017; McCarty et al., 2019). As a result, individuals reported experiencing a significantly lower quality of life (Bastos Machado de Resende et al., 2020; Berle et al., 2018; Moukarzel et al., 2019). Tas and Iskender

(2018) indicated that life satisfaction had been associated with overall mental and physical well-being. A higher level of life satisfaction leads to fewer chronic physical conditions, lower levels of anxiety, and reduced burnout (Maslach & Leiter, 2016).

The highest level of effectiveness could be measured by lower long-term effects of PTSD by allowing the individuals to identify the impactful levels of single event traumas (Potard et al., 2018). Although research supported the relationships between each independent variable and life satisfaction, further research was needed on how multiple variables affect life satisfaction among other groups, such as first responders (see Sabarwal & Sharma, 2019; Wilson, 2015). It was not known whether or to what extent a statistically significant relationship existed between PTSD, anxiety, and the three dimensions of burnout and life satisfaction of first responders who responded to a mass shooting. A gap existed in the literature regarding the relationship between the independent variables and life satisfaction among first responders (Cenk, 2018; Sabarwal & Sharma, 2019; Schnurr et al., 2009). I sought to fill that gap by examining the possible correlational relationship between the independent variables and life satisfaction of first responders.

Research Questions and Hypotheses

This quantitative correlational study addressed the independent variables or predictor variables of PTSD, anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement, and the dependent variable or outcome variable of life satisfaction. These five variables were used in five research questions designed to address the problem statement.

The following research questions and hypotheses were used to guide the study:

RQ1: Is there a statistically significant relationship between PTSD and life satisfaction of first responders while controlling for anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement?

H_o1: There is no statistically significant relationship between PTSD and life satisfaction of first responders while controlling for anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement.

H_a1: There is a statistically significant relationship between PTSD and life satisfaction of first responders while controlling for anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement.

RQ2: Is there a statistically significant relationship between anxiety and life satisfaction of first responders while controlling for PTSD, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement?

H_o2: There is no statistically significant relationship between anxiety and life satisfaction of first responders while controlling for PTSD, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement.

H_a2: There is a statistically significant relationship between anxiety and life satisfaction of first responders while controlling for PTSD, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement.

RQ3: Is there a statistically significant relationship between MBI emotional exhaustion and life satisfaction of first responders while controlling for PTSD, anxiety, MBI depersonalization, and MBI personal achievement?

H_o3: There is no statistically significant relationship between MBI emotional exhaustion and life satisfaction of first responders while controlling for PTSD, anxiety, MBI depersonalization, and MBI personal achievement.

H_a3: There is a statistically significant relationship between MBI emotional exhaustion and life satisfaction of first responders while controlling for PTSD, anxiety, MBI depersonalization, and MBI personal achievement.

RQ4: Is there a statistically significant relationship between MBI depersonalization and life satisfaction of first responders while controlling for PTSD, anxiety, MBI emotional exhaustion, and MBI personal achievement?

H_o4: There is no statistically significant relationship between MBI depersonalization and life satisfaction of first responders while controlling for PTSD, anxiety, MBI emotional exhaustion, and MBI personal achievement.

H_a4: There is a statistically significant relationship between MBI depersonalization and life satisfaction of first responders while controlling for PTSD, anxiety, MBI emotional exhaustion, and MBI personal achievement.

RQ5: Is there a statistically significant relationship between MBI personal achievement and life satisfaction of first responders while controlling for PTSD, anxiety, MBI emotional exhaustion, and MBI depersonalization?

H_o5: There is no statistically significant relationship between MBI personal achievement and life satisfaction of first responders while controlling for PTSD, anxiety, MBI emotional exhaustion, and MBI depersonalization.

H_a5: There is a statistically significant relationship between MBI personal achievement and life satisfaction of first responders while controlling for PTSD, anxiety, MBI emotional exhaustion, and MBI depersonalization.

Research Methodology

In this study, quantitative methodology was employed to answer the research questions and test the hypotheses. Quantitative methodology is a scientific method of research that promotes an objective view by testing theories or hypotheses, examining the relationships between variables, establishing causal relationships between variables, and analyzing the research data using statistical tools (Leedy & Ormrod, 2015). The purpose of the current quantitative correlational study was to examine whether a statistically significant relationship existed between PTSD, anxiety, and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) and life satisfaction of first responders who responded to a mass shooting. Five research questions and corresponding hypotheses were developed to assess whether a statistically significant relationship existed between the variables in this study. I employed quantitative methodology to answer the research questions and test the hypotheses by using statistical measurements.

Qualitative methodology is used to understand lived experiences, attitudes, and opinions by gathering and examining nonnumerical data (Leedy & Ormrod, 2015). In qualitative research, the researcher collects data by conducting interviews, making observations, conducting focus groups, creating videos, and taking pictures (Leedy & Ormrod, 2015). The purpose of the current study was to examine whether a statistically

significant relationship existed between PTSD, anxiety, and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) and life satisfaction of first responders who responded to a mass shooting. Five research questions and corresponding hypotheses were developed to assess whether a statistically significant relationship existed between the variables in this study. I sought to examine the possible correlational relationships between the variables. The lived experiences of first responders were not explored in this research. Therefore, qualitative methodology was not a good fit for this study. Mixed-methods research is a combination of quantitative and qualitative designs (Leedy & Ormrod, 2015). A mixed-methods design was not appropriate for the current study because the purpose was to determine whether a statistically significant relationship existed between PTSD, anxiety, and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) and life satisfaction of first responders who responded to a mass shooting, not the lived experiences of first responders.

The literature review demonstrated that most researchers who examined life satisfaction used quantitative methodology. Kushlev et al. (2017) conducted a quantitative study that focused on happiness and well-being. Medvedev and Landhuis (2018) explored constructs of well-being, happiness, and quality of life using quantitative methodology. Karatzias et al. (2013) carried out a quantitative study to examine life satisfaction in individuals diagnosed with PTSD. Basinska and Wiciak (2013) analyzed the impact of work on the well-being of police officers and firefighters using a quantitative design. Alexopoulos et al. (2014) explored stress levels, job satisfaction, and

quality of life in a sample of police officers in Greece by conducting a quantitative study. Based on the literature review, a quantitative methodology was deemed to be appropriate for the current study.

Research Design

This quantitative study utilized a correlational design to examine and describe the relationships between the multiple independent variables, and one dependent variable. These independent variables included PTSD, anxiety, and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) as reported by different first responders. The dependent variable in this study was life satisfaction. The purpose of the correlational research is to determine whether a connection between multiple variables exists, and the extent of the connection, if found (Graßhoff et al., 2020).

The focus of correlational design was limited to the examination of predictive relationships between variables and not causal relationships (Graßhoff et al., 2020). The purpose of this research study was to determine if a relationship existed between PTSD, anxiety, MBI emotional exhaustion, MBI depersonalization, MBI personal achievement, and life satisfaction. However, the cause and effect relationship between variables was not examined in this study, and was not identified. Therefore, it was determined that the correlational design was the best approach for this study to help examine the connection between the variables and not the causal-comparative design, experimental, quasi-experimental, or descriptive design. The causal-comparative design seeks to identify the link between the variables after the event have already happened (Leedy & Ormrod,

2015). The experimental design seeks to manipulate the predictor variables, and implement random assignment and sampling (Leedy & Ormrod, 2015). The quasi-experimental design is implemented when random assignment cannot not be executed in the experiment, and when, ethically the treatment cannot be provided on a random basis (Leedy & Ormrod, 2015). Lastly, the descriptive design seeks to understand and describe the phenomenon by observing it without implementing any manipulations to it (Leedy & Ormrod, 2015).

The correlational research design was selected for this study, as there are multiple predictor variables with only one outcome variable. The hypotheses were outlined to determine the relationships between predictor variables and the outcome variable. The Short Post-Traumatic Stress Disorder Rating Interview (SPRINT) was used to measure the first predictor variable, PTSD. The Generalized Anxiety Disorder 7 Item Scale (GAD-7) was used to measure the second predictor variable, anxiety. In addition, the Maslach Burnout Inventory (MBI) was employed to measure the remaining variables of the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement). The outcome variable life satisfaction was measured by the Satisfaction with Life Scale (SWLS).

Population and Sample Selection

This quantitative study was dependent on the target population, a sample of that population, and a sample size to improve the quality of data. The target population is a category of people from which the sample of the study will be pulled for examination (Leedy & Ormrod, 2016). In research, a sample of population refers to a group of

individuals that belong to the population at large that is being studied, and able to represent that population for generalization purpose (Leedy & Ormrod, 2016). A G*Power calculation found a sample size of 92 participants to be minimal for this research study, which should be large enough to prevent the occurrence of the Type I or Type II error (see Appendix A). The following subsections covered target population and sample selection in details.

Target Population

Leedy and Ormrod (2015) defined target population as a category of people from which the sample of the study was pulled for examination. In this quantitative research study, a sample represented the entire target population that was examined by implementing a survey design that allowed the researcher to make appropriate generalizations based on the data collected from the participants. The target population for this study were first responders who experienced a mass shooting, and who were able to respond to questions pertaining to PTSD, anxiety, the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) and life satisfaction. According to the White House archives, there are approximately two million of first responders who serve in the United States in different roles (The White House, 2020). Based on the records provided by the FBI, the approximate number of first responders who responded to a mass shooting in 2019 is 10,000 (FBI, 2020). The target population for this study included approximately 10,000 of active duty or retired first responders who reside in the United States and responded to at least one mass shooting during the span of their career.

The research recruitment platform ResearchAndMe.com was utilized to recruit the participants for the study. ResearchAndMe.com is a network that connects researchers and research participants. Snowball method sampling was used to invite participants to take part in the study. Participants consisted of both male and female genders, and of different age groups. Potential participants were provided with a description of the study, including eligibility criteria. Eligibility criteria included the following requirements: a responded had to be a first responder (the law enforcement officers (police officers, state troopers, federal agents, sheriff's deputies, constables, and school resource officers), paramedics, EMTs, firefighters) (Klimley et al., 2018; Lanza et al., 2018; Motreff et al., 2020), over the age of 18 years old, residing in the United States for over five years, proficient in English language, and has responded to at least one mass shooting. For the purpose of this study, a mass shooting was defined as an act of gun violence that occurred in a public place, involving the death or injury of four or more individuals.

Sample

The target population for this quantitative study consisted of first responders, who have responded to at least one mass shooting during the length of their career. A first responder is an individual who is trained to respond to emergency situations, these individuals can be comprised of law enforcement officers, firefighters, paramedics, and EMTs (Lanza et al., 2018, Motreff et al., 2020). In order to determine a sample size for the study, a G*Power analysis was utilized. An F test value was selected in the test family window. Linear multiple regression was identified in the statistical test window. A priori

power analysis was used to calculate a sample size for this study (Buchner et al., 2017). Input parameters appropriate for linear multiple regression were as followed: an effect size of 0.15 was inputted, which revealed a medium effect size; α err prob = 0.05 was selected; power (1-β err prob) = 0.80 was indicated; a number of predictors in the study was 5 (Buchner et al., 2017). A G*Power calculation found the number of 92 participants to be minimal for this study (see Appendix A).

This quantitative study utilized two sampling methods: purposive and snowball. Both sampling methods are nonexperimental nonprobability methods (Leedy & Ormrod, 2015). A purposive method of sampling was based on the purpose of the study (Valerio et al., 2016). This type of recruitment was beneficial for this study as a sample intended to be generalized to the population at large, and represented all first responders who reside in the United States and who responded to a mass shooting (Valerio et al., 2016). Snowball sampling method allowed the researcher to recruit participants by sharing the information with a small group of individuals and asking them to share the study with other individuals, who might meet criteria to participate in the study (Valerio et al., 2016). This type of sampling method helped to obtain the required number of participants in a shorter period of time (Valerio et al., 2016). This researcher anticipated to obtain between 100 and 120 responses to the survey that were posted on ResearchAndMe.com participant recruitment platform, and opened in Microsoft Forms for four weeks.

Instrumentation

This quantitative research study was conducted utilizing a survey that was administered online via a self-report. The online survey was compiled from five different

measures: demographic information, the SPRINT, the GAD-7, the MBI, and the SWLS. The predictor variables also referred to as the independent variables were PTSD, anxiety, and the three dimensions of burnout (as measured as MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement), while the outcome variable also referred to as the dependent variable was life satisfaction. The variable PTSD was measured by the SPRINT measure. The variable anxiety was measured by the GAD-7 survey. The three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) were examined by the three subscales of the MBI scale. The dependent variable of life satisfaction was evaluated by the SWLS assessment.

All four instruments that were utilized in this study are Likert-type scales that assess a variety of constructs. Likert type scales are used to determine a participant's subjective experience or symptom through the use of a three to seven rating level (Capuano et al., 2016). Likert type scales are ordinal scales that provide the opportunity to compare items to provide an objective evaluation (Hartley, 2014). All instruments utilized in this study collected the data that allowed the researcher to draw the conclusions about the possible connections between the variables. The following four subsections discussed the instruments in details.

Short Post-Traumatic Stress Disorder Rating Interview

The Short Post-Traumatic Stress Disorder Rating Interview (SPRINT) was administered through the survey tool Microsoft Forms to determine the symptoms of PTSD among the first responders. The SPRINT is an eight-item self-assessment scale

that assesses the core symptoms of PTSD that include intrusion, avoidance, numbing, arousal, somatic malaise, stress vulnerability, role, and social functional impairment (Kim et al., 2008; Leiva-Bianchi & Gallardo, 2013; Norris et al., 2008). For each statement, the participant was asked to mark the box that most accurately reflected his or her response from 0 "not at all" to 4 "very much" (Connor & Davidson, 2001; Vaishnavi et al., 2006). Then, scores from each item were added together to attain a final score. The maximum possible score was 32, and represented the most severe symptomatic state, while a cutoff score of 14 has been suggested by the scale developers to warrant further assessment using a structured interview for PTSD (Connor & Davidson, 2001; Vaishnavi et al., 2006). If they exhibiting some symptoms of PTSD and in a clinical setting further diagnostic testing would be required. Scores of 0 to 14 indicated that there were no symptom of PTSD present. The permission to use this instrument was obtained from the founder of this assessment tool Dr. Jonathan Davidson.

Generalized Anxiety Disorder 7-Item

The Generalized Anxiety Disorder Scale (GAD-7) was administered through the survey tool Microsoft Forms to determine the symptom of anxiety among the first responders. GAD-7 is a seven item self-report assessment (Jordan et al., 2017; Kertz et al., 2013). For each statement, the participant provided a score of 0 (not at all), 1 (several days), 2 (more than half the days), or 3 (nearly every day) to the response categories (S. U. Johnson et al., 2019; Tiirikainen et al., 2018). Scores were summed to obtain a total scale score. GAD-7 total scores for the instrument ranged from 0 to 21 (Kertz et al., 2013; Spitzer et al., 2006). Scores from 0 to 4 indicated minimal anxiety; 5 to 9 mild

anxiety; 10 to 14 moderate anxiety; and 15 to 21 severe anxiety (Kertz et al., 2013; Spitzer et al., 2006). No permission is required to administer, download, reproduce, or translate this scale. Credit was given to the developers of the instrument Drs. Robert Spitzer, Janet Williams, and Kurt Kroenke (2006).

Maslach Burnout Inventory

The Maslach Burnout Inventory (MBI) was administered through the survey tool Microsoft Forms to measure the level of burnout among the first responders. For each statement, the participant was asked to mark the box that most accurately reflected his or her response. Then, their scores were added up by color (Poghosyan et al., 2009). Categories were rated on a scale from 0 to 18 (Bakker et al., 2002). All MBI questions were scored based on a measure that consisted of seven levels from 0 "never" to 6 "every day" (Bria et al., 2014; Galanakis et al., 2009). Initial inventory consisted of three subscales: emotional exhaustion, depersonalization and personal achievement (Maslach, 2017; Maslach & Jackson, 1981; Maslach & Leiter, 2016). Each subscale measured its own category of burnout using numerical scoring from 0 to 6 (Pérez-Mármol & Brown, 2019; Taris et al., 1998). All subscales included reverse-scored items (Nguyen et al., 2018). Maslach & Leiter (2016) identified low, moderate, and high levels of each item based on the numerical scoring from 0-6. The scores in each subscale were summed up together. There were three items in each subscale (Maslach & Leiter, 2016). This assessment instrument is copyrighted. In order to utilize this instrument, a remote online survey license was purchased from MindGarden.com, the platform that holds a license

for the MBI administration. The license for online administration was purchased upon IRB approval, as license has an expiration date.

Satisfaction With Life Scale

The Satisfaction with Life Scale (SWLS) survey was administered through ResearchAndMe.com to determine the level of life satisfaction among first responders. SWLS is a five-item self-assessment designed to measure subjective judgments of one's life satisfaction (Diener et al., 1985; Medvedev & Landhuis, 2018; Tas & Iskender, 2018). Participants were asked to rate each of the five statements using a point scale that ranged from 7 (strongly agree) to 1 (strongly disagree). The SWLS scores were added up together with the highest possible score 35. Scores from 31 and 35 indicated extreme satisfaction with life. Scores between 26 and 30 indicated satisfaction; 21 and 25 indicated slight satisfaction. Score of 20 indicated neither satisfaction nor dissatisfaction with life, cut-offs were used as benchmark. Scores between 15 and 19 indicated slight dissatisfaction with life circumstances. Scores between 10 and 14 indicated dissatisfaction, and 5 and 9 extreme dissatisfaction with life (Diener et al., 1985; Pavot & Diener, 1993). The scale is copyrighted; however, no permission is required to use by professionals (researchers and practitioners) as long as credit is given to the authors of the scale: Ed Diener, Robert Emmons, Randy Larsen and Sharon Griffin (1985).

Validity and Reliability

In quantitative research, validity refers to the degree that an assessment instrument measures what it intends to measure (Lopez-Ramos et al., 2018). Jovanovic (2016) and Leedy and Ormrod (2015) outlined four types of validity that are commonly

measured in research. Those four types are factorial or structural validity, criterion validity, construct validity, and face validity. Factorial validity also called structural validity refers to the degree to which the assessment tool that is designed to measure a particular item, factor, or construct actually measures it (Jovanovic, 2016; Leedy & Ormrod, 2015). Criterion validity refers to the extent to which an assessment tool is related to other assessments that assess the same variables (Leedy & Ormrod, 2015). Construct validity is the degree to which an instrument measures the intended construct or item (Leedy & Ormrod, 2015). Face validity is where an instrument measures the concept it intends to measure (Leedy & Ormrod, 2015). Validity is a concept utilized to help determine the quality of research (Jovanovic, 2016).

According to Leedy and Ormrod (2015) reliability refers to the ability of an instrument to measure what it intends to measure. A reliable instrument will produce consistent results over time. There are four different types of reliability: test-retest, interrater, parallel forms, and internal consistency. The test-retest reliability is achieved by administering the same test to the same population on two or more separate occasions (Leedy & Ormrod, 2015). Interrater reliability is attained by conducting identical assessment with the same group of individuals (Leedy & Ormrod, 2015). Parallel forms reliability is tested by administering different versions of the same scale which are designed to be identical (Leedy & Ormrod, 2015). Lastly, internal consistency also refers to homogeneity that examines the correlation between several subscales within a scale that are designed to assess the same construct (Leedy & Ormrod, 2015). The validity and

reliability of the SPRINT, the GAD-7, the MBI, and the SWLS were discussed in the following sections.

SPRINT

The SPRINT assessment was developed in 2001 and has been in use ever since (Connor & Davidson, 2001). The psychometric properties of the SPRINT measure have been examined and validated in several studies (Connor & Davidson, 2001; Kim et al., 2008; Leiva-Bianchi & Gallardo, 2013; Norris et al., 2008). To assess validity and reliability of the SPRINT, Connor and Davidson (2001) compared this measure against the MINI structured interview, the Davidson Trauma Scale, the Treatment Outcome for PTSD Scale, the Connor-Davidson Resilience Scale, the Sheehan Stress Vulnerability Scale, the Sheehan Disability Scale, and the Clinical Global Impressions of Severity and Improvement Scales. Connor and Davidson (2001) observed positive test-retest reliability (ICC of 0.778), internal consistency (Cronbach's alpha was 0.88), convergent (r_0.73) and divergent (r_0.12) validity were obtained. Additionally, this tool was responsive to changes in PTSD symptoms over time and demonstrated good correlation with other assessment tools that measure PTSD (Connor & Davidson, 2001). It was discovered that diagnostic accuracy of the SPRINT was at 96% (Connor & Davidson, 2001). The SPRINT assessment tool demonstrates strong psychometric properties and has been proven to be a reliable, valid, and homogeneous measure of PTSD condition (Connor & Davidson, 2001; Kim et al., 2008; Leiva-Bianchi & Gallardo, 2013; Norris et al., 2008).

GAD-7

The GAD-7 assessment was developed in 2006 to assess symptoms of anxiety (Spitzer et al., 2006). The psychometric properties of the GAD-7 measure have been examined and validated by many researchers in the field (S. U. Johnson et al., 2019; Jordan et al., 2017; Kertz et al., 2013; Spitzer et al., 2006; Tiirikainen et al., 2018). To establish validity and reliability, Spitzer et al. (2006) implemented GAD-7 with 2740 adult patients who reported having symptoms of anxiety to their primary care providers. The findings demonstrated good test-retest reliability (0.83), positive criterion ($r = 0.80$), construct (0.58-0.75), factorial (0.69-0.81), and procedural validity with a scores of 89% in optimized sensitivity and 82% in specificity (Spitzer et al., 2006). Cronbach's alpha ranged from $\alpha = 0.83$ to $\alpha = 0.93$ across all items on pre- and post-treatment indicating high internal consistency (S. U. Johnson et al., 2019). Additionally, the GAD-7 had a high correlation with other instruments that measure anxiety such as the Beck Anxiety Inventory ($r = 0.69$, $p < 0.01$), the Symptom Check List 90-R ($r = 0.76$, $p < 0.01$), and the Global Severity Index ($r = 0.72$, $p < 0.01$) (S. U. Johnson et al., 2019). The GAD-7 scale has good internal consistency and convergent validity with anxiety, stress, and worry (S. U. Johnson et al., 2019; Kertz et al., 2013; Spitzer et al., 2006; Tiirikainen et al., 2018).

MBI

The MBI assessment instrument was developed in 1981 to measure the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) (Maslach & Jackson, 1981). The MBI has been validated and proven to be one of the most reliable tools for measurement of burnout in the world

(Bakker et al., 2002; Bria et al., 2014; Nguyen et al., 2018; Pérez-Mármol & Brown, 2019; Poghosyan et al., 2009). To determine validity and reliability of this tool, Maslach and Jackson (1981) implemented the MBI with two separate samples that consisted of 605 and 420 individuals who were employed in different occupational settings such as police officers, nurses, physicians, paramedics, EMTs, firefighters, social workers, therapists, attorneys, and teachers (Maslach & Jackson, 1981). The findings demonstrated good convergent validity on Emotional Exhaustion ($r = 0.41$, $p < 0.01$) and Depersonalization ($r = 0.57$, $p < 0.001$) subscales and high correlations with behavioral ratings (Maslach & Jackson, 1981). Additionally, findings also shown high Cronbach's alpha coefficients of 0.83 in frequency and 0.84 in intensity, demonstrating excellent dependability and consistency of this tool (Maslach & Jackson, 1981).

SWLS

The SWLS was developed in 1985 to assess the elements of overall life satisfaction (Diener e t al., 1985). The psychometric properties of the SWLS have been examined and validated in several studies (Diener et al., 1985; Jovanovic, 2016; López-Ortega et al., 2016; Lopez-Ramos et al., 2018; Pavot et al., 1991; Pavot & Diener, 1993). In order to measure validity and reliability of the SWLS, Diener et al. (1985) administered this tool to three different samples of the individuals: 176 and 163 undergraduate university students, and 53 elderly persons ages 75 and under. The findings discovered factorial, structural, and convergent validity with the scores higher than 0.60 (Diener et al., 1985). The study conducted by Lopez-Ramos et al. (2018) indicated that Cronbach's alpha coefficient was $\alpha = 0.777$, while the test-retest

correlation coefficient was 0.82, demonstrating reliability ratings (Lopez-Ramos et al., 2018). The scores on the SWLS demonstrated moderate to high correlation with other assessment tools that measure subjective well-being and life satisfaction such as the Rosenberg Self-Esteem Scale and the Marlowe-Crowne Social Desirability Scale (Diener et al., 1985). Prior research demonstrates the proof of validity and reliability of this measure.

Data Collection and Management

The data collection for this study began upon approval from the IRB of Walden University. Walden University's approval number for this study is 04-28-21-0184546 and it expires on April 27, 2022. The research was posted on ResearchAndMe.com, the internet research recruitment platform. All ethical guidelines established by Walden University IRB were followed in the data collection and management process. Additionally, the researcher made sure that all federal laws and regulations pertaining to the protection of human subjects were followed as well. As per federal Code 45 outlined by the Department of Health and Human Services, office of the Human Research Protections, the gathering of personal identifying information that includes, but not limited to, first and last name, social security number, date of birth, and address is strictly prohibited. No such information was collected in this research study.

The research data for this quantitative study were collected by using the internet research platform ResearchAndMe.com and through the survey tool Microsoft Forms. The researcher paid the fee to post the research study on ResearchAndMe.com, the survey tool Microsoft Forms was a free survey service. The research account on

ResearchAndMe.com website was activated upon payment reception. The payment was made upon IRB approval. The researcher utilized the survey data collection method to gather information. The target population were first responders; individuals who are trained to respond to emergency situations (Lanza et al., 2018). The survey was posted on ResearchAndMe.com and open in Microsoft Forms for four weeks, and was available to approximately 10,000 first responders who responded to a mass shooting. A G*Power calculation found a sample size of 92 participants to be minimal for this research study, which should be a large enough number to maintain the validity of the research. However, the researcher anticipated a number between 100 and 120 participants to respond to the survey.

Participants were asked to complete a survey, which was comprised of seven separate sections. Sections were presented as followed: the demographic information, the SPRINT scale to assess symptoms of PTSD, the GAD-7 scale to assess signs of anxiety, the three subscales of the MBI scale were on three separate sections and were used to assess the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement), and the SWLS scale to assess life satisfaction. All participants completed the survey voluntarily. No compensation was offered for participation in this study. The survey responses were sent automatically to the researcher for analysis. Confidentiality was maintained at all times, as the survey did not collect any personal identifiable information (PII) from the respondents. The researcher was the only individual that received the survey responses, and did not know who completed the survey.

The correlational relationship between all the variables, independent and dependent, was determined based on the responses received from the participants of the study, who responded to the demographic questions and assessment questions. The reasoning for implementation of multiple assessment scales in this study was based on the fact that there was no single measurement scale that was able to assess all variables addressed in this study. The assessments that were utilized in this study are Likert-type scales.

After four weeks, the survey closed and the researcher used a personal password protected computer to download the raw data obtained from the responders. Data were downloaded into Windows Excel spreadsheet, cleaned, and then exported into IBM SPSS Statistics software for MacOS Version 25, for data analysis. Upon completion of the study, the researcher transferred all data on a password secured USB flash drive, and, as per Walden University policy, will keep the data for five years at home in a locked safe cabinet. The USB flash drive with research data will be available for five years for audit purposes, if needed. Upon expiration of five year period, all data will be destroyed, including the USB flash drive and no longer will be available.

Data Analysis Procedures

The purpose of this quantitative correlational study was to examine if a statistically significant relationship existed between PTSD, anxiety, and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) on life satisfaction of first responders who responded to a mass shooting. The literature review discovered the connection between PTSD and life

satisfaction (Berle et al., 2018; Karatzias et al., 2013), anxiety and life satisfaction (Bastos Machado de Resende et al., 2020; Grills-Taquechel et al., 2011), and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) and life satisfaction (Lala et al., 2016; Moukarzel et al., 2019). However, it was discovered that there was a gap in the literature regarding the understanding of how multiple independent variables such as PTSD, anxiety, and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) impact life satisfaction; therefore, additional research was needed to fill the gap and to understand how multiple variables would impact life satisfaction of first responders (Bartels, 2015; Chatzea et al., 2018). To address the gap, five research questions and hypotheses were outlined to guide this study.

This study was conducted using quantitative survey research, utilizing a correlational design, investigating the relationship between PTSD, anxiety, the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement), and life satisfaction of first responders. Multiple regression was utilized to examine, and describe the relationships between the multiple independent variables, and one dependent variable (Leedy & Ormrod, 2015). Multiple regression is a statistical approach that measures several independent variables, and determines if these independent variables may have any significant impact on a dependent variable (Graßhoff et al., 2020; Leedy & Ormrod, 2015). In other words, it demonstrates the separate contribution of each independent variable, to a single dependent variable (Graßhoff et al., 2020).

The data analysis was executed using two types of statistics: descriptive and inferential statistics. To analyze the raw data the IBM SPSS Statistics for MacOS Version 25 was utilized. All data were collected using an online survey compiled from the following scales: the SPRINT, the GAD-7, the MBI, the SWLS, and demographic information. The data included the five independent variables and one dependent variable. The independent variables in this study were PTSD, anxiety, and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement), while the dependent variable was life satisfaction of first responders. The SPRINT measured PTSD variable, the GAD-7 measured anxiety variable, the MBI measured the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) variables, while the SWLS measured life satisfaction variable.

Demographic information assured that inclusion criteria was met. The participants had to meet a specific criteria to be allowed to participate in the study. The participants had to be first responders. All scales that were employed in this study were Likert type scales, which are ordinal scales (Hartley, 2014). However, ordinal data must be converted to interval data in order to analyze it with the IBM SPSS statistical software. All responses were provided in numeral format, added up together by the scale, converted to interval data, and organized for inferential statistics. The way the researcher converted ordinal data to interval data was by adding up responses the participants provided. This procedure provided the conversion into interval data (Capuano et al., 2016; Hartley, 2014).

In order to answer research questions, an adequate number of participants had to be recruited. In order to determine an adequate sample size for the study, a G*Power analysis was utilized. A G*Power calculation found the number of 92 participants to be minimal for this study (see Appendix A). The goal was to recruit a minimum of 120 participants to assure appropriate sample size and to prevent threats to validity. The survey was administered via ResearchAndMe.com, the internet research recruitment platform, and through the survey tool Microsoft Forms. To encourage honest and truthful responses from the participants, the researcher put in place specific data management and confidentiality procedures for data collection.

The next step in data analysis was data cleaning. The raw data obtained from the participants were transferred into Windows Excel spreadsheet for cleaning and analysis readiness. All duplicate data were removed, missing values were excluded, errors fixed, and unneeded characters (i.e., comas, periods, apostrophes, etc.) deleted. Each respondent was automatically assigned a number to maintain the confidentiality of the participants. The scores for the SPRINT, the GAD-7, the three subscales of the MBI, and the SWLS were calculated separately per scale and then added up together for each participant. The demographic information was converted into numerical data. Finally, all clean data were placed in a separate Windows Excel spreadsheet and exported into IBM SPSS Statistics for MacOS Version 25 software for processing and analysis.

The processing and analysis step were performed in the IBM SPSS software and it included the data cleaning process to analyze the data received from the participants. Data processing, cleaning, and analysis procedure allowed the researcher to assure that

data inputted in IBM SPSS software was valid for the statistical tests recommended for this study. The researcher utilized descriptive statistics to summarize the sample data. According to Leedy and Ormrod (2015) descriptive statistics is a type of statistics that summarizes and simplifies the data by converting it into graphs and charts. The data pertaining the independent variables of PTSD, anxiety, and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) was gathered by implementing the following scales: the SPRINT, the GAD-7, and the three subscales of the MBI. The data pertaining the dependent variable of life satisfaction was gathered by implementing the SWLS. The demographic information was collected to assure that the inclusion criteria was met. The statistical significance was set at $p < .05$ for the purposes of testing of the hypotheses (Buchner et al., 2017). All data were organized into different categories by the mean, range, frequency, and standard deviation in terms of age, gender, marital status, educational level, employment type, type of first responder, area of service, etc. Lastly, all data from descriptive statistics were organized and converted into tables and charts for easy inquiry.

The researcher conducted test of assumption for conducting inferential statistical analysis. There were certain assumptions that had to be made from a statistical standpoint in order to perform a multiple regression analysis. These assumptions included assuming the dependent variable was a continuous variable and there were no less than two independent variables that were continuous. Additionally, the assumptions of independence of observation, linearity between independent and dependent variables, homoscedasticity, the absence of multicollinearity, the absence of outliers, and a normal

distribution of residuals (see Laerd Statistics, 2021). As long as those assumptions were not violated the researcher was able to run inferential analysis using multiple regression.

The final scores were calculated in accordance with the instructions provided by the original authors who developed the scales. The measurement scales were used within the frame outlined by the original developers who established reliability and validity of the tools. The final scores delivered a measurable results that allowed the researcher to measure the independent and dependent variables in this study, and then the scores were converted from ordinal data into interval data for easier analysis.

Finally, a multiple linear regression was utilized to determine the extent of a statistically significant relationship between the independent variables in this study, PTSD, anxiety, the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement), on the dependent variable life satisfaction. The aggregate data that were retrieved from IBM SPSS from the multiple linear regression analysis were used to determine the correlational relationship between all these variables.

Threats to Validity

There were multiple potential threats to validity that have been identified and needed to be addressed in this study. Bias related to self-reporting was one of the potential threats to validity which could occur in this research study. Over-reporting, or under-reporting, when answering the survey questions may lead to inaccurate results and possible errors in the findings. In the advertising post, the researcher encouraged

participants to answer the survey questions honestly and truthfully to help maintain validity of the study.

Another potential threat to validity was associated with a sample size. A G*Power calculation found the number of 92 participants to be minimal for this study (see Appendix A). However, when a minimal number of participants is not met, a small sample size may pose a threat to validity in any research study. Assuring a larger sample size would help to maintain validity and allow for generalizability of the results in this study. The final sample in this study was 105.

Another potential threat to validity was affiliated with the correlational design, which is limited to the examination of predictive relationships, not causation (Leedy & Ormrod, 2015). The purpose of this research study was to determine if a relationship existed between PTSD, anxiety, MBI emotional exhaustion, MBI depersonalization, MBI personal achievement, and life satisfaction. However, the cause and effect relationship between variables was not examined in this study, and was not identified. Therefore, if such relationship existed, further research could be conducted to explore it.

Lastly, another potential threat to validity was associated with the assessment tools that were utilized in this study: the SPRINT (Connor & Davidson, 2001; Kim et al., 2008; Leiva-Bianchi & Gallardo, 2013), the GAD-7 (Kertz et al., 2013; Spitzer et al., 2006; Tiirikainen et al., 2018), the MBI (Bakker et al., 2002; Poghosyan et al., 2009; Maslach, 1993), and the SWLS (Diener et al., 1985; Jovanović, 2016; Pavot & Diener, 1993). Each assessment tool utilized in this study was a Likert-type measure. Unfortunately, numerical data may not accurately represent experiences that first

responders face. However, all measurement tools that were employed in this study have well established construct validity and reliability. Utilizing these measurements helped lower the threat to validity in this research study.

Ethical Considerations

This quantitative correlational research study did not foresee any ethical dilemmas or problems. This study was not funded by any government, public, or private institutions. The researcher conducting this study assumed all responsibilities for the research process. No conflict of interest was expected to arise during the process of research. The researcher began data collection upon obtaining approval from the IRB of Walden University. In order to protect all study participants, the IRB ethical guidelines were followed without deviations. The population that was recruited to participate in this study did not belong to a vulnerable population. In research, vulnerable population refers to children, adolescents, pregnant women, incarcerated individuals, elderly individuals, and individuals with physical or developmental disabilities (Leedy & Ormrod, 2015). The vulnerable population is protected by federal laws and regulations in accordance with the Belmont Report issued by the Department of Health and Human Services, office of Human Research Protections (2020).

All research data obtained from the participants was secured and protected. ResearchAndMe.com, the online recruitment research platform and the survey tool Microsoft Forms were employed to execute the survey. The researcher paid the required fee prior to posting the study online. The link to take the study was available to the participants for four weeks from the day of initial posting. When participants clicked on

the link, it navigated them to ResearchAndMe to answer eligibility questions (approximately 2-3 minutes), once participants were determined to be eligible they were automatically sent the link to the Microsoft Forms online survey. ResearchAndMe.com utilizes sophisticated security system for encrypted communication that is validated and updated on a regular basis (ResearchAndMe, 2021). ResearchAndMe.com uses HTTPS encryption system to transmit the research data (ResearchAndMe, 2021). In order to access ResearchAndMe.com website and Microsoft Forms webpage, individual password protected accounts were required, only the researcher has access to those accounts.

After four weeks, the survey had closed and the researcher used a personal password protected computer to download the raw data obtained from the responders. Data was downloaded into Windows Excel spreadsheet, cleaned, and then exported into IBM SPSS Statistics for MacOS Version 25, for data analysis. Upon completion of the study, the researcher had transferred all data on a password secured USB flash drive, and as per Walden University policy, will keep the data for five years at home in a locked safe cabinet. The USB flash drive with research data will be available for five years for audit purposes, if needed. Upon expiration of five year period, all data will be destroyed, including the USB flash drive and no longer will be available.

Respect for Persons

Every participant in this study was treated with dignity and respect. The researcher recognized that every person was unique and has rights, freedom, and liberty. The participants were provided autonomy to participate in the study. The researcher provided the informed consent prior to beginning the survey process. The population for

this study consisted of active duty or retired first responders. All participants had to be over the age of 18, in order to be eligible to take the survey. To ensure the privacy of participants and the integrity of the research, all participants were assigned a number, as identifying information such as name, date of birth, or social security number were not collected in this study.

Beneficence

The Department of Health and Human Services, office of Human Research Protections refers to beneficence as a concept where the researcher must protect the research subjects from any potential harm (Department of Health and Human Services, 2020). According to Leedy and Ormrod (2015), beneficence intends to maximize the benefits of the research while minimizing the potential risks to the participants. This research did not foresee any potential harm to the participants, as the researcher had no direct contact with any of them. However, questions pertaining to PTSD, anxiety and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) may had been deemed delicate to participants. A brief statement was added to the informed consent form warning participants about potential delicate questions. The statement advised the participants that they could exit the survey at any given time without repercussions if they experienced uneasiness caused by the survey questions. This research did not ask participants to disclose personal identifying information, only demographic information such as age, gender, marital status, educational status, and occupational group. The findings of this quantitative correlational

research may significantly benefit the first responders' population as it may potentially deliver a better understanding of the determinants that contribute to life satisfaction.

Justice

In research, justice refers to the equal distribution of risks and benefits of participation (Department of Health and Human Services, 2020). All research participants must be treated equally. Recruitment processes must be conducted in an ethical and equal way. The researcher must assure that all participants are protected from any form of foreseeable harm. In addition, the benefits of the research must be maximized to the participants, while risks minimized. The researcher must assure that all participants are provided with the informed consent and explained that participation in the study is voluntary and not mandatory. The informed consent was placed on the first page of the survey, and participants were asked to acknowledge that they understand the research process, and accept the terms and conditions of the survey. If participants did not wish to acknowledge, they could close the survey without any consequences or penalty. No personal information was collected from the participants.

Summary

Chapter 3 provided a summary regarding the research methodology used in this study. This chapter discussed the problem statement, research questions, and the hypotheses. The following information was covered in this chapter: research design, population and sample selection, instrumentation, validity, and reliability of the instruments, data collection and management, data analysis procedures, threats to validity, and ethical considerations. The sections pertaining research methodology and

design provided the explanation regarding the reasoning for selecting a quantitative research and correlational design. The section pertaining population and sample selection discussed the target population and methods for sample selection. The sections pertaining to instrumentation explained how the instruments will be implemented during the research process. The validity and reliability sections provided information regarding the accuracy of measurement tools selected for this research study. Sections pertaining to data collection and management along with data analysis procedures discussed procedures related to data collection, analysis, and processing. Threats to validity reviewed the potential risks that may arise during this study. Lastly, the ethical considerations section provided the coverage concerning respect for persons, beneficence, and justice.

The purpose of this quantitative correlational study was to examine if a statistically significant relationship existed between PTSD, anxiety, and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) on life satisfaction of first responders who responded to a mass shooting. While prior research supported the relationships between each independent variable with life satisfaction, further research was needed on how multiple variables affect life satisfaction among other groups, such as first responders (Sabarwal & Sharma, 2019; Wilson, 2015). Therefore, it was not known if, and to what extent, a statistically significant relationship existed between PTSD, anxiety, the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) on life satisfaction of first responders who responded to a mass shooting. An academic gap

existed in the literature on life satisfaction among first responders (Cenk, 2018; Sabarwal & Sharma, 2019; Schnurr et al., 2009).

Chapter 4 will discuss data analysis and descriptive findings. This chapter will cover sample profile, descriptive statistics, data screening and cleaning, validity, reliability, test of assumptions, power analysis, and alignment. The hypotheses and research questions regarding the correlational relationship of the effects of mass shootings on life satisfaction of first responders will be outlined. Lastly, this chapter will demonstrate tables and charts that will be produced upon data analysis.

Chapter 4: Data Analysis and Results

The purpose of this quantitative correlational study was to examine whether a statistically significant relationship existed between PTSD, anxiety, and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) and life satisfaction of first responders who responded to a mass shooting. Although prior research demonstrated the relationships between each independent variable and life satisfaction, further research was needed on how multiple variables affect life satisfaction among other occupational groups, such as first responders (Sabarwal & Sharma, 2019; Wilson, 2015). It was not known whether or to what extent a statistically significant relationship existed between PTSD, anxiety, and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) and life satisfaction of first responders who responded to a mass shooting. To address this gap, I formulated a problem statement to examine whether or to what extent a mass shooting impacted life satisfaction of first responders (see Cenk, 2018; Sabarwal & Sharma, 2019; Schnurr et al., 2009). I sought to fill the gap by examining the possible correlational relationship between the variables related to the effects of mass shootings and life satisfaction of first responders.

This quantitative correlational study was guided by the following five research questions and hypotheses to address the problem statement.

RQ1: Is there a statistically significant relationship between PTSD and life satisfaction of first responders while controlling for anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement?

H_o1: There is no statistically significant relationship between PTSD and life satisfaction of first responders while controlling for anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement.

H_a1: There is a statistically significant relationship between PTSD and life satisfaction of first responders while controlling for anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement.

RQ2: Is there a statistically significant relationship between anxiety and life satisfaction of first responders while controlling for PTSD, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement?

H_o2: There is no statistically significant relationship between anxiety and life satisfaction of first responders while controlling for PTSD, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement.

H_a2: There is a statistically significant relationship between anxiety and life satisfaction of first responders while controlling for PTSD, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement.

RQ3: Is there a statistically significant relationship between MBI emotional exhaustion and life satisfaction of first responders while controlling for PTSD, anxiety, MBI depersonalization, and MBI personal achievement?

H_o3: There is no statistically significant relationship between MBI emotional exhaustion and life satisfaction of first responders while controlling for PTSD, anxiety, MBI depersonalization, and MBI personal achievement.

H_a3: There is a statistically significant relationship between MBI emotional exhaustion and life satisfaction of first responders while controlling for PTSD, anxiety, MBI depersonalization, and MBI personal achievement.

RQ4: Is there a statistically significant relationship between MBI depersonalization and life satisfaction of first responders while controlling for PTSD, anxiety, MBI emotional exhaustion, and MBI personal achievement?

H_o4: There is no statistically significant relationship between MBI depersonalization and life satisfaction of first responders while controlling for PTSD, anxiety, MBI emotional exhaustion, and MBI personal achievement.

H_a4: There is a statistically significant relationship between MBI depersonalization and life satisfaction of first responders while controlling for PTSD, anxiety, MBI emotional exhaustion, and MBI personal achievement.

RQ5: Is there a statistically significant relationship between MBI personal achievement and life satisfaction of first responders while controlling for PTSD, anxiety, MBI emotional exhaustion, and MBI depersonalization?

H_o5: There is no statistically significant relationship between MBI personal achievement and life satisfaction of first responders while controlling for PTSD, anxiety, MBI emotional exhaustion, and MBI depersonalization.

H_a5: There is a statistically significant relationship between MBI personal achievement and life satisfaction of first responders while controlling for PTSD, anxiety, MBI emotional exhaustion, and MBI depersonalization.

The research questions and hypotheses were formulated based on five independent variables and one dependent variable. The independent variables in this study were PTSD, anxiety, and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement). The dependent variable was life satisfaction. The variable PTSD was measured by the SPRINT instrument. The variable anxiety was measured by the GAD-7 survey. The three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) were examined by the three subscales of the MBI scale. The dependent variable of life satisfaction was evaluated by the SWLS assessment tool. Table 1 includes the independent and dependent variables outlined in the study, the assessment tools that were used to measure each variable, and the number of items in each assessment tool.

Table 1

Research Variables and Assessment Tools

Variable	Scale	Items
Independent variables		
PTSD	SPRINT	8
Anxiety	GAD-7	9
MBI emotional exhaustion	MBI Emotional Exhaustion Sub-scale	9
MBI depersonalization	MBI Depersonalization Sub-scale	5
MBI personal achievement	MBI Personal Achievement Sub-scale	8
Dependent variable		
Life Satisfaction	Satisfaction With Life Scale	5

Chapter 4 provides a summary of data collection and data analysis procedures. I explain how data were collected, describe the process for data analysis, and provide a report of data analysis results. This chapter also includes the sample demographics, descriptive statistics, data screening and cleaning, validity and reliability, test of assumptions, power analysis, alignment, results, and summary. The data and results are presented in paragraph text, tables, and figures.

Descriptive Findings

For this quantitative correlational study, I used two sampling methods: purposive and snowball. Both sampling methods are nonexperimental nonprobability methods

(Leedy & Ormrod, 2015). Purposive and snowball sampling methods were used to generate participation from the target population containing 10,000 first responders who had responded to at least one mass shooting during their career. All first responders were reached through a post on LinkedIn that included the link for an online survey. The link was reshared by other LinkedIn members. Participation was voluntary, and an online survey was available over a 2-week period. The total number of survey responses received was 106. All 106 responses were complete. After data screening and cleaning, I identified one outlier that was removed from the sample. The final sample consisted of 105 responses. The necessary minimum sample size, per a G*Power analysis (see Appendix A), was 92. Therefore, the minimum sample size was exceeded by 13 responses.

Sample Demographics

This section provides a synopsis of the participants of the study. The following factors are included: age, gender, race, ethnicity, marital status, education level, type of first responder, employment status, U.S. region of service, and community of service. Statistical data and tables were generated from IBM SPSS Statistics for MacOS Version 25.

Age

The sample was comprised of participants ages 18 to 69. Most respondents were between the ages 30 and 59. Table 2 demonstrates the distribution of participants by age groups.

Table 2

Participants' Age Groups

Age	Frequency	Percentage
18–29	2	1.9%
30–39	43	41.0%
40–49	32	30.5%
50–59	23	21.9%
60–69	5	4.8%
70+	0	0%

Note. There were no responses for age group 70+.

Gender

The sample included the representatives from male and female genders. There were no respondents who identified as other. Table 3 demonstrates the distribution of participants by gender.

Table 3

Participants' Gender

Gender	Frequency	Percentage
Male	75	71.4%
Female	30	28.6%
Other	0	0%

Note. There were no respondents who identified as other.

Race

The sample consisted of respondents from various racial backgrounds. Table 4 exhibits the distribution of all respondents by race.

Table 4

Participants' Race

Race	Frequency	Percentage
African American	12	11.4%
American Indian or Alaskan Native	2	1.9%
Asian	3	2.9%
White	78	74.3%
Other	10	9.5%
Native Hawaiian or Pacific Islander	0	0

Note. There were no respondents who identified as Native Hawaiian/Pacific Islander race.

Ethnicity

All respondents disclosed their ethnicity. Table 5 displays the distribution of participants by ethnicity.

Table 5

Participants' Ethnicity

Ethnicity	Frequency	Percentage
Hispanic	68	64.8%
Non-Hispanic	37	35.2%

Marital Status

The sample size was made up of individuals with various marital status. The sample consisted of 15 respondents who were divorced, representing 14.3% of the sample size; 74 individuals who reported being married, representing 70.5% of the sample; one

person who reported being separated, representing 1.0% of the sample; and lastly, 15 individuals who were single, representing 14.3% of the sample. There were no responses from the participants whose marital status was widowed or other. Table 6 illustrates the distribution of respondents by marital status.

Table 6

Participants' Marital Status

Marital Status	Frequency	Percentage
Divorced	15	14.3%
Married	74	70.5%
Separated	1	1.0%
Single	15	14.3%
Other	0	0%
Widowed	0	0%

Note. There were no responses from the participants whose marital status was widowed or other.

Educational Level

The sample included individuals with a variety of educational backgrounds. There were two persons with a doctoral degree, representing 1.9% of the entire sample; 13 individuals with a graduate degree, representing 12.4% of the sample; three respondents with a high school diploma or a GED, representing 2.9% of the sample; 38 representatives who reported some college, representing 36.2% of the respondents; and 49 individuals with an undergraduate degree, representing 46.7% of the sample. There were no responses from the participants whose educational level was other/professional. Table 7 exhibits the distribution of the sample by educational level.

Table 7

Participants' Educational Level

Educational Level	Frequency	Percentage
Doctoral	2	1.9%
Graduate	13	12.4%
High School/GED	3	2.9%
Some College	38	36.2%
Undergraduate	49	46.7%
Other/Professional	0	0%

Note. There were no responses from the participants whose educational level was other/professional.

Type of First Responder

The sample consisted of individuals who represented different types of first responders. The sample was comprised of 98 individuals who were employed as the law enforcement officers, representing 93.3% of the entire sample; two individuals who were employed as firefighters, representing 1.9% of the sample; and five persons who reported being employed as other, representing 4.8% of the sample. There were no responses from the individuals employed as EMTs or paramedics. Table 8 demonstrates the distribution of the sample by the type of first responder.

Table 8

Type of First Responder

Type of First Responder	Frequency	Percentage
Law Enforcement	98	93.3%
Firefighter	2	1.9%
Other	5	4.8%
EMT	0	0%

Note. There were no responses from EMTs or paramedics.

Employment Status

In this study, the sample was comprised of one person who was employed as a contractor, representing 1.0% of the sample; 102 individuals who were employed full time, representing 97.1% of the entire sample; and two respondents who were retired, representing 1.9% of the sample. There were no respondents who were employed part time, volunteer/reserve, and other. Table 9 illustrates the distribution of the sample by the employment status.

Table 9

Participants' Employment Status

Employment Status	Frequency	Percentage
Contract	1	1.0%
Full Time	102	97.1%
Retired	2	1.9%
Part Time	0	0%
Other	0	0%
Volunteer/Reserve	0	0%

Note. There were no respondents who were employed part time, volunteer/reserve, and other.

U.S. Region of Service

The sample included the individuals from a variety of different US regions. The sample was made up of 78 individuals who served in the Southwest of the United States, representing 74.3% of the entire sample; three persons who served in the Midwest area of the United States, representing 2.9% of the sample; 11 respondents who served in the Southeast of the United States, representing 10.5% of the sample; and lastly, 13 individuals who served in the West area of the United States, representing 12.4% of the sample. There were no respondents who resided in the Northeast and other US territories. Table 10 shows the distribution of the responses by the US region of service.

Table 10

Participants' Region of Service

U.S. region of service	Frequency	Percentage
Southwest	78	74.3%
Midwest	3	2.9%
Southeast	11	10.5%
West	13	12.4%
Northeast	0	0%
Other US Territory	0	0%

Note. There were no respondents who resided in the northeast and other US territories.

Community of Service

In this study, the sample included respondents from variety of communities. There were seven persons who served in rural communities, representing 6.7% of the sample; 24 individuals who served in suburban communities, representing 22.9% of the sample; and 74 respondents who served in urban communities, representing 70.5% of the entire sample. Table 11 shows the distribution of the sample by the community of service.

Table 11

Participants' Community of Service

Community of service	Frequency	Percentage
Rural	7	6.7%
Suburban	24	22.9%
Urban	74	70.5%

Inferential Statistics for the Variables

The data for this study were collected by implementing an online survey that was comprised of multiple assessment tools. The variable PTSD was measured by the SPRINT measure that consists of eight items (Kim et al., 2008; Leiva-Bianchi & Gallardo, 2013; Norris et al., 2008). The variable anxiety was measured by the GAD-7 survey that consists of seven items (Jordan et al., 2017; Kertz et al., 2013). The three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) were examined by the three subscales of the MBI scale. The MBI emotional exhaustion subscale contains nine questions, the MBI depersonalization subscale contains five, and the MBI personal achievement subscale contains eight (Maslach & Jackson, 1981; Maslach & Leiter, 2016; Pérez-Mármol & Brown, 2019). Lastly, the variable of life satisfaction was evaluated by the SWLS assessment that includes five questions (Diener et al., 1985; Medvedev & Landhuis, 2018; Tas & Iskender, 2018). All four instruments that were utilized in this study are Likert-type scales.

Table 12 demonstrates the descriptive statistics for all variables in this study. The scores for the variables obtained from each scale were measured by adding the items of each scale together. The independent variable PTSD had a range of scores from a minimum 0 to a maximum 24 with a mean score of 10.59 and a standard deviation 6.421, indicating that respondents had a mild level of PTSD. The independent variable anxiety had a range of scores from a minimum 0 to a maximum 16 with a mean score of 7.24 and a standard deviation 5.026, indicating that respondents had a mild level of anxiety. The independent variable MBI emotional exhaustion had a range of values from a minimum 0 to a maximum 42 with a mean score of 22.19 and a standard deviation 13.424, indicating that respondents had a moderate level of emotional exhaustion. The independent variable MBI depersonalization had a range of values from a minimum 0 to a maximum 25 with a mean score of 10.66 and a standard deviation 7.313, indicating that respondents had a high level of depersonalization. The independent variable MBI personal achievement had a range of values from a minimum 7 to a maximum 48 with a mean score of 23.33 and a standard deviation 10.820, indicating that respondents had a high level of personal achievement. The dependent variable life satisfaction had a range of values from a minimum 12 to a maximum 34 with a mean score of 21.99 and a standard deviation 6.411, indicating that respondents were slightly satisfied with their lives.

Table 12

Descriptive Statistics of Study Variables

Variable	N	Minimum	Maximum	Mean	Std. Deviation
PTSD	105	0	24	10.59	6.421
Anxiety	105	0	16	7.24	5.026
MBI emotional exhaustion	105	0	42	22.19	13.424
MBI depersonalization	105	0	25	10.66	7.313
MBI personal achievement	105	7	48	23.33	10.820
Life Satisfaction	105	12	34	21.99	6.411

Normality of Distributions

The normality of distributions was examined by implementing skewness and kurtosis statistical tests. Tests for normality of distribution are essential in research studies as they measure whether the variables fall within a normal distribution curve (Leedy & Ormrod, 2016). In research, skewness statistical test measures the symmetry of the distribution curve, while the kurtosis statistical test measures whether the scores are either flat or follow the normal bell curve (Leedy & Ormrod, 2016). A standard distribution usually has a skewness of a zero, while a standard kurtosis has a value of a three (see Laerd Statistics, 2021).

Table 13 demonstrates the skewness and kurtosis of the variables. The data collected for independent variable PTSD was normally distributed, with skewness of -

0.088 (*SE* = 0.236) and kurtosis of -0.616 (*SE* = 0.467). The data collected for independent variable anxiety was also normally distributed, with skewness of 0.072 (*SE* = 0.236) and kurtosis of -0.443 (*SE* = 0.467). MBI emotional exhaustion was normally distributed as well, with skewness of -0.102 (*SE* = 0.236) and kurtosis of -1.507 (*SE* = 0.467). MBI depersonalization was also normally distributed, with skewness of 0.064 (*SE* = 0.236) and kurtosis of -1.311 (*SE* = 0.467). MBI personal achievement was moderately skewed to the left, with a skewness of 0.682 (*SE* = 0.236) and kurtosis -0.511 (*SE* = 0.467). The data collected for dependent variable life satisfaction was normally distributed, with skewness of 0.273 (*SE* = 0.236) and kurtosis of -1.141 (*SE* = 0.467).

Table 13

Skewness and Kurtosis of Variables

Variable	Skewness	Std. Error of Skewness	Kurtosis	Std. Error of Kurtosis
PTSD	-.088	.236	-.616	.467
Anxiety	.072	.236	-.443	.467
MBI emotional exhaustion	-.102	.236	-1.507	.467
MBI depersonalization	.064	.236	-1.311	.467
MBI personal achievement	.682	.236	-.511	.467
Life Satisfaction	.273	.236	-1.141	.467

Data Analysis Procedures

To analyze the data obtained from the online survey, IBM SPSS Statistics for MacOS Version 25 were utilized. Data screening and data cleaning were performed to examine the data for outliers and missing values. The descriptive statistics were used to explore and summarize the data. The frequency, mean, standard deviations, and range were included to describe the study variables and demographics. Analysis of the reliability of the survey data was performed. The test of assumptions was carried out, and inferential statistical procedures were executed to analyze the data.

Data Screening and Cleaning

The descriptive statistics did not identify any missing values in the raw data. All responses were used in the analysis. After IBM SPSS Statistics for MacOS Version 25 was utilized and raw data were analyzed, one outlier was identified and removed (See Table 14) from the dataset. In order to identify the outlier, the researcher conducted casewise diagnostics and residual statistics that included calculated studentized deleted residuals, leverage values, and Cook's Distance. As the identified outlier was removed, there was no impact on the study results. No other errors were found in the dataset.

Table 14

Casewise Diagnostics

Case Number	Std. Residual	SWLS Score	Predicted Value	Residual
27	4.332	34	16.19	17.814

Note. Dependent Variable: SWLS Score (Life satisfaction).

Validity and Reliability

The SPRINT, the GAD-7, the MBI, and SWLS were selected for data collection in this study due to established validity and reliability for measuring their constructs. The SPRINT has been assessed and confirmed by multiple studies (Esnaola, et al., 2017). The psychometric properties of the GAD-7 measure have been examined and validated by researchers in the field (S. U. Johnson et al., 2019; Jordan et al., 2017; Kertz et al., 2013; Spitzer et al., 2006; Tiirikainen et al., 2018). The MBI has been validated and proven to be one of the most reliable tools for measurement of burnout in the world (Bakker et al., 2002; Bria et al., 2014; Nguyen et al., 2018; Pérez-Mármol & Brown, 2019; Poghosyan et al., 2009). The psychometric properties of the SWLS have been examined and validated in several studies (Diener et al., 1985; Jovanovic, 2016; López-Ortega et al., 2016; Lopez-Ramos et al., 2018; Pavot et al., 1991; Pavot & Diener, 1993). To examine reliability of the collected data in the SPRINT, GAD-7, the subscales of the MBI, and SWLS, the Cronbach's alpha analysis was conducted in IBM SPSS Statistics for MacOS Version 25 for each scale and subscale. The purpose of Cronbach's alpha analysis is to measure internal consistency of the assessment instrument to assure that instrument measures what it intends to measure (see Laerd Statistics, 2021).

Table 15 demonstrates the Cronbach's alpha analysis summary. This table exhibits the scale, the Cronbach's alpha statistical output, the Cronbach's alpha based on standardized items, and number of items. The reliability analysis indicates that the SPRINT and the GAD-7 scales show redundancy among items with the Cronbach's alpha 1.000. Both scales are highly inter related and were designed for diagnostic use.

According to Sijtsma (2009) and Taber (2018) a high value of Cronbach's alpha indicates that every item in the assessment tool was measuring similar or same items. The SPRINT was designed to assess and diagnose PTSD and it was discovered that diagnostic accuracy of the SPRINT was at 96% (Connor & Davidson, 2001). The GAD-7 was designed to assess and diagnose anxiety and it had a high correlation with other instruments that measure anxiety such as the Beck Anxiety Inventory ($r = 0.69$, $p < 0.01$), the Symptom Check List 90-R ($r = 0.76$, $p < 0.01$), and the Global Severity Index ($r = 0.72$, $p < 0.01$) (S. U. Johnson et al., 2019). The GAD-7 scale has good internal consistency and convergent validity with anxiety, stress, and worry (S. U. Johnson et al., 2019; Kertz et al., 2013; Spitzer et al., 2006; Tiirikainen et al., 2018). The MBI three subscales and the SWLS scale demonstrated to have a high level of internal reliability, as determined by a Cronbach's alpha of 0.8 and above.

Table 15

Cronbach's Alpha Statistics

Scale	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
SPRINT	1.000	1.000	8
GAD-7	1.000	1.000	7
MBI emotional exhaustion	.954	.954	9
MBI depersonalization	.889	.896	5
MBI personal achievement	.925	.925	8
Satisfaction With Life Scale	.919	.917	5

Tests of Assumptions

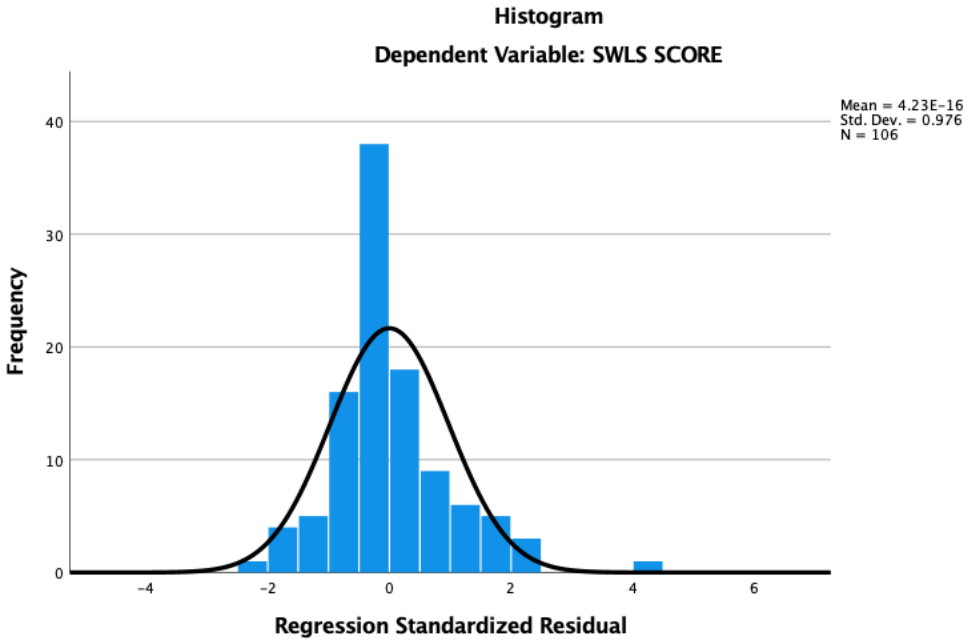
To analyze the data in this study a multiple regression analysis was employed. Multiple regression analysis requires assumptions being met. These assumptions include the presence of a linear relationship between the independent and the dependent variables, normal distribution of the residuals, and lack of high correlation between the independent variables (see Laerd Statistics, 2021). Multiple regression analysis also requires removal of outliers. In this study, one outlier was detected and removed from the dataset. Multiple regression analysis uses the following determinants to analyze the data: absence of homoscedasticity and multicollinearity, linearity, normality of residuals, and independence of observations.

Normality of Residuals

There are two ways to test normality of residuals. One way is to generate the histogram of the regression standardized residuals in IBM SPSS Statistics software for MacOS Version 25. Figure 1 displays the histogram that shows normal distribution of the residuals based on visual inspection.

Figure 1

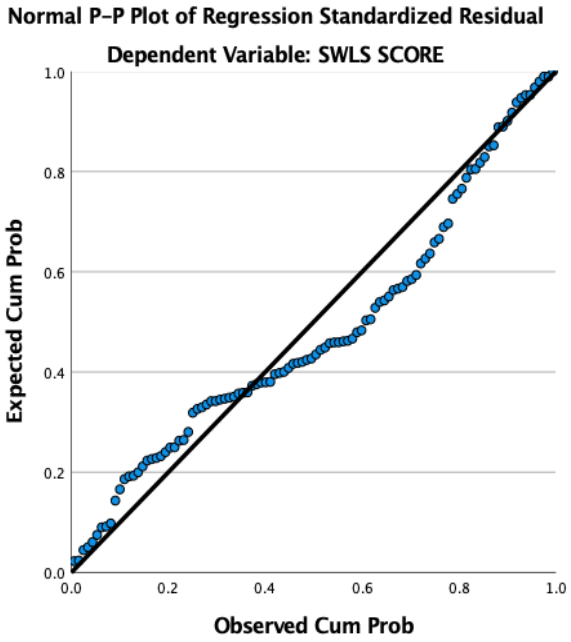
Histogram of Regression Standardized Residual



Another way to test normality of residuals is to generate a P-P Plot of regression in IBM SPSS Statistics software for MacOS Version 25 to confirm the findings. Figure 2 displays the P-P Plot that shows normal distribution of the residuals based on visual inspection. Both methods of examination confirmed the normality of residuals.

Figure 2

Normal P-P Plot of Regression Standardized Residual



Linearity

In quantitative correlational research, the linearity refers to the function when statistical results (scatterplots) follow a straight line on a graph, while the non-linearity is the deviation from a straight line (see Laerd Statistics, 2021). After all data were analyzed, the IBM SPSS Statistical software produced multiple scatterplots that included variable data points. When the residuals follow a straight line and proportional distribution, the linearity is likely to be confirmed but when the residuals are scattered unevenly in a form of a curve, non-linearity more likely to occur (see Laerd Statistics, 2021). The linearity of the distributions was evaluated by visual inspection of the regression scatterplots produced by the IBM SPSS Statistics software for MacOS Version

25 (see Appendix D). Each scatterplot intended to demonstrate the relationship between each independent variable with the dependent variable. The visual inspection determined that all scatterplots followed a straight line confirming the linearity. No non-linear curved scatterplots were found in the dataset.

Independence of Observations

To check for the independence of observation, the Durbin-Watson statistic in the IBM SPSS Statistics software for MacOS Version 25 was employed. A standard value of Durbin-Watson statistic is approximately 2.0, which indicates absence of correlation between residuals (see Laerd Statistics, 2021). Upon completion of the analysis, a Durbin-Watson statistical value returned 1.558, which indicates an independence of observations. Table 16 exhibits the model summary and a Durbin-Watson statistical value.

Table 16

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.786	.617	.598	4.112	1.558

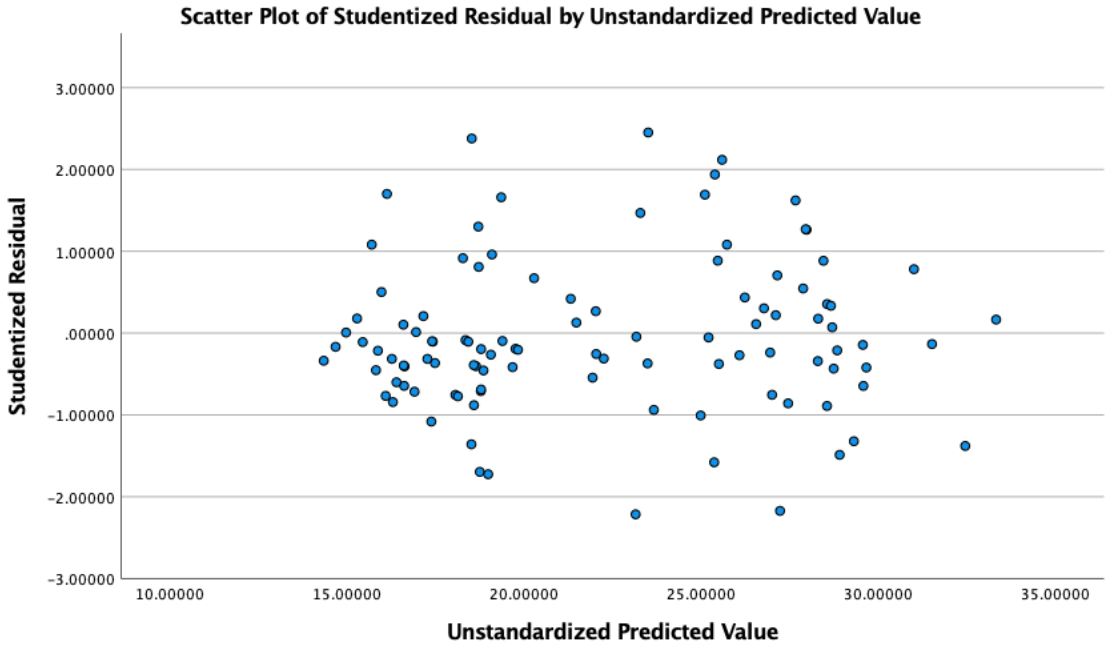
Homoscedasticity

After the linearity was established, the next step was to examine the homoscedasticity. Multiple regression analysis requires the assumption of homoscedasticity. Homoscedasticity is a condition when all data scattered proportionally in the same manner, and when the standard deviations are equal for all values (see Laerd

Statistics, 2021). Figure 3 demonstrates the scatterplot of the studentized residuals against the unstandardized predicted values produced by the IBM SPSS Statistics software for MacOS Version 25. As shown in Figure 3, all residuals are scattered along the line in the same manner, indicating a normal distribution of the residuals of the regression line. A normal distribution of the residuals indicates the assumption of homoscedasticity was met in this case.

Figure 3

Scatter Plot of Studentized Residuals and Unstandardized Predicted Values



Multicollinearity

The last test of assumption is multicollinearity assumption. Multicollinearity takes place when two or more independent variables correlate with one another. Multicollinearity can create a problem as it can skew the data results (see Laerd Statistics,

2021). Table 17 illustrates the tolerance and the variance inflation factor (VIF) of collinearity statistics obtained from the IBM SPSS Statistics for MacOS Version 25. The absence of multicollinearity can be confirmed when the tolerance value is greater than 0.1 but does not exceed 0.8 (see Laerd Statistics, 2021). The standard VIF must range between 1.00 and 5.00 to confirm the absence of multicollinearity. All data met criteria for absence of multicollinearity in this study.

Table 17

Collinearity Statistics

Variable	Tolerance	VIF
PTSD	.724	1.381
Anxiety	.710	1.408
MBI emotional exhaustion	.305	3.282
MBI depersonalization	.317	3.150
MBI personal achievement	.762	1.312

Alignment

All research questions aligned well with the hypotheses outlined in this study. Research question 1 pertained to the relationship between PTSD and life satisfaction of first responders while controlling for anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement. Research question 1 led to the development of a hypothesis that posited that there is a statistically significant relationship existed between the independent variable PTSD and the dependent variable

life satisfaction. It also led to the development of the null hypothesis that postulated that there was no statistically significant relationship between PTSD and life satisfaction. Research questions 2 through 5 followed the same format as the research question 1, leading to the development of the hypothesis that postulated that a statistically significant relationship existed between each independent variable (anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) on the dependent variable life satisfaction. The null hypotheses were also developed for research questions 2 through 5 that stated that there was no statistically significant relationship between each independent variable and the dependent variable. To test all hypotheses in this study, the multiple linear regression was employed to examine correlational relationships between the variables.

Results

To analyze the data for this quantitative correlational study the software IBM SPSS Statistics for MacOS Version 25 was employed. Inferential statistics were applied to test all hypotheses for the research questions. The results obtained after data analysis was performed, were used to answer five research questions in this study. Hypotheses were tested using the standard multiple linear regression and all assumptions in this quantitative correlational study were met for the use of multiple regression.

Research Question 1

RQ1: Is there a statistically significant relationship between PTSD and life satisfaction of first responders while controlling for anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement?

H_o1: There is no statistically significant relationship between PTSD and life satisfaction of first responders while controlling for anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement.

H_a1: There is a statistically significant relationship between PTSD and life satisfaction of first responders while controlling for anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement.

To answer research question 1, alternative hypothesis and corresponding null hypothesis were tested using multiple linear regression. The independent variable was PTSD, while the dependent variable was life satisfaction. As shown in Table 18, the Sig. (1-tailed) value is .000, which means that $p < .0005$ ($p < .05$) indicating a statistically significant result. As $p < .0005$ satisfies $p < .05$, a statistically significant result can be confirmed (see Laerd Statistics, 2021). Tables 19-21 validate the significance. Therefore, the alternative hypothesis was accepted, and the null hypothesis was rejected.

Table 18

Correlation of PTSD and Life Satisfaction

PTSD/SPRINT Score		
Pearson Correlation	Life satisfaction	-.355
Sig. (1-tailed)	Life satisfaction	.000
N		105

a. Significance is at the $p < .05$ (1-tailed).

b. Independent variable: Life satisfaction.

c. Dependent variable: (Constant) PTSD.

Table 19

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2726.710	5	545.342	32.247	.000
	Residual	1691.148	100	16.911		
	Total	4417.858	105			

Note. Significance is at the $p < .05$.

Table 20

Regression Coefficients and Standard Errors

Variable	B	SE	Beta	t	Sig.
(Constant)	23.073	1.687		13.673	.000*
PTSD	.016	.074	.016	.220	.827
Anxiety	-.095	.094	-.075	-1.017	.312
MBI emotional exhaustion	-.110	.053	-.230	-2.052	.043
MBI depersonalization	-.277	.096	-.317	-2.887	.005*
MBI personal achievement	.214	.043	.356	5.026	.000*

Note. * $p < .05$; *B* = unstandardized regression coefficient; SE = standard error of the unstandardized coefficient; Beta = standardized coefficient.

a. Dependent variable: SWLS Score (Life satisfaction).

Table 21

Contrast Results (K Matrix)

Contrast			Dependent Variable Life Satisfaction
L1	Contrast Estimate		18.981
	Hypothesized Value		0
	Difference (Estimate – Hypothesized)		18.981
	Std. Error		.589
	Sig.		.000
	95% Confidence Interval for Difference	Lower Bound	17.812
		Upper Bound	20.149

a. Based on the user-specific contrast coefficients (L') matrix number 1.

Research Question 2

RQ2: Is there a statistically significant relationship between anxiety and life satisfaction of first responders while controlling for PTSD, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement?

H_o2: There is no statistically significant relationship between anxiety and life satisfaction of first responders while controlling for PTSD, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement.

H_a2: There is a statistically significant relationship between anxiety and life satisfaction of first responders while controlling for PTSD, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement.

To answer research question 2, alternative hypothesis and corresponding null hypothesis were tested using multiple regression. The independent variable was anxiety, while the dependent variable was life satisfaction. As demonstrated in Table 22, the Sig. (1-tailed) value is .000, which means that $p < .0005$ ($p < .05$) indicating a statistically significant result. As $p < .0005$ satisfies $p < .05$, a statistically significant result can be confirmed (see Laerd Statistics, 2021). Therefore, the alternative hypothesis was accepted, and the null hypothesis was rejected.

Table 22

Correlation of Anxiety and Life Satisfaction

Anxiety/GAD-7 Score		
Pearson Correlation	Life satisfaction	-.419
Sig. (1-tailed)	Life satisfaction	.000
N		105

Note. Significance is at the $p < .05$

Research Question 3

RQ3: Is there a statistically significant relationship between MBI emotional exhaustion and life satisfaction of first responders while controlling for PTSD, anxiety, MBI depersonalization, and MBI personal achievement?

H_o3: There is no statistically significant relationship between MBI emotional exhaustion and life satisfaction of first responders while controlling for PTSD, anxiety, MBI depersonalization, and MBI personal achievement.

H_a3: There is a statistically significant relationship between MBI emotional exhaustion and life satisfaction of first responders while controlling for PTSD, anxiety, MBI depersonalization, and MBI personal achievement.

To address research question 3, alternative hypothesis and corresponding null hypothesis were tested using multiple regression analysis. The independent variable was MBI emotional exhaustion, while the dependent variable was life satisfaction. As presented in Table 23, the Sig. (1-tailed) value is .000, which means that $p < .0005$ ($p < .05$) indicating a statistically significant outcome. As $p < .0005$ satisfies $p < .05$, a statistically significant result can be confirmed (see Laerd Statistics, 2021). Therefore, the alternative hypothesis was accepted, and the null hypothesis was rejected.

Table 23

Correlation of MBI Emotional Exhaustion and Life Satisfaction

MBI emotional exhaustion/MBI Emotional Exhaustion Subscale Score		
Pearson Correlation	Life satisfaction	-.674
Sig. (1-tailed)	Life satisfaction	.000
N		105

Note. Significance is at the $p < .05$

Research Question 4

RQ4: Is there a statistically significant relationship between MBI depersonalization and life satisfaction of first responders while controlling for PTSD, anxiety, MBI emotional exhaustion, and MBI personal achievement?

H_o4: There is no statistically significant relationship between MBI depersonalization and life satisfaction of first responders while controlling for PTSD, anxiety, MBI emotional exhaustion, and MBI personal achievement.

H_a4: There is a statistically significant relationship between MBI depersonalization and life satisfaction of first responders while controlling for PTSD, anxiety, MBI emotional exhaustion, and MBI personal achievement.

To address research question 4, alternative hypothesis and corresponding null hypothesis were tested using multiple linear regression. The independent variable was MBI depersonalization, while the dependent variable was life satisfaction. As presented in Table 24, the Sig. (1-tailed) value is .000, which implicates that $p < .0005$ ($p < .05$) indicating a statistically significant result. As $p < .0005$ satisfies $p < .05$, a statistically significant result can be verified and confirmed (see Laerd Statistics, 2021). Therefore, the alternative hypothesis was accepted, and the null hypothesis was rejected.

Table 24

Correlation of MBI Depersonalization and Life Satisfaction

MBI depersonalization/MBI Depersonalization Subscale Score		
Pearson Correlation	Life satisfaction	-.688
Sig. (1-tailed)	Life satisfaction	.000
N		105

Note. Significance is at the $p < .05$

Research Question 5

RQ5: Is there a statistically significant relationship between MBI personal achievement and life satisfaction of first responders while controlling for PTSD, anxiety, MBI emotional exhaustion, and MBI depersonalization?

H_o5: There is no statistically significant relationship between MBI personal achievement and life satisfaction of first responders while controlling for PTSD, anxiety, MBI emotional exhaustion, and MBI depersonalization.

H_a5: There is a statistically significant relationship between MBI personal achievement and life satisfaction of first responders while controlling for PTSD, anxiety, MBI emotional exhaustion, and MBI depersonalization.

To answer research question 5, alternative hypothesis and corresponding null hypothesis were tested using multiple regression analysis. The independent variable was MBI personal achievement, while the dependent variable was life satisfaction. As demonstrated in Table 25, the Sig. (1-tailed) value is .000, which implicates that $p <$ .0005 ($p < .05$) indicating a statistically significant result. As $p < .0005$ satisfies $p < .05$, a

statistically significant result can be verified and confirmed (see Laerd Statistics, 2021). Therefore, the alternative hypothesis was accepted, and the null hypothesis was rejected.

Table 25

Correlation of MBI Personal Achievement and Life Satisfaction

MBI personal achievement/MBI Personal Achievement Subscale Score		
Pearson Correlation	Life satisfaction	.613
Sig. (1-tailed)	Life satisfaction	.000
N		105

Note. Significance is at the $p < .05$

Summary

Chapter 4 discussed the procedures and the findings of the data analysis. This study examined if a statistically significant relationship existed between PTSD, anxiety, the three dimensions of burnout (MBI emotional MBI exhaustion, MBI depersonalization, and personal achievement) on life satisfaction of first responders who responded to a mass shooting. A quantitative evaluation with a correlational design and multiple linear regression analysis were employed to determine if a statistically significant relationship existed between the five independent variables and one dependent variable. The data were gathered from the target population that contained approximately 10,000 of first responders. The online survey was utilized and consisted of demographic information, the SPRINT, the GAD-7, the three subscales of the MBI, and the SWLS. The sample size was 106 and after removing one outlier, the final sample size was 105.

The descriptive findings indicated that most respondents were males between ages of 30 to 59. However, the sample size was large enough to allow the results to be generalized to both genders. The descriptive findings discovered that most respondents were of a Caucasian race and a Hispanic ethnicity, which indicates that other racial and ethnic groups were underrepresented in this study. It was further discovered that a large number of participants were married indicating that the individuals with other types of marital status (i.e. single, separated, divorced, etc.) were underrepresented, creating a potential limitation of the study. The data also indicated that there was a significantly large population of individuals with an undergraduate degree and some college, and most participants were employed full-time. This is a limitation within this study, as persons with higher levels of education and other types of employment were underrepresented here. Additionally, a limitation exists with regards to the first responder status, as most of the respondents identified as law enforcement officers, who reside in the Southwest of the United States, serving in urban communities. This indicates that other types of first responders were underrepresented, that areas of service, and communities of service were also underrepresented in this study.

The results of the correlational analysis supported statistically significant relationship between each independent variable and the dependent variable. The results of the analyses rejected the null hypotheses for all five research questions and accepted the alternative hypotheses for all five research questions. The data analysis in this study was limited to the examination of correlational and predictive relationships. The independent

variables in this study were not manipulated, therefore, the study results could not conclude causal relationships.

Chapter 5 provides a summary of the study. Chapter 5 covers the findings and conclusions of the study. Explanation of the implications for social change, theoretical implications, practical implications, and future implications presented in this chapter. Chapter 5 further serves to discuss strengths and limitations of this study. Lastly, it provides recommendations for future research and future practice.

Chapter 5: Discussion, Conclusions, and Recommendations

The purpose of this quantitative correlational study was to examine whether a statistically significant relationship existed between PTSD, anxiety, and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) and life satisfaction of first responders who responded to a mass shooting. Although prior research demonstrated the relationships between each independent variable and life satisfaction, further research was needed on how multiple variables affect life satisfaction among other occupational groups, such as first responders (Sabarwal & Sharma, 2019; Wilson, 2015). It was not known whether or to what extent a statistically significant relationship existed between PTSD, anxiety, and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) and life satisfaction of first responders who responded to a mass shooting. To address this gap, I formulated a problem statement to examine whether or to what extent a mass shooting impacted life satisfaction of first responders (Cenk, 2018; Sabarwal & Sharma, 2019; Schnurr et al., 2009). I sought to fill the gap by examining the possible correlational relationship between the variables related to the effects of mass shootings and life satisfaction of first responders.

Chapter 5 provides a summary of the study. This chapter covers the findings and conclusions of the study. Implications for social change, theoretical implications, practical implications, and future implications are presented in this chapter. Chapter 5 also addresses the strengths and limitations of this study. Lastly, it provides recommendations for future research and future practice.

Interpretation of the Findings

In this quantitative correlational study, I sought to add to the existing body of literature on life satisfaction by examining the relationships between PTSD, anxiety, and the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) and life satisfaction of first responders who responded to a mass shooting during their career. The final sample included 105 first responders ages 18 to 69, with most respondents ranging between the ages of 30 and 59. There were two respondents between the ages of 18 and 29 (1.9%), 43 respondents between the ages of 30 and 39 (41.0%), 32 respondents between the ages of 40 and 49 (30.5%), 23 respondents between the ages of 50 and 59 (21.9%), and five participants between the ages of 60 and 69 (4.8%). There were no responses for age group 70 and above. The sample comprised 75 participants identifying as male (71.4%) and 30 participants identifying as female (28.6%) There were no respondents who identified as other. The sample comprised 12 individuals identifying as African American (11.4%), two respondents identifying as American Indian or Alaskan Native (1.9%), three respondents who identified as Asian (2.9%), 78 individuals who identified as White (74.3%), and 10 persons who identified as other (9.5%). There were no respondents who identified as Native Hawaiian or Pacific Islander. The sample consisted of 68 respondents identifying as Hispanic (64.8%) and 37 respondents identifying as non-Hispanic (35.2%). All respondents disclosed their ethnicity.

The sample comprised individuals with various marital status. The sample consisted of 15 respondents who were divorced (14.3%), 74 individuals who reported

being married (70.5%), one person who reported being separated (1.0%), and 15 individuals who were single (14.3%). There were no responses from participants whose marital status was widowed or other. There were two persons with a doctoral degree (1.9%), 13 individuals with a graduate degree (12.4%), three respondents with a high school diploma or GED (2.9%), 38 representatives who reported some college (36.2%), and 49 individuals with an undergraduate degree (46.7%). There were no responses from participants whose educational level was other/professional. The sample comprised 98 individuals who were employed as law enforcement officers (93.3%), two individuals who were employed as firefighters (1.9%), and five persons who reported being employed as other (4.8%). There were no responses from individuals employed as EMTs or paramedics. The sample comprised one person who was employed as a contractor (1.0%), 102 individuals who were employed full-time (97.1%), and two respondents who were retired (1.9%). There were no respondents who identified as employed part-time, volunteer/reserve, or other. The sample was made up of 78 individuals who served in the Southwest United States (74.3%), three persons who served in the Midwest United States (2.9%), 11 respondents who served in the Southeast United States (10.5%), and 13 individuals who served in the West United States (12.4%). There were no respondents who resided in the Northeast or other U.S. territories. There were seven persons who served in rural communities (6.7%), 24 individuals who served in suburban communities (22.9%), and 74 respondents who served in urban communities (70.5%).

The data for this study were collected by implementing an online survey that comprised multiple assessment tools. The variable PTSD was measured by the SPRINT

measure that consists of eight items (see Kim et al., 2008; Leiva-Bianchi & Gallardo, 2013; Norris et al., 2008). The independent variable PTSD had a range of scores from a minimum 0 to a maximum 24 with a mean score of 10.59 (*SD* = 6.421), indicating that respondents had a mild level of PTSD. The variable anxiety was measured by the GAD-7 survey that consists of seven items (see Jordan et al., 2017; Kertz et al., 2013). The independent variable anxiety had a range of scores from a minimum 0 to a maximum 16 with a mean score of 7.24 (*SD* = 5.026), indicating that respondents had a mild level of anxiety. The three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) were examined by the three subscales of the MBI scale. The MBI emotional exhaustion subscale contains nine questions, the MBI depersonalization subscale contains five, and the MBI personal achievement subscale contains eight (Maslach & Jackson, 1981; Maslach & Leiter, 2016; Pérez-Mármol & Brown, 2019). The independent variable MBI emotional exhaustion had a range of values from a minimum 0 to a maximum 42 with a mean score of 22.19 (*SD* = 13.424), indicating that respondents had a moderate level of emotional exhaustion. The independent variable MBI depersonalization had a range of values from a minimum 0 to a maximum 25 with a mean score of 10.66 (*SD* = 7.313), indicating that respondents had a high level of depersonalization. The independent variable MBI personal achievement had a range of values from a minimum 7 to a maximum 48 with a mean score of 23.33 (*SD* = 10.820), indicating that respondents had a high level of personal achievement. Lastly, the variable of life satisfaction was evaluated by the SWLS assessment that includes five questions (see Diener et al., 1985; Medvedev & Landhuis, 2018; Tas &

Iskender, 2018). The dependent variable life satisfaction had a range of values from a minimum 12 to a maximum 34 with a mean score of 21.99 (SD = 6.411), indicating that respondents were slightly satisfied with their lives. Four different assessments were selected due to the fact that there was no single instrument that could measure all of the variables. All four instruments that were used in this study are Likert-type scales.

This quantitative correlational study was guided by five research questions and hypotheses to address the problem statement. Each research question addressed the predictive relationship between the independent variable and the dependent variable. Research Question 1 addressed the possible correlational relationship between PTSD and life satisfaction. Research Question 2 addressed the possible correlational relationship between anxiety and life satisfaction. Research Question 3 addressed the possible correlational relationship between MBI emotional exhaustion and life satisfaction. Research Question 4 addressed the possible correlational relationship between MBI depersonalization and life satisfaction. Research Question 5 addressed the possible correlational relationship between MBI personal achievement and life satisfaction. The multiple linear regression model was used to address all five research questions. The aggregate data obtained from the multiple linear regression model were used to support the correlational data. The inferential statistics were used to test the hypotheses. Lastly, the conclusions of data analysis answered all five research questions.

Research Question 1

Research Question 1 addressed the possible correlational relationship between PTSD and life satisfaction of first responders who responded to a mass shooting during

their career. A multiple linear regression was employed to answer the first research question. The result of the multiple regression demonstrated a statistically significant predictive relationship between PTSD and life satisfaction. The scores for the variables obtained from the SPRINT scale were measured by adding the items. The independent variable PTSD had a range of scores from a minimum 0 to a maximum 24 with a mean score of 10.59 ($SD = 6.421$), indicating that respondents had a mild level of PTSD due to a mass shooting. The Sig. (1-tailed) value was .000 ($p < .05$) indicating a statistically significant result because $p < .0005$ satisfied $p < .05$ (see Laerd Statistics, 2021). The null hypothesis for Research Question 1 was rejected while the alternative hypothesis was accepted because the relationship between the independent variable PTSD and the dependent variable life satisfaction was confirmed. The findings supported those from prior research on how PTSD impacts life satisfaction (see Berle et al., 2018; Karatzias et al., 2013; Schnurr et al., 2009).

Research Question 2

Research Question 2 addressed the possible correlation between anxiety and life satisfaction of first responders. A multiple regression approach was implemented to answer the second research question. The result of the multiple regression approach demonstrated a statistically significant relationship between anxiety and life satisfaction. The scores for the variables obtained from the GAD-7 instrument were measured by adding the items. The independent variable anxiety had a range of scores from a minimum 0 to a maximum 16 with a mean score of 7.24 ($SD = 5.026$), indicating that respondents had a mild level of anxiety due to a mass shooting. The Sig. (1-tailed) value

was .000 ($p < .05$) indicating a statistically significant result because $p < .0005$ satisfied $p < .05$ (see Laerd Statistics, 2021). The null hypothesis for Research Question 2 was rejected while the alternative hypothesis was accepted because the relationship between the independent variable anxiety and the dependent variable life satisfaction was validated. This discovery supported prior research regarding the impact of anxiety on life satisfaction (see Bastos Machado de Resende et al., 2020; Grills-Taquechel et al., 2011).

Research Question 3

Research Question 3 addressed the possible relationship between MBI emotional exhaustion and life satisfaction of first responders who responded to a mass shooting. A multiple regression model was implemented to answer the third research question. The result of the multiple regression model confirmed a statistically significant relationship between MBI emotional exhaustion and life satisfaction. The scores for the variables obtained from the MBI emotional exhaustion subscale were measured by adding the items. The independent variable MBI emotional exhaustion had a range of values from a minimum 0 to a maximum 42 with a mean score of 22.19 ($SD = 13.424$), indicating that respondents had a moderate level of emotional exhaustion due to a mass shooting. The Sig. (1-tailed) value was .000 ($p < .05$) indicating a statistically significant outcome because $p < .0005$ satisfied $p < .05$ (see Laerd Statistics, 2021). The null hypothesis for Research Question 3 was rejected while the alternative hypothesis was accepted because the relationship between MBI emotional exhaustion and life satisfaction was verified. This conclusion supported prior research regarding the impact of burnout (MBI

emotional exhaustion) on life satisfaction of first responders (Lala et al., 2016; Moukarzel et al., 2019).

Research Question 4

Research Question 4 addressed the possible connection between the MBI depersonalization variable and life satisfaction of first responders. A multiple linear regression was executed to answer the fourth research question. The result of the multiple linear regression confirmed a statistically significant relationship between MBI depersonalization and life satisfaction. The scores for the variables obtained from the MBI depersonalization subscale were measured by adding the items. The independent variable MBI depersonalization had a range of values from a minimum 0 to a maximum 25 with a mean score of 10.66 ($SD = 7.313$), indicating that respondents had a high level of depersonalization due to a mass shooting. The Sig. (1-tailed) value was .000 ($p < .05$) indicating a statistically significant result because $p < .0005$ satisfied $p < .05$ (see Laerd Statistics, 2021). The null hypothesis for Research Question 4 was rejected while the alternative hypothesis was accepted because the connection between the independent variable MBI depersonalization and the dependent variable life satisfaction was confirmed. This conclusion supported prior research pertaining to the effects of burnout (MBI depersonalization) on life satisfaction of first responders (Lala et al., 2016; Moukarzel et al., 2019).

Research Question 5

Research question 5 focused on establishing the link between the independent variable MBI personal achievement and predictor variable life satisfaction. A multiple

linear regression concept was utilized to answer the fifth research question in this quantitative study. The result of the multiple regression confirmed statistically significant relationship between the MBI personal achievement and life satisfaction. The scores for the variables obtained from the MBI personal achievement subscale were measured by adding the items all together. The independent variable MBI personal achievement had a range of values from a minimum 7 to a maximum 48 with a mean score of 23.33 (SD = 10.820), indicating that respondents had a high level of personal achievement. The dependent variable life satisfaction had a range of values from a minimum 12 to a maximum 34 with a mean score of 21.99 (SD = 6.411), indicating that respondents were slightly satisfied with their lives. The Sig. (1-tailed) value is .000 ($p < .05$) demonstrating a statistically significant outcome, as $p < .0005$ satisfies $p < .05$ (see Laerd Statistics, 2021). The null hypothesis for Research Question 5 was rejected, while the alternative hypothesis was accepted, as the connection between the independent variable MBI personal achievement and the dependent variable life satisfaction was validated. This outcome supported previous studies that focused on the influence of burnout (MBI personal accomplishment) on life satisfaction of first responders (Lala et al., 2016; Moukarzel et al., 2019).

Implications

This quantitative correlational research study sought to examine the effects of PTSD, anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement on life satisfaction of first responders. The results of data analysis revealed statistically significant relationships between the variables. The research findings

discovered implications for social change, theoretical, practical, and future implications concerning the topic of this study, life satisfaction. All implications that pertain to this study are covered in this section.

Implications for Positive Social Change

The results of this study provided greater insights regarding the contribution of mass shootings on the development of PTSD, anxiety, and burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement). This study explored the effect these factors have on life satisfaction of first responders through an objective frame. The target population for this research study included law enforcement officers (police officers, state troopers, federal agents, sheriff's deputies, constables, and school resource officers), paramedics, EMTs, and firefighters.

Research confirmed that first responders face difficult occupational challenges that can threaten their life, and can contribute to the development of different mental health conditions (Klimley et al., 2018; Wilson, 2015). The communities affected by mass shootings rely on an effective and efficient response from first responders (Beard et al., 2019). First responders are typically the first to arrive on the scene of mass shootings facing difficult and life threatening circumstances (Chopko et al., 2015). Because first responders are the first to deal with the affected population, the strongest most unfiltered reactions are immediately absorbed (Ellrich & Baier, 2015; Lanza et al., 2018). Therefore, first responders, by proxy, automatically assume immediate secondary trauma (Lewis-Schroeder et al., 2018).

It was confirmed that a statistically significant relationships exist between PTSD, anxiety, the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) on life satisfaction of first responders who responded to a mass shooting, indicating that all independent variables had a significant impact on life satisfaction. The findings of this study were able to fill an academic gap that existed in the literature on life satisfaction among first responders (Cenk, 2018; Sabarwal & Sharma, 2019; Schnurr et al., 2009). This study filled that gap by examining the correlational relationship between the effects of mass shootings on the life satisfaction of first responders.

The following findings of this quantitative correlational study have the ability to contribute to positive social change that would impact life satisfaction of first responders.

1. Target mental health stigma among first responders by implementing anti-stigma campaigns to ensure that first responders seek and receive the mental health assistance they need.
2. Ensure that all representatives of the management team support and promote mental health in the workplace.
3. Through training, assist the management team, and other staff members in developing the skills necessary to identify early signs and symptoms of mental health problems, and guide employees to receive the appropriate help they need.
4. Establish a network of mental health professionals, who understand the needs and culture of first responders.

5. Establish peer support network (in-house, local, and national) to assist first responders, both active and retired, and their families.
6. Promote critical incident stress management for first responders with a goal of decreasing stigma, and promoting mental health literacy in the workplace.

Theoretical Implications

This study was guided by four following theories: the cognitive model of PTSD, the emotion dysregulation model of anxiety, a multidimensional theory of burnout, and the hedonic treadmill model. Based on these theories, five research questions and hypotheses were formulated to examine life satisfaction of first responders. The cognitive model of PTSD explained and informed the independent variable PTSD. It suggested that the successful treatment of PTSD starts with identifying three major key components that cause the disturbance (Lancaster et al., 2011). These components are intrusive unprocessed memories, irrational beliefs about the self, and maladaptive coping strategies (Berntsen et al., 2008; Ehlers & Clark, 2000). The emotion dysregulation model of anxiety addressed and informed the independent variable anxiety. It stated that emotional dysregulation depends on the person's affective style, who may respond in a positive or a negative manner to certain triggering events based on their individual predispositions (Hofmann et al., 2012; Mennin et al., 2005; Suveg et al., 2010).

A multidimensional theory of burnout explored and informed the three dimensions of burnout and three independent variables MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement. It explained burnout by using three different factors: MBI emotional exhaustion, MBI depersonalization, and MBI personal

achievement (Bakker et al., 2002; Lee & Ashforth, 1990; Maslach, 2017; Maslach & Leiter, 2016). Lastly, the hedonic treadmill model analyzed and explained the dependent variable life satisfaction. It postulated that people have the ability to be resilient in positive and negative circumstances, and to have the capability to return to their previous state of neutrality (Brickman & Campbell, 1971; Diener et al., 2006; Di Fabio & Palazzeschi, 2015; Gleibs et al., 2013). The focus of this research was to confirm the correlational relationships between life satisfaction, and the independent variables: PTSD, anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement. This examination was completed through the use of the hedonic treadmill theory to explore life satisfaction of first responders who responded to a mass shooting.

The hedonic treadmill model was based on the original hedonic adaptation theory proposed by Brickman and Campbell (1971). Brickman and Campbell (1971) believed that positive and negative circumstances have the ability to disrupt levels of happiness, leading people to respond accordingly to events, however, with time individuals adapt to a neutral level of happiness. Brickman and Campbell (1971) considered those fluctuations in happiness as short-lived responses to normal life events. This research supported a statistically significant relationship between PTSD, anxiety, MBI emotional exhaustion, MBI depersonalization, MBI personal achievement and life satisfaction. Specifically, having responded to a mass shooting has a negative effect on life satisfaction. Therefore, the use of hedonic treadmill can be used to explore how further traumatic events impact life satisfaction. This study generated empirical evidence to validate the use of hedonic treadmill in exploring significant traumatic events. This

finding contributed to the hedonic treadmill theory by informing the influence of PTSD, anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement on life satisfaction. Further this finding would support that comprehensive trauma focused therapeutic interventions would be beneficial for first responders post mass shootings (Chatzea et al., 2018; Ellrich & Baier, 2015). This finding might guide future research to deepen the understanding of how mass shootings impact life satisfaction of first responders.

Practical Implications

This quantitative correlational study provided new insights into the phenomenon of life satisfaction, which could be used to assist first responders who responded to a mass shooting. The data analysis revealed that respondents had a mild level of PTSD, a mild level of anxiety, a moderate level of emotional exhaustion, a high level of depersonalization, a high level of personal achievement, and were slightly satisfied with their lives. Prior research studies established that PTSD played a significant role in diminishing life satisfaction among different populations, including first responders (Ellrich & Baier, 2015; Klimley et al., 2018; Marchand et al., 2015; Motreff et al., 2020; Potard et al., 2018). Prior research also indicated that anxiety played an important role in decreasing life satisfaction among first responders (Allison et al., 2019; Derrick et al., 2019; Halouani et al., 2015; Paulus et al., 2018). Lastly, prior research confirmed a significant connection between the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) and life satisfaction in first responders (Andersen & Papazoglou, 2015; Chatzea et al., 2018; McCarty et al.,

2019; Moukarzel et al., 2019; Queirós et al., 2020). The findings concluded that statistically significant relationship occurred between all independent variables (PTSD, anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) and life satisfaction of first responders who responded to a mass shooting.

The practical implications of this research study may help to introduce training programs for first responders in an effort to better understand the overall impact of mass shootings on this specific population. Another practical implication of this research study may bring public awareness of the challenges and consequences that first responders encounter following a mass shooting, and how those challenges affect their mental health and life satisfaction. This study may demonstrate the need for additional funding to be appropriated by law makers for research related to mass shootings. The results of this study may assist with the development of appropriate trainings and policies to support agencies that employ first responders. This research study may identify significant contributors to life satisfaction, the findings could be used to help first responders identify the factors that would improve their life satisfaction. Lastly, a practical implication may be the implementation of mental health programs to help first responders cope with the aftermath of mass shootings with the goal of increasing their quality of life and overall life satisfaction.

Strengths and Limitations of the Study

There were a number of strengths and limitations discovered within this study. The main strength of this study was that it examined multiple elements such as PTSD, anxiety, the three dimensions of burnout (MBI emotional exhaustion, MBI

depersonalization, MBI personal achievement) that contribute to life satisfaction. The examination of multiple elements could potentially lead to a greater understanding into the reasons why some first responders experience a higher level of life satisfaction, and some experience a lower level of life satisfaction (Choi, 2018). This study uncovered statistically significant relationships between all five independent variables, and one dependent variable, validating the findings that were previously discovered by other researchers that factors such as PTSD, anxiety, and burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement) have a negative impact on life satisfaction of first responders (Bastos Machado de Resende et al., 2020; Berle et al., 2018; Lala et al., 2016; Moukarzel et al., 2019).

The first limitation of this quantitative study was found within the sample population. The results demonstrated that the sample was comprised primarily of law enforcement officers ($F = 93.3\%$). This indicated that other groups of first responders such as firefighters, EMTs, and paramedics were underrepresented in this study. The second limitation of this study was related to the geographic composition of sample. The sample was made up of individuals who served in the Southwestern Region of the United States ($F = 74.3\%$). This indicated that other regions of the United States, such as the Midwest, Southeast, Western, Northeast, and other US territories were underrepresented in this study.

The third limitation of this quantitative correlational study existed in the community of service, and possible perceptions towards gun ownership. This study was comprised of 74 respondents who served in urban communities ($F = 70.5\%$). The

findings indicated that rural, and suburban communities of service were underrepresented in this study. The attitudes towards gun ownership was not explored in this study. The fourth limitation of this study was rooted within the scope of the study. The scope of this research was narrowed to five independent variables, PTSD, anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement: and one dependent variable, life satisfaction. The scope examined the existence of a correlational relationship between the independent, and dependent variables. Prior research discovered that other important factors such as depression, quality of sleep, and pain might also play significant role in life satisfaction of first responders (Griffith et al., 2019). The above-mentioned factors were excluded from this study and were not explored.

Recommendations

The results of this research study offer various opportunities for future research and practice. This study examined the correlational relationship between PTSD and life satisfaction, anxiety and life satisfaction, MBI emotional exhaustion and life satisfaction, MBI depersonalization and life satisfaction, and MBI personal achievement and life satisfaction. The outcome of this study may benefit other researchers who seek to understand the factors that contribute to life satisfaction and add to the body of literature on the topic of the effects of mass shootings on life satisfaction of first responders. The findings of this study could be used to help first responders identify the factors that would improve their life satisfaction. Based on the results of this study, the following recommendations for future research and practice were offered.

Recommendations for Future Research

This quantitative correlational study was able to fill a research gap identified in the review of the literature. This research study also addressed research gaps that had not been explored, identified strengths and limitations of this study, and outlined the areas of future research. The first recommendation for future research was based on the sample size. The final sample size in this study was 105. The necessary minimum sample size, as per a G*Power analysis was 92 (See Appendix A). Therefore, the minimum sample size was exceeded by 13 responses. However, it would be beneficial to the first responder population to replicate this study using a larger sample size, to gain a better understanding of the effects of mass shootings on life satisfaction of first responders.

The second recommendation for future research was based on the limitation of this study and was found within the sample population. The findings demonstrated that the sample was comprised primarily of law enforcement officers, while other first responder groups such as firefighters, EMTs, and paramedics were underrepresented. It is recommended that future researchers focus on other groups of first responders such as firefighters, EMTs, and paramedics. This type of future research could demonstrate how the findings could be applied to other first responder populations.

The third recommendation for future research was related to the geographic composition of sample. The sample was made up of individuals who served in the Southwestern Region of the United States. This indicated that other regions of the United States, such as the Midwest, Southeast, Western, Northeast, and other US territories were underrepresented in this study. Future researchers should conduct research in specific

geographic locations outside of the area that was overrepresented in this research study. That would provide greater understanding of the effects of mass shootings on the life satisfaction of first responders in other areas of the United States.

The fourth recommendation for future research pertained to the community of service and possible attitude towards gun ownership. This study was primarily comprised of first responders who served in urban communities. Prior research indicated that urban, suburban, and rural communities have different beliefs, views, and attitudes towards gun ownership (Metzl et al., 2021). It would be beneficial to explore how the difference in attitudes towards gun ownership, based on the community of service, affect the psychological response to mass shootings.

Lastly, the fifth recommendation for future research was rooted within the scope of the study. The scope of this research was narrowed to one dependent variable, life satisfaction, and five independent variables: PTSD, anxiety, MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement. The scope examined the existence of a correlational relationship between the independent and dependent variables. Prior research discovered that other significant factors such as depression, quality of sleep, and pain might also play an important role in life satisfaction of first responders (Griffith et al., 2019). It is recommended that future research should include those factors when exploring the effects of mass shootings on the life satisfaction of first responders.

Recommendations for Future Practice

The recommendations for future practice were based on the conclusions of this study. The recommendations for future practice are directed towards organizations that employ first responders and are intended on positively impacting this population. The recommendations are essential as they are designed to increase the life satisfaction of first responders, which could help increase productivity and overall work commitment. The following recommendations will benefit both the agencies that employ first responders, and first responders themselves.

The first recommendation for future practice was directed towards the leaders of the agencies that employ first responders. It is essential for the leaders to target the mental health stigma among first responders. This could be accomplished by implementing anti-stigma campaigns to ensure that first responders request, and receive the mental health assistance they need. An effective way to strengthen and emphasize anti-stigma messages is incorporate the champions in the workplace to strengthen, deliver, and emphasize these anti-stigmatic messages.

The second recommendation for future practice was intended to introduce training programs for the administrators, and leaders to assist the management team, and other staff members in developing the skills necessary to identify early signs and symptoms of mental health issues. First responders may encounter a number of challenges and consequences following a mass shooting. This training should focus specifically on the effects of mass shootings on first responders, in an effort to better understand the overall impact of mass shootings on this specific population. In addition, training should focus

on how leadership can promote mental health in the workplace and guide employees to receive appropriate help, when need arise.

The third recommendation for future practices was to establish a network of mental health professionals who understands the specifics of first responder's culture. Understanding the needs of first responders would contribute to positive participation by first responders. In addition, establishing peer support network (in-house, local, and national) to assist first responders, both active and retired, and their families would promote open discussions about mental health issues and contribute to reduction of shame and stigma.

Lastly, another recommendation for future practices was to promote and encourage critical incident stress management (CISM) tailored specifically for first responders with a goal of decreasing traumatic impact, and promoting mental health literacy in the workplace. Those services may help first responders cope with the aftermath of mass shootings with the goal of increasing resiliency, quality of life, and overall life satisfaction.

Conclusions

This research study revealed statistically significant relationships between PTSD, anxiety, MBI emotional exhaustion, MBI depersonalization, MBI personal achievement, and life satisfaction of first responders who responded to a mass shooting. The findings were limited to the correlational design of the research, where the relationships were examined through quantitative design. The independent variable PTSD had a range of scores from a minimum 0 to a maximum 24 with a mean score of 10.59 (SD = 6.421),

indicating that respondents had a mild level of PTSD. The independent variable anxiety had a range of scores from a minimum 0 to a maximum 16 with a mean score of 7.24 (*SD* = 5.026), indicating that respondents had a mild level of anxiety. The independent variable MBI emotional exhaustion had a range of values from a minimum 0 to a maximum 42 with a mean score of 22.19 (*SD* = 13.424), indicating that respondents had a moderate level of emotional exhaustion. The independent variable MBI depersonalization had a range of values from a minimum 0 to a maximum 25 with a mean score of 10.66 (*SD* = 7.313), indicating that respondents had a high level of depersonalization. The independent variable MBI personal achievement had a range of values from a minimum 7 to a maximum 48 with a mean score of 23.33 (*SD* = 10.820), indicating that respondents had a high level of personal achievement. The dependent variable life satisfaction had a range of values from a minimum 12 to a maximum 34 with a mean score of 21.99 (*SD* = 6.411), indicating that respondents were slightly satisfied with their lives.

The findings of this study discovered the needs for future research to employ a larger sample size; focus on other groups of first responders such as firefighters, EMTs, and paramedics; conduct research in specific geographic locations outside of the area that was overrepresented in this research study; and to explore how the difference in attitudes towards gun ownership, based on the community of service, affect the psychological response to mass shootings. Additionally, further research is needed to explore the interactions other significant factors such as depression, quality of sleep, and pain might also play an important role in life satisfaction of first responders (Griffith et al., 2019). It

is recommended that future research should include those factors when exploring the effects of mass shootings on the life satisfaction of first responders.

In conclusion, the findings answered all five research questions to address a gap in the literature, rejected all five null hypotheses, accepted all five alternative hypotheses, and contributed to the body of knowledge to help understand the phenomenon of life satisfaction. The findings of this research revealed statistically significant relationships between the variables. The findings indicated that the multiple linear regression approach made statistically significant prediction to life satisfaction among first responders who responded to a mass shooting. This study provided empirical evidence to support the use of the hedonic treadmill model on life satisfaction. The study also validated the use of the SPRINT to measure PTSD, the use of the GAD-7 to measure anxiety, the use of the MBI to measure the three dimensions of burnout (MBI emotional exhaustion, MBI depersonalization, and MBI personal achievement), and the use of the SWLS to measure life satisfaction. The leaders of the agencies that employ first responders may use the knowledge and insights provided by this study to target the mental health stigma among first responders and promote mental health literacy in the workplace.

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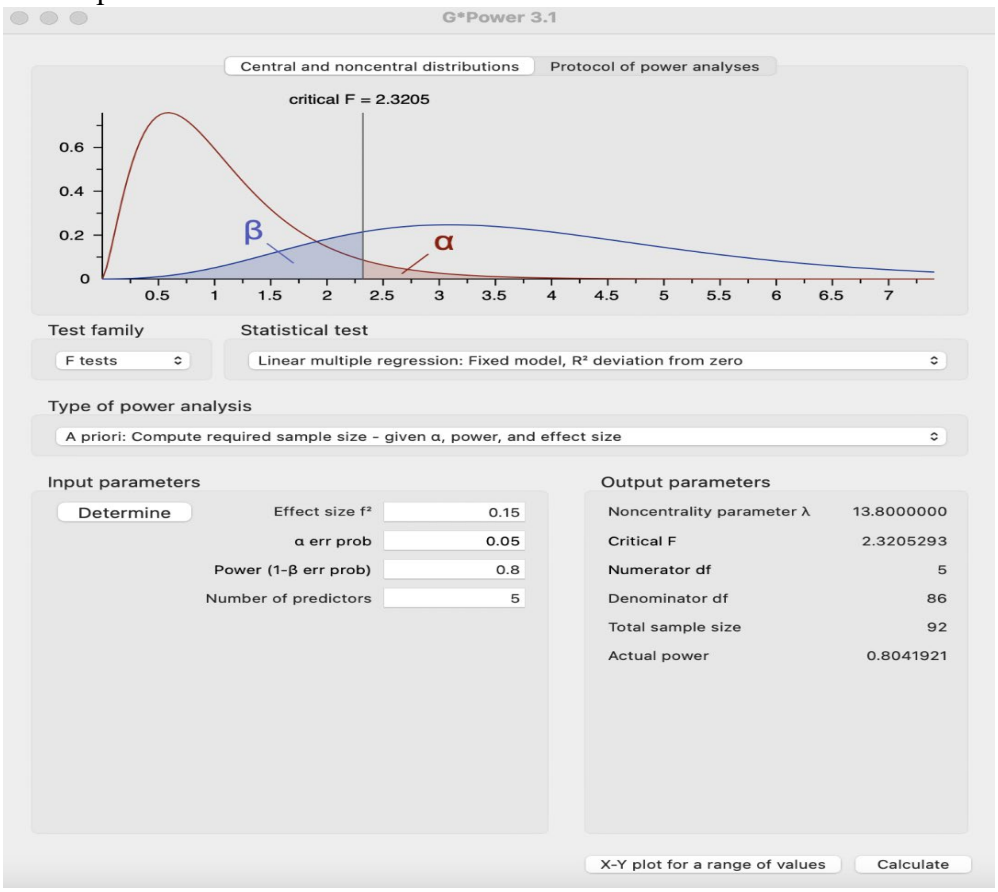
Appendix A: G*Power Analysis

Test family: F tests
Statistical test: Linear multiple regression: Fixed model, R2 deviation from zero
Type of power analysis: A priori: Compute required sample size – given α, power, and effect size

Input parameters:
Effect size f2 = 0.15
α err prob = 0.05
Power (1-β err prob) = 0.80
Number of tested predictors = 5
Total number of predictors = 5

Output parameters:
Noncentrality parameter λ = 13.8000000
Critical F = 2.3205293
Numerator df = 5
Denominator df = 86
Total sample size = 92
Actual power = 0.8041921



Appendix B: Advertising LinkedIn Post

Greetings LinkedIn family,

I will be conducting a quantitative research study which will assist in collecting data for my Doctoral Dissertation. The title of my dissertation is:

The Effects of Mass Shootings on Life Satisfaction of First Responders.

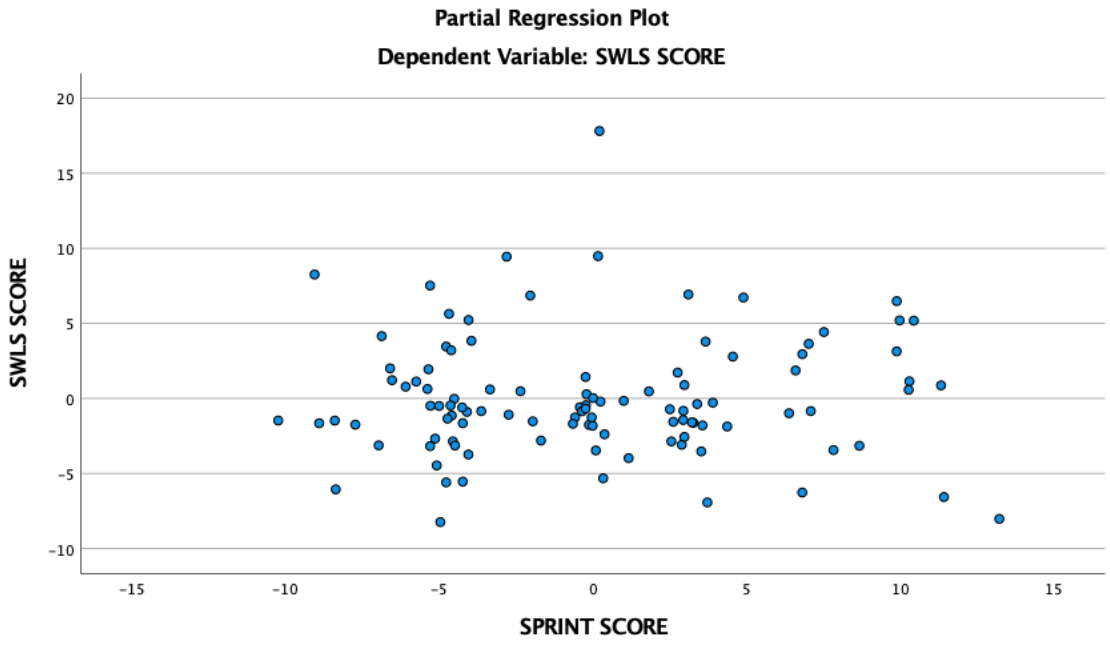
I am hoping to recruit 120 first responders (law enforcement officers, firefighters, paramedics, EMTs) who responded a mass shooting to assist in the data collection by completing an online survey. The survey itself is 100% anonymous, no identifiable information will be collected from the participants. If you are a first responder who responded to a mass shooting during your career or know anyone, who meets criteria to participate, please share the link with them. Participation is voluntary, no compensation is offered for participation. The results of my study will be made available via my LinkedIn page, https://www.linkedin.com/in/anna-garza-ms-lpc-3a00a2111?trk=people-guest_people_search-card. I appreciate your time.

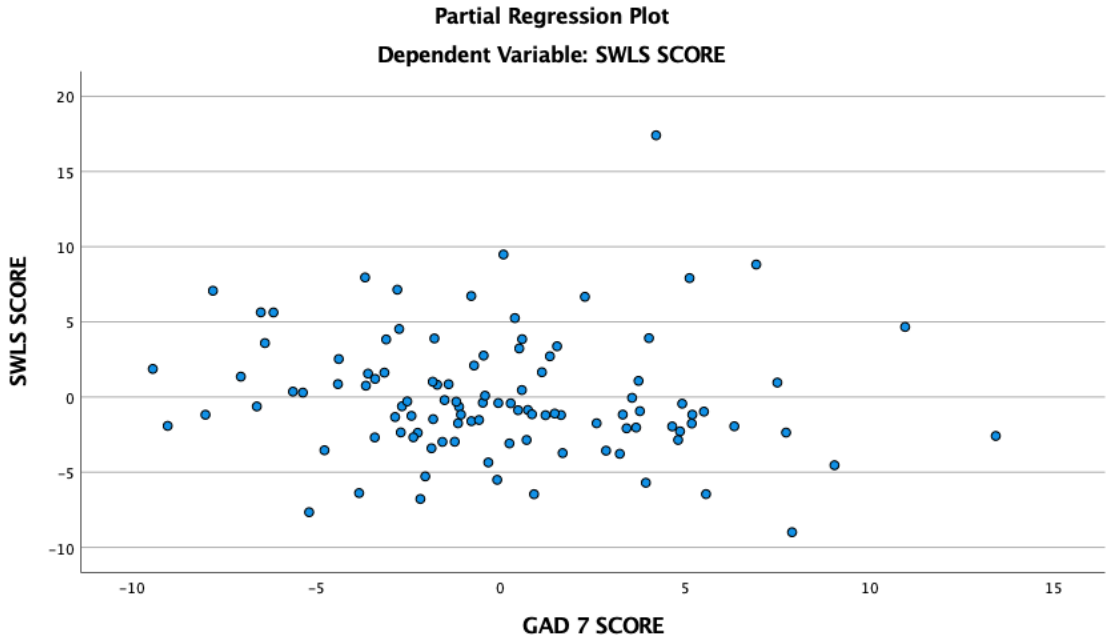
Thank you

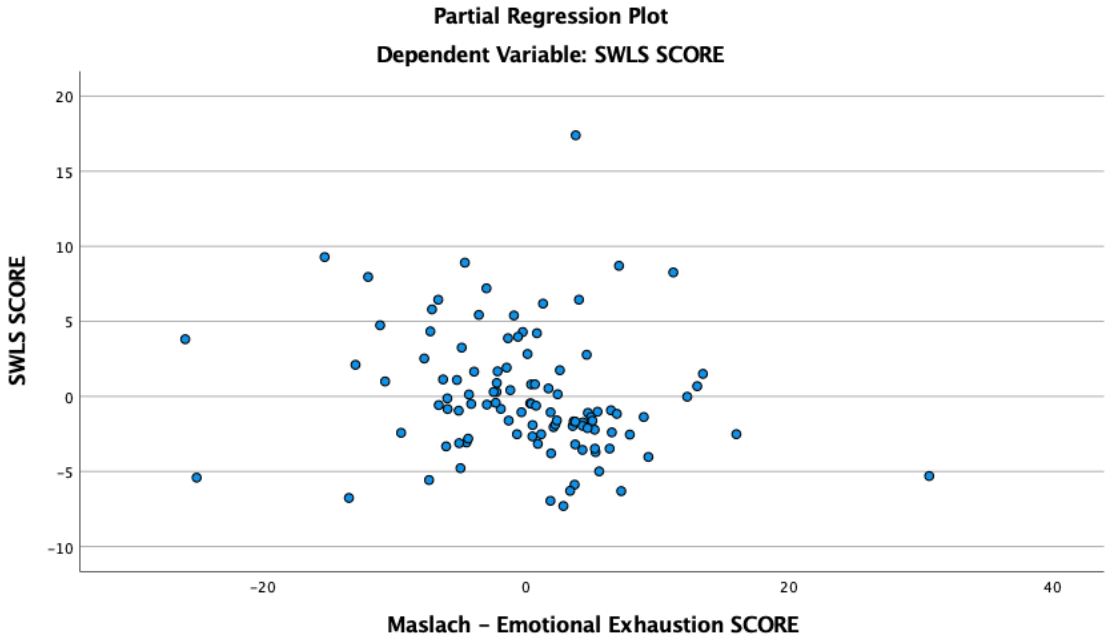
Appendix C: Demographic Questions

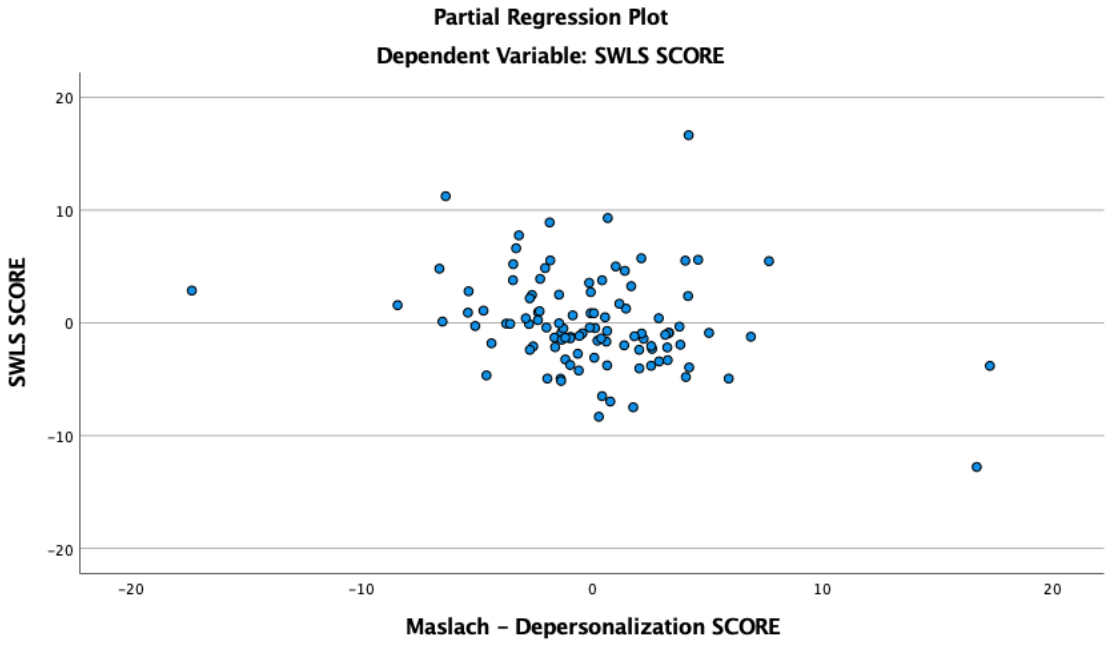
Demographic Questions						
Age	18-29	30-39	40-49	50-59	60-69	70+
Gender	Male	Female	Other			
Race	Caucasian	African-American	American Indian or Alaskan Native	Asian	Native Hawaiian /Pacific Islander	Other
Ethnicity	Hispanic	Non-Hispanic				
Marital Status	Married	Single	Divorced	Widowed	Separated	Other
Education Level	High School/GED	Some College	Undergraduate	Graduate	Doctorate	Other/Professional
Type of First Responder	Law Enforcement	Firefighter	Paramedic/ EMS	Other		
Employment Status	Full Time	Part Time	Contract	Volunteer/ Reserve	Retired	
US Region of Service	West	Midwest	Northeast	Southeast	Southwest	Other US Territory
Community of Service	Urban	Suburban	Rural			

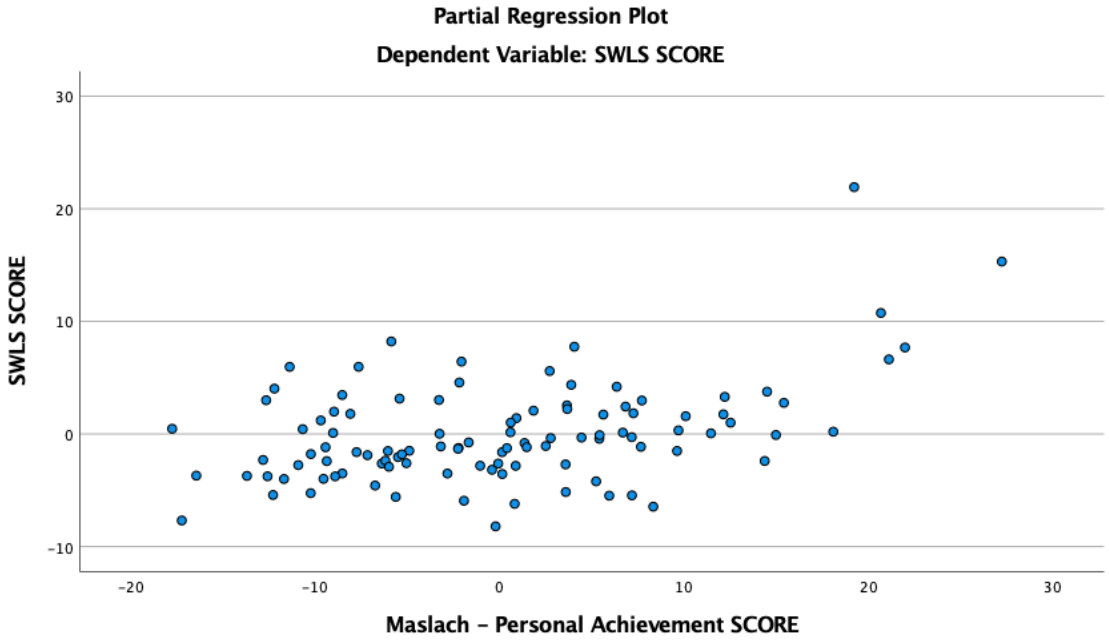
Appendix D: Partial Regression Plots






Partial Regression Plot
Dependent Variable: SWLS SCORE
SWLS SCORE
20
15
10
5
0
-5
-10
-20
0
20
40
Maslach – Emotional Exhaustion SCORE


Partial Regression Plot
Dependent Variable: SWLS SCORE
SWLS SCORE
20
10
0
-10
-20
-20
-10
0
10
20
Maslach – Depersonalization SCORE


Partial Regression Plot
Dependent Variable: SWLS SCORE
SWLS SCORE
30
20
10
0
-10
-20
-10
0
10
20
30
Maslach – Personal Achievement SCORE

Appendix E: Permission to Use SPRINT

Dear Hanna:

Thank you for your interest in the Short PTSD Rating Inventory (SPRINT). By this agreement you are granted permission to use the scale in the activity you have described, under the following terms:

1. You agree not to provide the scale to a third party unconnected with your project. If other off-site colleagues are involved with your work, their use of the scale is restricted to this work, and the signatory of this agreement is responsible for ensuring that all collaborators adhere to the terms of this agreement.

2. You may use the SPRINT in written format for completion as a hard copy, through administration over the telephone, or electronically in a secure format to protect the scale from unauthorized distribution or the possibility of modification.

3. If modification or changes in formatting are desired, permission of Dr. Davidson is required. It is important that the entire copyright statement be retained *verbatim* on all formats of the scale.

4. If you create a non-English language or culturally modified version of the SPRINT, please e-mail a copy of the English back translation of the scale for review prior to implementing the scale in your work. In addition, please include the following language at the end of the form:

Scale is based upon the English language version of the Short PTSD Rating Inventory, © 2017, Jonathan R. T. Davidson, MD. All Rights Reserved. Translation by.....

5. For use of the SPRINT a one-time fee of $ 25 US is requested, payable to Jonathan Davidson at 2434 Racquet Club Drive, Seabrook Island, SC 29455, USA, by PayPal (mail@cd-risc.com, at www.paypal.com), regular cheque or bank wire. Echecks and postal orders are not accepted.

6. Complete and return this form via email to mail@cd-risc.com.

7. In any publication or report resulting from use of the SPRINT, you do not publish or partially reproduce the scale without permission of the copyright holder.

If the terms of this agreement are acceptable, please email a signed copy to the above email address. Upon receipt of the signed agreement and payment, we will email a copy of the scale. For questions regarding use of the SPRINT, please contact Jonathan Davidson, at mail@cd-risc.com.

Sincerely yours,

Jonathan R. T. Davidson, M.D.

Agreed to by:

Signature

9-20-2020

Date

Hanna Garza

Name (printed) (optional)

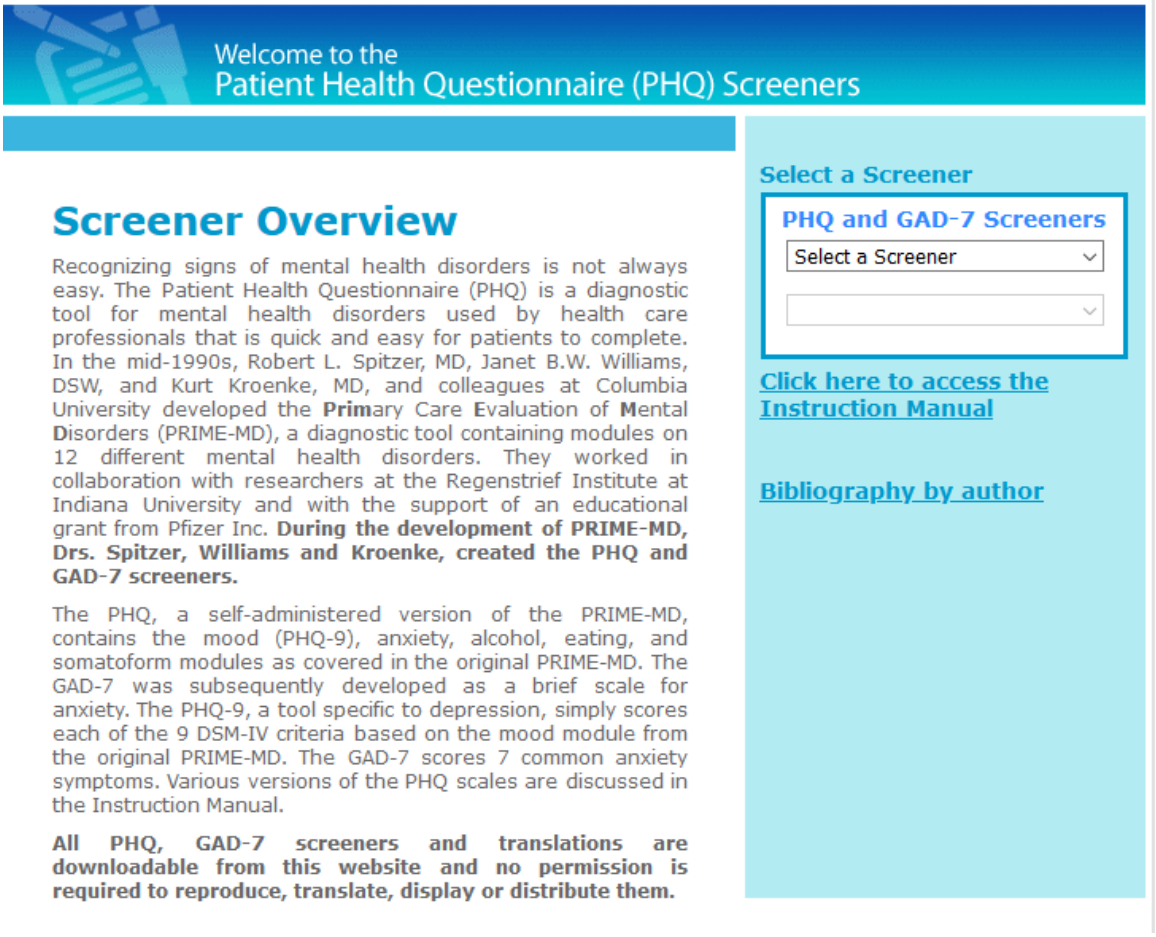
Student

Title

Walden University

Organization

Appendix F: Permission to Use GAD-7



Welcome to the
Patient Health Questionnaire (PHQ) Screeners

Screener Overview

Recognizing signs of mental health disorders is not always easy. The Patient Health Questionnaire (PHQ) is a diagnostic tool for mental health disorders used by health care professionals that is quick and easy for patients to complete. In the mid-1990s, Robert L. Spitzer, MD, Janet B.W. Williams, DSW, and Kurt Kroenke, MD, and colleagues at Columbia University developed the **Prim**ary Care **E**valuation of **M**ental **D**isorders (PRIME-MD), a diagnostic tool containing modules on 12 different mental health disorders. They worked in collaboration with researchers at the Regenstrief Institute at Indiana University and with the support of an educational grant from Pfizer Inc. **During the development of PRIME-MD, Drs. Spitzer, Williams and Kroenke, created the PHQ and GAD-7 screeners.**

The PHQ, a self-administered version of the PRIME-MD, contains the mood (PHQ-9), anxiety, alcohol, eating, and somatoform modules as covered in the original PRIME-MD. The GAD-7 was subsequently developed as a brief scale for anxiety. The PHQ-9, a tool specific to depression, simply scores each of the 9 DSM-IV criteria based on the mood module from the original PRIME-MD. The GAD-7 scores 7 common anxiety symptoms. Various versions of the PHQ scales are discussed in the Instruction Manual.

All PHQ, GAD-7 screeners and translations are downloadable from this website and no permission is required to reproduce, translate, display or distribute them.

Select a Screener

PHQ and GAD-7 Screeners

Select a Screener

Click here to access the Instruction Manual

Bibliography by author

Appendix G: Permission to Use MBI

Hanna Garza

Remote online use of the Mind Garden instrument stated below is approved for the person on the title page of this document.

Your name:
Hanna Garza

Email address:
gurfix25@yahoo.com

Company/Institution:
Walden University

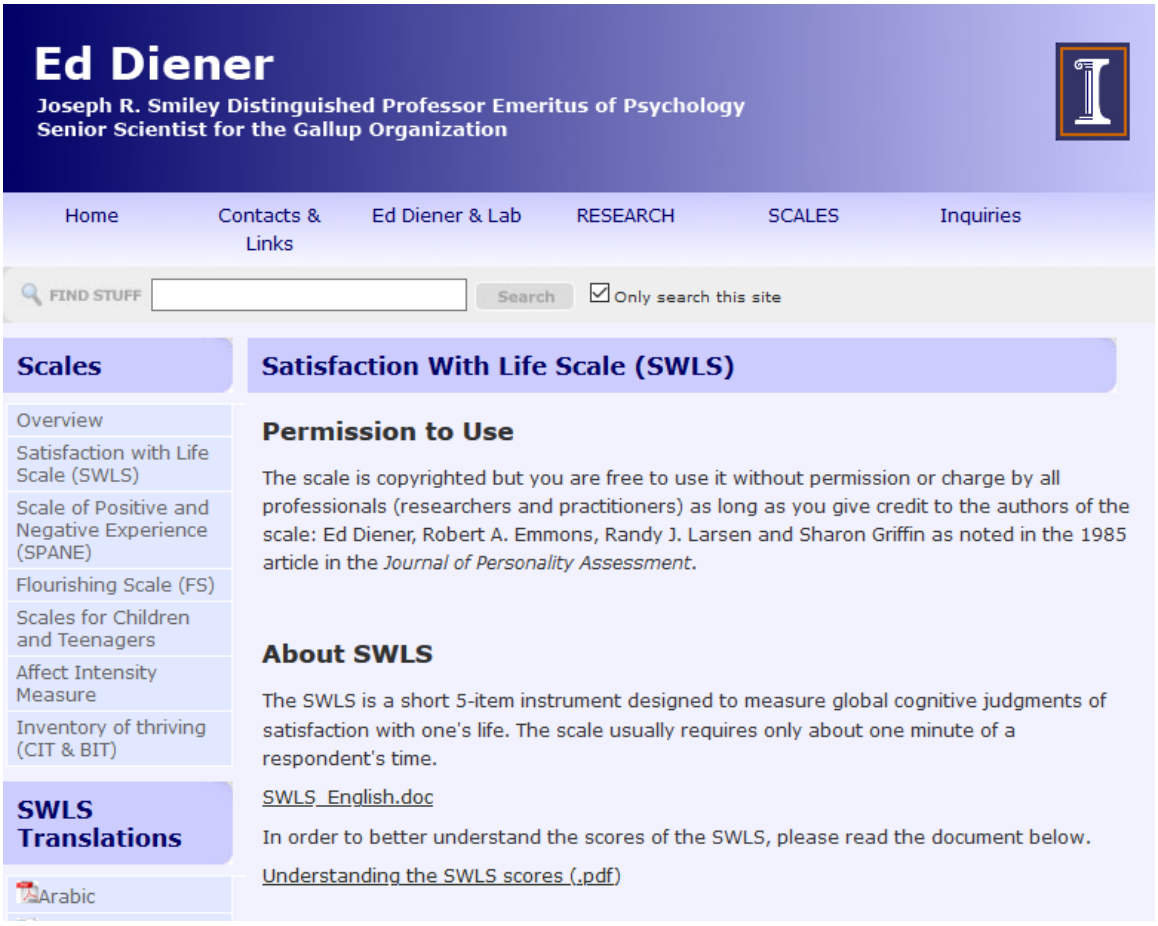
Mind Garden Sales Order or Invoice number for your license purchase:
sample 5

The name of the Mind Garden instrument you will be using:
Maslach Burnout Inventory

Please specify the name of and web address for the remote online survey website you will be using and describe how you will be putting this instrument online:
Research And Me: www.researchandme.com

Please include any other comments or explanations you would like to provide about your remote online use of a Mind Garden instrument:
Doctoral study

Appendix H: Permission to Use SWLS



Ed Diener

Joseph R. Smiley Distinguished Professor Emeritus of Psychology
Senior Scientist for the Gallup Organization

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Scales

- Overview
- Satisfaction with Life Scale (SWLS)
- Scale of Positive and Negative Experience (SPANE)
- Flourishing Scale (FS)
- Scales for Children and Teenagers
- Affect Intensity Measure
- Inventory of thriving (CIT & BIT)

SWLS Translations

- Arabic

Satisfaction With Life Scale (SWLS)

Permission to Use

The scale is copyrighted but you are free to use it without permission or charge by all professionals (researchers and practitioners) as long as you give credit to the authors of the scale: Ed Diener, Robert A. Emmons, Randy J. Larsen and Sharon Griffin as noted in the 1985 article in the *Journal of Personality Assessment*.

About SWLS

The SWLS is a short 5-item instrument designed to measure global cognitive judgments of satisfaction with one's life. The scale usually requires only about one minute of a respondent's time.

SWLS_English.doc

In order to better understand the scores of the SWLS, please read the document below.

Understanding the SWLS scores (.pdf)