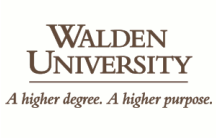

2018

Advocating Ideal Type Policy for Police Officer Wellness Based on Body Mass Index as a Predictor of Self-Reported Occupational Stress

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This is to certify that the doctoral dissertation by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
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2018

Abstract

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by

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MS, Hodges University, 2004

BS, Hodges University, 2001

Proposal Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

of Public Policy and Administration

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November 2018

Abstract

Scholars have validated both the damaging presence of police officer stress and separately, their increasing obese condition in the United States. Previous studies of police officers focus on stress or body weight, but not these variables conjointly. The purpose of this study was to inform policy creation by examining the problem of officer stress in relation to the calculated body mass index (BMI) values and to gain insight into stress outcomes. Lazarus and Folkman's stress-coping theory served as the research lens to examine if BMI would significantly contribute to the percent change of R^2 variance accounted for in the predictive effect of self-reported organizational and operational stress in the past 6 months after controlling for age, gender, rank, marital status, shift work, and seniority. This quantitative research consisted of survey data that were collected from 132 volunteer officers using McCreary's Police Stress Questionnaires. Multiple regression analysis tested the predictive relationship between BMI and stress and regression model outputs illustrated no statistically significant relationship between officer stress and BMI; however, *post hoc* analyses found shift work to be a significant stress predictor ($p = .01$). Based on regression results and this body of research, social change implications include police administrators promoting policies and training which protects officers from the harmful effects of stress and BMI. Lessened stress can have a positive influence on the police and the entire public they serve.

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Dedication

I dedicate this to all police officers; no one knows the private battles that live within them as they solve society's problems every day.

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Chapter 1: Introduction to the Study

The exposure of police officers to excessive amounts of accumulated stress due to the rigors of police work itself is the focus of my project. The response, practice, and policy for police officers is incongruent with the degree of the problem. Occupational stress in law enforcement is inherent, and the officer or the organization can scarcely control most work-related anxieties. Compounding officer stress are other variables, such as ample body weight, which may impact anxiety in some manner. Excessive body weight is one variable which can be controlled and distresses roughly 80% of America's police force (Bonauto, Lu, & Fan, 2014; Hostetter, 2007; Loux, 2015; Shell, 2005). Stress and an overweight condition comprise a significant health problem for America's law enforcement (Arter, 2008; Berset, Semmer, Elfering, Jacobshagen, & Meier, 2011) further amplified by a lack of policy or incentives to regulate either body weight or stress. The potential for positive change in governing excess officer body weight via policy is far-reaching as the officer will be healthier, police agencies, in general, can reduce various costs, and the public will receive better police services. This chapter will discuss the benefits further.

This chapter addresses the problem and purpose in greater detail. It introduces the research questions, similar theoretical frameworks, and the nature of this study as it impacts human resources and policy analysis. Finally, this

chapter defines the terms as well as assumptions, scope, and limitations of this study, concluding with an examination of the significance of this research project.

Background

A policy for stress management and regulation of body weight may be considered part of an ideal scenario for an improved and healthier public safety workforce (Boyden, 2010). The ability to cope better with vocational daily hassle stressors has far-reaching outcomes. For police officers, those outcomes are better health and improved police performance (Boyce, Willett, Mullins, Jones, & Cottrell, 2014; Can & Hendy, 2014; Chen, 2009; Chikwem, 2017; Neely & Cleveland, 2013). Moreover, improved police performance translates to a more tempered officer regarding performance, decision making, and trust building for the public (Alert et al., 2013; Chen, 2009). Serving the public, carrying a firearm, and having the responsibility to detain and arrest a citizen contributes to vast daily stress for police officers (Corrales, 2013; Hansen, 2016).

It is widely accepted that having an unhealthy body weight or being overweight negatively impacts a person's health (Azagba & Sharaf, 2012; Milsom et al., 2014; Van Nuys, 2014). Unhealthy body weight further effects stress responses in an unknown manner (Gu et al., 2013a; MacDonald, 2007; Proper, Koppes, Van Zwieten, & Bemelmans, 2013b); stress was found to lead to weight gain, further compounding the overweight condition (Berset et al., 2011). Without a public policy directive to manage excessive officer weight and stress, police

officers endure a dual hardship. My research is intended to provide police leaders, human resource managers, and public policy makers evidence regarding the consequences and necessity of a policy for weight management and officer stress to maximize health and welfare. I looked at stress through the lens of the transactional stress-coping theory. In addition to the stress-coping theory, I applied Max Weber's ideal type theory guided the policy proposal purpose and direction for the study.

Only police officers executing their duties at top efficiency should wield police authority (Can & Hendy, 2014; Chen, 2009; Envick, 2011). Simply put, the public can expect police officers who consistently carry out tasks at peak levels of proficiency to have increased job performance to the society they serve (Hostetter, 2007). Stress and weight management problems of officers are not private troubles; they are public problems facing public law enforcement organizations that interact with citizens daily (Dean, 2014; Envick, 2011). Therefore, complementary policy or incentives should be in place to manage stress and weight using BMI values as a guideline.

Police work is known to be one of the most stressful occupations (see Arter, 2008; Can & Hendy, 2014; Chen, 2009; Finney et al., 2013; Gilbert, 2010; Kyle, 2008; Liberman et al., 2002; McCarty, Zhoa, & Garland, 2007; McCreary & Thompson, 2006; Neely, 2011; Neely & Cleveland, 2013; Selokar et al., 2011; Smith, 2013; Stoughton, 2015; Watery & Ussery, 2007; Wang et al., 2014; Yoo,

2007). Police officers are also active representatives of their local government. Civically disenchanted citizens may project adverse government outlooks onto officers, which may, in turn, create additional conflict and stress for officers (Wang et al., 2014). As agents of the local government, officers should benefit from protections against undue stress and unhealthy activities through the development of public policy. My research first briefly addressed the effects of stress on police officers.

Stressors on Law Enforcement Officers

The life expectancy of police officers is years shorter than that of the average American (Hostetter, 2007; Loux, 2015; Violanti et al., 2013). I discuss the shorter lifespan of officers in more detail in Chapter 2. For example, retired police officers in Florida have an average life expectancy of 62 years old compared to the general population of retired Floridians who live on average to 74 years old (Brevard County Sheriff's Office, 2011). Factors contributing to this reduced life expectancy include: (a) stressors of all types, (b) shift work and overtime work, (c) obesity, and (d) exposure to other professional hazards. A discussion of stressors for police officers must include being overweight because people with an average weight tend to respond differently to stressors versus people who are overweight or obese (Berset et al., 2011; MacDonald, 2007; Proper et al., 2013b).

Body Mass Index (BMI)

The stress-coping theory postulates decreasing human anxiety through a problem-oriented coping strategy with any stressor, including overall health and body weight as stressors (Lazarus & Folkman, 1984). According to Proper et al. (2013b), people with an overweight condition have increased stress levels compared to those with appropriate body weight. The BMI formula translates a person's height and weight into a whole number value which indicates under, average, over, and obese weight groups (Centers for Disease Control [CDC], 2017). There are challenges to the accuracy of BMI based on muscle mass, but BMI is logistically reasonable to use and considered an accurate overall measure of body fat (Phan et al., 2012). Having a value below 25 indicates an average weight. A BMI value of 25 or over is considered overweight and dramatically increases a person's chances of injury on the job. Proper body weight is important due to cost effectiveness as fewer injuries can save government agencies money in health costs.

My project was grounded in the assertion that poor health, and specifically obesity, is a growing public health concern. MacDonald (2007) described obesity as America's new epidemic when the obesity rate was 33.7%. The CDC (2017) reported the United States obesity rate has increased in America to 36.5% since then. Even reductions in body weight as small as 5% can decrease an individual's chances significantly of experiencing heart disease, diabetes, and other health

issues, even if the subject remains obese (Alert et al., 2013; Jackson, Steptoe, Beeken, Kivimaki, & Wardle, 2014; Lasikiewicz, Myrissa, Hoyland, & Lawton, 2014; Milsom et al., 2014). I could not locate research that specifically investigated any relationship between police officers' stress and BMI. My research aimed to address this significant gap in the existing academic literature determine if being overweight or obese predicted stress.

In modern American society, overweight people may be stigmatized and viewed negatively for merely being overweight. An overweight individual may be subject to forms of discrimination at work because of high body weight (see Arnold & Staffelbach, 2012; Bartels & Nordstrom, 2013; Lasikiewicz et al., 2014; Randle, Mathis, & Cates, 2012). There is a definite link between weight loss and improved confidence and other physiological benefits (CDC, 2017; Jackson et al., 2014). Researchers recommended further investigation into the possible consequences of weight loss. There is a known and understood body of research regarding stressors for police officers and, separately, the benefits of weight loss. My research focused on the predictive relationship between different BMI ranges and police officer stressors.

Weight loss is an extensively researched area. Milsom et al. (2014) conducted a project in which participants underwent a 12-week weight loss plan. This experimental weight loss study measured outcome health variables such as cholesterol and blood pressure. It was discovered that with a mere weight loss of

approximately 4% of their baseline weight, participants reduced several negative health factors such as high cholesterol and high blood pressure (Milsom et al., 2014). In the reviewed literature, however, no previous research could be explicitly found addressing the manner, if any, in which weight reductions might relate to or predict stress levels of police officers. My project intended to fill this gap in the literature where the predictive relationship of stress was explicitly investigated with BMI values of officers.

Reducing Stressors

Kyle (2008) conducted an experiment in which police volunteers watched a short and humorous movie. After the film, volunteer officers took a self-reporting stress survey. Kyle also had a control group of officers who observed a show that was not humorous. All the police officers in the study completed the same post-stress survey: The State-Trait Anxiety Inventory (STAI). Kyle (2008) found that exposing officers to the short humorous movie did reduce their stress levels as measured by the STAI mean score of 4.8. However, the follow-up survey with the same officers just 30 days later revealed the effects of stress reduction had dissipated with a mean score on the STAI of 1.0.

Decreasing and managing one's stress level can increase the quality of life and work (Barringer & Orbuch, 2013; Lazarus & Folkman, 1984). Human resource managers and law enforcement policymakers involved with officer safety and public health standards can use the results of my research to maximize

human capital in law enforcement. On the level of public policy advocacy, my research could contribute towards the achievement of two goals: (a) forming policy to assist police officers in lowering their stress levels, and (b) monitoring and controlling officers' body weight without discrimination. Since some association between weight and stress exists (Berset et al., 2011), the dual policy focus of this study becomes an essential issue for police agencies.

My study assumed that stress is a viable threat to all police officers, which Dean (2014) validated in his study. Additionally, my study assumed any ability or knowledge gained in reducing weight and reducing anxiety would benefit police officers, their families, and the public. Lastly, my study assumed officer improvements in health and stress would likewise positively influence performance and execution of the police officers' duties, in general, thus benefiting all society. Chikwem (2017) and Hostetter (2007) validated this assumption as well. People can control body weight, whereas governing stressors within the profession of law enforcement are predominantly limited (Gerber, Kellmann, Hartmann, & Puhse, 2010). America in general, and specifically south Florida, can benefit from officers who do not suffer from high stress (Gerber et al., 2013; Stoughton, 2015). Articulating the effects of high stress on officers may encourage and teach officers to manage that stress more effectively. It is considered a miscarriage of government policy-making for police administrators to ignore the need for policy in managing police stress (Bardach, 2012).

Problem Statement

Being overweight is widely accepted as producing adverse health effects. It is well documented to have an unknown impact on stress (Gerber et al., 2013; Gu et al., 2013a; Proper, 2013b). Perry (2012) found that obesity was prevalent in America and 68% of the population is overweight. These statistics are steadily rising on an annual basis and currently are estimated at 75% (CDC, 2017; Thompson, 2004a). American police officer populations exceed this figure at 80% (Bonauto et al., 2014; Hostetter, 2007; Loux, 2015; Shell, 2005). Despite the known damaging effects of being overweight, numerous Florida Sheriff's Office's do not have a mandatory BMI regulation policy in place for employees. The state of Florida does not have a mandatory fitness standard for officers either (Florida Department of Law Enforcement [FDLE], 2017).

Further, only a medical physical is required for employment to be a police officer in Florida. During the police recruit stage, the Florida police candidate must complete a short physical ability test (PAT) in under 6 minutes and 4 seconds. Bardach (2012) suggested protective policy construction by defining a public policy problem of excess. For overall health, police officer stress and an overweight physique are problems of excess. Furthermore, this problem directly relates to the "failure of the government to function well in an area which it is traditionally expected to act effectively" (Bardach, 2012, p. 3).

The specific problem is the lack of BMI policy standards for police officers. Stress and high BMI values are linked in some manner (Berset et al., 2011; Proper et al., 2013b). This lapse in BMI policy negatively impacts officers' health, job performance, and even stress (Can & Hendy, 2014; Chikwem, 2017). Not managing officer BMI leads to a reduction in the overall efficiency of the police department (Boyden, 2010), and it may arguably signal a grave health problem among police officers. The performance of the police officer's duties calls for managing alternating periods of sedentary work, interspersed with exceptional, albeit often short, extreme stressful work episodes (Burchfiel, Anderson, & Straka, 2011; Corrales, 2013; Stoughton, 2015).

Law enforcement leaders, administrators, county managers, and scholars have neglected to address the problem of overweight police officers by formulating policy. The unintended consequences of this may have implications for all law enforcement agencies. Understanding that high BMI is detrimental to health, it is only a logical response for leaders to develop an ideal type of policy encouraging programs and treatments that can effectively govern healthy BMI among police officers without discrimination of the employee.

The ability to systematically reduce BMI among police officers, leading to improved health and lower stress, which then leads to enhanced work performance, is a goal of this study. Further to this goal, the primary purpose is to direct action policy formation to minimize and regulate BMI, and thereby

theoretically reduce the stress levels of police officers. The implications of healthy weight coupled with decreased stress for officers might even impact their diminutive life expectancy (Violanti et al., 2013). Enforcing standards or setting specific goals must be job task-specific and avoid employee discrimination. Neglected areas of research include experiments, treatments, and programs to systematically lower police officer BMI as well as address the relationship stress plays with BMI.

Purpose of the Study

The part that weight plays in relation to stress in law enforcement is barely known. With wellness and officer safety issues at stake, the primary purpose of my quantitative survey project is to propose a sound and informed policy option for controlling body weight and possibly stress management, grounded on the ideal type theory. Research evidence can advise policymakers further based on the relationship between stress and BMI of police officers. My research discussed both the deep-rooted problems stress causes as well as the harmful outcomes of being overweight. My research intended to explore a predictive correlation between BMI and stress, which could initiate policy formation in officer stress reduction.

According to the transactional coping theory, also known as the stress-coping theory, applying a problem-oriented coping solution to a stressful condition will relieve that stressor (Lazarus & Folkman, 1984). Applying this

theory as an example, if a low-calorie diet is adopted to solve the overweight problem, then the participant will lose weight, and the stress related to that problem will decrease. What is unknown is if the opposite effect may occur; such as that a weight loss regimen may increase stress. My research addressed the transactional stress-coping theory further and filled a gap in the current literature by analyzing the relationship between BMI and stress for officers. My study used a Likert scale police stress survey, which displayed police officers' stress as the dependent variable (continuous, interval level) that is being affected by the independent variable (continuous, interval level) of BMI.

Certified police officers from a midsized agency in South Florida compromise this cross-sectional quantitative survey design study. The police stress questionnaire is the survey tool used to examine and collect officer stress data, and it is a previously designed, reliable, and valid questionnaire. This police stress questionnaire is the survey tool and is a two-part Likert scaled self-administered police stress-specific examination. I used a multiple linear regression to measure the strength and direction of this relationship and predict the effect between BMI and stress. I discuss the covariates in more detail in the next chapter. I gathered several additional independent control variables such as rank, seniority, shift work, gender, age, and marital status as well.

My project also expanded the existing body of knowledge regarding officer stress, weight, and manners of coping with anxiety. Berset et al. (2011)

said stress influences weight gain, which begins the harmful cycle policymakers must address. Research on stress and weight in law enforcement may affect public policy formation processes and help begin an education initiative to resolve this threat. My research was vital due to the real hazards stress and high BMI pose to police. Finally, my research tested the transactional coping theory, via the police stress questionnaire survey, and applied the ideal type theory, encapsulated by the research questions.

Research Questions and Hypothesis

There is no research to compare stress between officers of varying body weight. I have deductively tested the transactional stress-coping theory based on BMI and officer stress to provide insight regarding stress coping solutions to officer stress. The ideal type theory was the framework employed to distinguish how well the concept of healthy body weight compared to actual body weights within police departments today.

Most people understand police officers should have some degree of fitness and well-being to be successful in their jobs and maintaining a healthy body weight helps cope with stress (Berset et al., 2011; MacDonald, 2007). If police departments are to successfully drive down health-related issues and stress within their organizations to improve performance and decrease adverse events, it makes sense to try to start improving health through policy from the top down. Weber's theory is hierarchical from the highest ranking administrators of an agency

downward, as he knew the best way to implement policy change was through the organization and how leaders influenced behavior (Kiser & Schneider, 1994).

This study has two research questions, which are as follows:

RQ1: Will BMI significantly contribute to the percent change of R^2 variance accounted for in the predictive effect of self-reported organizational stress in the past 6 months among south Florida police officers, after controlling for age, gender, rank, marital status, shift work, and seniority?

H_o1*:* BMI, when combined with stress, will not significantly contribute to the percent change of R^2 variance accounted for in the predictive effect of self-reported organizational stress in the past 6 months among south Florida police officers, after controlling for age, gender, rank, marital status, shift work, and seniority.

$H_1 1$*:* BMI, when combined with stress, will significantly contribute to the percent change of R^2 variance accounted for in the predictive effect of self-reported organizational stress in the past 6 months among south Florida police officers, after controlling for age, gender, rank, marital status, shift work, and seniority.*RQ2:* Will BMI significantly contribute to the percent change of R^2 variance accounted for in the predictive effect of self-reported operational stress in the past 6 months among south Florida police officers, after controlling for age, gender, rank, marital status, shift work, and seniority?

H_o2: BMI, when combined with stress, will not significantly contribute to the percent change of R^2 variance accounted for in the predictive effect of self-reported operational stress in the past 6 months among south Florida police officers, after controlling for age, gender, rank, marital status, shift work, and seniority.

H_12: BMI, when combined with stress, will significantly contribute to the percent change of R^2 variance accounted for in the predictive effect of self-reported operational stress in the past 6 months among south Florida police officers, after controlling for age, gender, rank, marital status, shift work, and seniority.

The dependent variable was self-reported levels of stress (management and life satisfaction among police officers) measured via a Likert-type two-part police stress specific survey. The independent variable was BMI measured using the participants' height divided by weight. The time in police service has been found to be positively associated with stress and coping ability (Wang et al., 2014). Smith (2013) said marriage in law enforcement was a positive factor in coping with stress. Shift work also adds to stress (Gerber et al., 2013; Wirtz & Nachreiner, 2012). Job rank is an organizational factor also increased anxiety (Johnson, 2012; Zachar, 2004). Age and gender demographic information was collected as well from subjects as these variables also increase or decrease stress in some manner. These variables are discussed further in Chapter 2.

The officers for my project were volunteers in a single-stage cross-sectional stratified sampling design. The police stress questionnaire survey is a research tool instrument specifically predesigned and tested to measure levels of stress among police officers. The device comprised one scaled survey (see Appendix A) with two parts, organizational and operational stressors, which query police subjects on 20 questions relating to either organizational or occupational stressors (McCreary & Thompson, 2006). A standard effect size of 103 police officers was the minimum output recommended via preliminary G*Power analysis. I solicited more participants, as oversampling will occur and the more participants that are in my study, the higher the statistical power will be. I selected a multiple linear regression analysis to evaluate the relationships between my variables and covariates.

Connotations of stress management, stress-coping experiences, and reactions to solving stressors are all grounded in the stress-coping process theory (Lazarus & Folkman, 1984). This psychological theory applied to reduce officer stress can direct public policy in this area. Understanding that a healthy weight and a certain amount of fitness is needed in a perfect state but is not present in the real world is grounded in the ideal type theory.

Theoretical Framework

The research questions and stress are associated. The stress-coping process theory, also known as the transactional stress and coping theory, is one of the

theoretical frameworks of my study. This theory explains how people can successfully cope with stressors. The stress-coping theory is a principle which applies to any situation or profession where the person experiences stress, including law enforcement. Lazarus and Folkman (1984) focused on how processing and appraising stressors impacted stress management. The stress-coping theory presented a framework for understanding how humans may react when exposed to a psychological stressor (Lazarus & Folkman, 1984). A more detailed explanation of this theory is in Chapter 2 of my project.

Once identifying a threat stressor, even if it is merely a daily hassle form of stress, people must assess and reassess the threat and solution. It is through an interpretive process that stress management leads to resolution, which leads to active coping. Coping is a practice in which the subject under stress attempts to relieve or resolve the source of tension and its impacts. Reassessment of the stressor may include a cognitive resolution of changing one's view of the stressor event (Randle et al., 2012). If a problem-oriented response to stress can reduce anxiety, policymakers could use this evidence to guide policy formation.

My project sought to contribute to the literature by improving a better understanding of the relation between BMI and stress among police officers and advocate policy based on evidence provided by testing this theory.

Conceptual Framework

The research questions rely on advocating an ideal policy for officer health. The ideal type refers to a perfect model or universe, and it represents multiple subjective viewpoints of a problem. An ideal policy might exist in a logical sense; however, the ideal type theory directs policy implementation from an ought to exist perspective (Wagner & Harpfer, 2014) Bartels (2009) said Weber's ideal type could inform policy on modern issues, such as stress and high BMI values. This framework of producing and using ideal type models for public administration theory has significant usefulness in forming policy. My research included best practices from several South Florida police agencies' fitness standards to propose a variety of conceptual policies and incentive programs.

Weber believed in an institutional position, where public agencies and the press held much responsibility in how society functioned (Hardt & Heyer, 2003; Norkus, 2004). High levels of stress lead to more problems than just health issues for police officers (Arter, 2008); it possibly makes it tougher to hire police officers, as people will not want a job that causes them significant stress and health concerns without impressive compensation and benefits packages. Even then, the most qualified of police officers may not be interested in the profession (Jarmillo, Nixon, & Sams, 2005). Comparing other agency best practices in wellness policies fulfill the ideal type theory requisite of comparing reality in Chapter 2.

Using an agency-oriented approach is vital to implement wide-scale changes throughout a police department or other public organization (Cockerham, 2005). Research and resulting initiatives to improve officer health and BMI should not be targeted directly at overweight or obese police officers. Instead, changes should influence and inform the top administrators at the policy level. Ideal type theory reasons it is most useful to turn ideas into practice through what would be ideal and what is possible (see Baehr, 2011; Cahnman, 1965; Dickens & Murphy, 2005; Harrington, 2008; Kemple, 2013; Redding, 2005). In basic terms, applying the ideal type theory is so that policies can be developed to address policy problems such as stress. In the case of police officers and their weight, I researched which policies and habits yielded the ideal body weight and stress levels to develop a program that encourages more police officers to operate at this fitness level. Chapter 2 will explain the ideal type theory in greater detail. The research questions and relationship between BMI and stress was grounded in this framework.

Nature of the Study

My quantitative survey research tested the stress-coping theory and applied the ideal type theory to policy construction by gleaning police stress survey data from South Florida police officers. Determining the power and direction of the relationship between body weight and stress of officers via survey data comprised the analysis. I administered a survey to volunteers solicited

through bulletin board postings and professional department emails. A multiple linear regression analysis assessed how officer body weight is related to officer stress.

Measurement and Materials

My research determined the interplay between BMI and officer stress if any. A comparison of the officers' survey data fulfilled this goal. This project required controls for accuracy; I calculated BMI uniformly for all volunteers. Stress was the dependent variable. BMI was the independent variable. The literature review discussed additional covariates, such as rank, shift work, seniority, gender, sex, and marital status in more detail. The following protocols comprised the investigative survey procedure:

I reliably measured body weight and height of each volunteer. Participants completed the Likert scaled police stress survey, measuring psychological self-reported stress. Data was collected from subjects using these stress surveys, and I entered it directly into the statistical package for social sciences (SPSS). This software package analyzes statistical data. A multiple linear regression analysis was the primary statistical analysis used to determine the relationships between these variables.

Definitions

I identify variables and other terms used in my study here. I employed the following definitions for this research:

Body Mass Index: A calculation derived from a person's weight in pounds divided by the square of height in feet. This value index determines if a person is at a healthy weight, overweight, or obese. The body mass index value for a healthy weight is below 25 (< 24.9; CDC, 2017). This assessment is used to group people into classes, but it is not exhaustive regarding the total health of a subject. BMI is the independent variable in this study.

Burnout: The body's inability to adequately cope with continued stress (Wang et al., 2014). Stressors without a problem-reconciling response or successful coping in some form result in prolonged stress. Burnout is synonymous with anxiety (Lazarus & Folkman, 1984). Everyday stress is not to be confused with post-traumatic stress syndrome (PTSD), which is a prolonged condition of residual anxiety usually due to a single large-scale stressor event.

Certified Police Officer: A person who holds a state certification for law enforcement. This person is authorized to enforce laws, typically carries a firearm as part of their duties, and protects citizens as well as upholds the constitution. In my research, certified officers include correction, patrol, probation, and federal personnel.

Obese or Obesity: A condition where the body weight of an individual is significantly above the healthy weight recommended by the BMI formula. The BMI value for obese individuals in the United States is 30 and over (BMI +30; CDC, 2017).

Occupational and Organizational Police Stress Questionnaire: A two-part survey tool specially created to measure the stress of police officers (McCreary & Thompson, 2006). It features 20 questions, rating police officer occupation and organization-specific stressors as an ordinal variable based on a Likert scale.

Overweight: A condition where the body weight of an individual is over the healthy weight recommended by the BMI. The BMI value for overweight individuals in the United States is over 25 and under 30 (BMI = 25.0 - 29.9; CDC, 2017).

Rank: An organizational hierarchy where the participant identifies as an employee, line supervisor, middle manager, or administrator for the agency. Zachar (2004) said rank might decrease stress. Rank was a control variable for this study.

Seniority: Also referred to as time in the current career, in the context of this study, this is how long a participant has been working as a certified police officer. Wang et al. (2014) found time in police service to impact stress negatively. Seniority was a covariate for this study.

Shift Work: A schedule of labor where the employee does not work standard Monday through Friday daytime hours. Shift work usually encompasses working weekends, holidays, and night shifts, and also includes any on-call status. On-call status is where the employee is subject to work recall during their off-

duty time (Gerber et al., 2013; Wirtz & Nachreiner, 2012). Shift work was a covariate for this study.

Stress: Any common or uncommon stimulus, physiological or physical, that causes a mental change or response in a human. The most dangerous change is usually adverse and can include the most common daily hassles which deplete the ability to function correctly (Lazarus & Folkman, 1984). Stress is virtually synonymous with the term burnout in this study. Stress was the dependent variable in this study.

Assumptions

Certain assumptions are necessary for my research. This project assumed a law enforcement agency would undergo whatever steps are necessary to safeguard its officers from all threats, external and internal. Additionally, I assumed that investigating the relationship between BMI and stress may create an ideal state to construct public policy to protect officers. Furthermore, my research assumed a level of trust between police officers and the law enforcement agency. The transactional model of stress and coping may be applied uniformly to law enforcement officers as well as other populations to cope with stress. The police stress questionnaire survey for this project has external and internal validity for measuring police occupational stress and operational stress. Based on the internal validity of the project, I assumed officers who participated in my research project will be thorough in their assessment of present stress and will answer the

operational and occupational stress surveys honestly. I assumed those officers who participated in my research project were truthful with their answers assessing stress and disclosing demographic information. Based on external validity, I assumed the sample population of police officers who volunteered for this study are representative of the greater population of police officers from South Florida. These assumptions were necessary for this research to ensure validity and reliability and attain generalization of my research findings.

Scope and Delimitations

Excessive body weight in law enforcement is a validated problem affecting 80% of officers (Bonauto, Lu, & Fan, 2014; Hostetter, 2007; Loux, 2015; Shell, 2005). Controlling body weight is feasible. My research focuses on body weight, mainly because it can be controlled and may influence stress; although conversely, stress may also influence body weight (Berset et al., 2011). Officer stress is virtually uncontrollable by the nature of the occupation but might increase or decrease body weight. This research addressed these delimitations. For internal validity, the population of police officer survey participants may not be representative of the universe of police officers in the United States. External validity limitations addressed specific research techniques, and assumptions were employed in my research design to maximize generalizability. However, foregone conclusions cannot be guaranteed when extending my results to other similar populations. In construct validity, the delimitations are that the variables are

adequately defined, and the measuring tool for stress is as accurate and validated as I researched it. Delimitations regarding covariate variables are that numerous variables were identified in the literature review and considered for this project. It is unknown how many more variables might have impacted these main study variables.

Research Population

Male and female officers comprised the survey population from a midsized police agency in southern Florida with roughly 1,000 certified officers employed total. A volunteer sample made the participants in this research of certified police officers. The participants were solicited through their agency via bulletin board postings and professional email, providing a valid cross-section of the agency. One-hundred and three officers fulfilled the preliminary G*Power requirements for a multinomial two-tailed linear regression analysis. I will discuss the analysis further in Chapter 3.

I reviewed the coping resources inventory for stress developed in 1993 for use in this study. However, the Police Stress Questionnaires are more thorough in stress ratings and better suited due to their specificity towards police officers, and their rigorous and more recent development than the coping resources inventory. I also considered the Overall Satisfaction Scale, the Malasch Burnout Inventory, and the Depression Anxiety Stress Scale tools; however, I dismissed them due to their lack of specificity towards police officer stress.

Limitations of the Study

By the nature of the cross-sectional design, there were some inherent limitations. Regarding the research methodology, my research project had the following limitations. Differences in culture exist, and I did not measure them in this investigation. Responses to the Police Stress Questionnaire will be self-reported and may contain prevarication bias. The environment may also play a part in this investigation; however, I did not consider in this project. This project was limited to officers in a medium sized police agency in South Florida. Participants may not fully understand their stress and how to measure it on the Likert scale. No one can know how much the subject's behavior was compromised or affected by the researcher's participant-observer presence. The behavior of police officer participants in South Florida may differ significantly from any other police officers in the universe of police officers. No one can know how many other variables may impact stress.

Sampling Process

I used a single stage cross-sectional stratified sample to create logical inferences about the behavior of this population. I collected subject information via the stress survey questionnaires. Subjects completed self-evaluations of their conditions, rating their levels of stress on the appropriate Likert scales. The anonymous nature of the study controlled for external factors that could influence respondents' answers, such as fear of how the agency or I would perceive them. I

conducted sampling by soliciting volunteers and stratifying the sampling to match police agency BMI group proportions.

Data Collection Management

I managed the data collection regarding subject BMI and stress levels and was the sole administrator to keep confidentiality. No one else had access to the data or summary. The data collection and storage were under my sole control. A standard informed consent form, specific for my project was part of this research, compliant with all relevant human subjects' ethics and requirements.

A Likert-type scale is a standard tool for investigation. This form of survey is simple; using it to survey officer stress is straightforward and logical. The Likert scale queries participants to decide on questions with answers that range from Strongly Agree to Strongly Disagree (Oddgeir, Martinussen, & Rosenvinge, 2006; "The Likert Scale," 2014). Since I used a pool of at least 100 police officer subjects who volunteered for this study, this favored a stratified sample. This sample included BMI grouping stratification to represent actual body weight groups of the population.

Significance of the Study

Law enforcement is a stressful career (Liberman et al., 2002; McCarty et al., 2007; McCreary & Thompson, 2006). Overall, police officers are subject to higher levels of stress than other types of employees, which can further negatively affect BMI levels (Berset et al., 2011). Leaders can improve officer performance

by developing public policies for recommended BMI restrictions; my research can inform such public policy formation using concrete data. Jaramillo et al. (2005) researched police officer stress and discovered how internal stress negatively affects police officers at the organizational level in regard to reduced performance. Officers' intention to stay with the agency or seek employment elsewhere is based on stress as well. Experienced officers of high tenure are the victims of even higher levels of stress. Zachar (2004) recommended stress management programs and other creative interventions to provide relief to officers. As stress increases, officer performance will decrease (Chikwem, 2017; Shane, 2008). Over 50% of officers believe agencies should sponsor a fitness program, and more than 50% of police rate fitness for officers as very important (Haberman, 2012; Lee, 2003).

Significance to Theory

The application of the transactional stress-coping theory to law enforcement may further advance best practices regarding coping with stress for police. The theory purports a problem-oriented response to stress will resolve the strain. As a weight loss program is a problem-oriented response to being overweight, according to this theory, weight loss is predicted to reduce stress. My research intended to test the theory deductively to further impact an ideal state of public policy for law enforcement. When police administrators accept police officers are susceptible to the troubles and stress of police work, this may

motivate law enforcement agencies to search further to establish policies to increase health and combat those stressors of the profession.

Testing the transactional coping theory sufficed in correlating high BMI values with the effects of stress. Recommending policy solutions without research and evidence on the detrimental effects of stress and high BMI values will have little influence on police policymakers. Deleterious effects of stress and coping among police officers include alcoholism, domestic violence, sex addiction, suicide, divorce, and even simple stress avoidance (Arter, 2008; Violanti et al., 2011). Public policymakers must make informed decisions to design and guide public agencies, and the results of my research based on these theories will aid in public policy creation in that capacity. The utility of both theories is complimentary and increases social change opportunities from wellness and policy perspectives.

My research served to elucidate the unhealthy strategies that police officers may exploit in their dealings with weight and stress. The significance of my research was to fill a gap, from policy absence and the need to incorporate wellness programs. Law enforcement officers alternate uncertainly between moments of high anxiety and trauma to prolonged stationary phases with little or no activity (Stoughton, 2015), which magnifies their need for public health policy. Roughly 80% of officers are overweight (Bonauto, Lu, & Fan, 2014; Hostetter, 2007; Loux, 2015; Shell, 2005), and developing a policy to encourage officers to

maintain healthy BMI may have various positive ramifications. The relevant results of my research study will be made available to program makers to explore policy implications further based on an ideal type of theoretical strategy.

Significance to Practice

Police officers and agencies, as well as the entire public, have a vested interested in reducing stress and BMI for law enforcement. In 21st Century law enforcement, technology has advanced the way officers perform their duties, but the stress remains. My research proposed policy advocacy for healthier officers. To ignore the effects of stress and its adverse impacts on law enforcement culture indicate misuse of human capital (Neely & Cleveland, 2013). The paradigm of law enforcement administration must shift to discuss, openly treat, and address this problem of excess weight and stress in officers. My study informed law enforcement administrators and public policy makers as to how they can propose programs and guidelines to safeguard police officers from harmful outcomes of being overweight and not managing stress. Law enforcement must grow and change as scientific research into existing factors of stress directs new options for best practices, especially regarding the relationship between stress and obesity.

Significance to Social Change

My investigation into officer body weight and stress had many potential implications. Decreased stress increases officer health and productivity (Boyce et al., 2014; Can & Hendy, 2014; Chen, 2009; Neely & Cleveland, 2013). Lower

stress may further offset the adverse impacts, which would provide twofold health benefits of increased job performance and improved officer health. Overweight employees increase individual health insurance claims, have lower productivity, and burden the entire agency with increases in health care costs (Ackerman, 2013; Bartels & Nordstrom, 2013; Blair et al., 1996; CDC, 2017; Van Nuys et al., 2014). Controlling BMI could lead to improved mental and physical health among police officers, yielding improved productivity, fewer officer injuries, reduced use of sick time, and a more disciplined self-image among police officers (Chikwem, 2017; Satterwhite, 2000; Thomas, 2003).

The positive social change resulting from my project could have far-reaching implications for police officers and American society. With numerous documented and well-researched advantages of losing weight, police officers stand to benefit from this research. Stress has long been well documented as a harbinger of depraved health, burnout, and poor work decisions or judgment (Can & Hendy, 2014; Chen, 2009; Finney et al., 2013; Gilbert, 2010; Kyle, 2008). It is likely that stress is one obstacle that impedes many worthwhile law enforcement goals. Thus, best practices for ensuring a standard BMI value among police officers could lead to positive social change impacting not only the police officers of South Florida but nationwide, as well as the entire public they serve. Building trust between the American communities and police officers may begin with problem-oriented stress solving responses with law enforcement officers.

Summary

This chapter identified the background, problem, and purpose of this research project, proposing a relationship between being overweight and officer stress. My research questions are grounded in the transactional stress-coping theory and the ideal type theory and are explicitly aimed at investigating the relationship between BMI and stress to develop, inform, and suggest policy. The Police Stress Questionnaire is a valid and reliable survey that was the selected instrument for this research, which has been tested and used in numerous other scholarly studies

As police officers continuously train to ward off outside threats, they silently allow stress to negatively impact them internally in many ways, both known and unknown (Can & Hendy, 2014; Chen, 2009; Finney et al., 2013; Gilbert, 2010; Kyle, 2008). Though the general public understands the basic principals of law enforcement, the best practices regarding the relationship between being overweight and officer stress levels are not so well understood. The transactional stress-coping theory can be applied to law enforcement as much as any other population or occupation to resolve stress and direct policy. This theory tested on police personnel can influence public policy based on an ideal type of policy.

Chapter 2 presents an overview of current research on the detrimental effects of stress. This chapter details scholarly studies of stress in general while

maintaining a focus on police officer weight and stress. High values of BMI and their effects are the subjects in the literature review. I will also discuss research experiments and studies conducted to reduce weight or increase stress management. High BMI values lead to high blood pressure, increased chance of heart attack, and can lessen the human lifespan (Bartels & Nordstrom, 2013; Brevard County Sheriff's Office, 2011; Lasikiewicz et al., 2014; Randle et al., 2012). I investigated both stress and the overweight human condition to add to this body of research.

Chapter 3 addresses the methodology and research design of this project. It further explains the survey tool chosen to measure stress in detail. The participants, settings, sample, and sample size are each described in Chapter 3. Chapter 4 includes the results of my research. Chapter 4 describes the analytical processes used to explain the results of my study. Chapter 5 provides an in-depth discussion of research findings, application of results, and policy changes including conclusions and considerations for social change.

Chapter 2: Literature Review

Introduction

With wellness and officer safety issues at stake, the main purpose of my quantitative project was to cultivate sound informed policy options for controlling body weight and possibly stress management, grounded in the stress-coping and ideal type theory. This research sought primarily to encourage policy creation by examining the predictive relationship between BMI and self-reported organizational and operational stress among police officers. Occupational type stresses differ according to the nature of the labor involved in each profession. Law enforcement is considered one of the most stressful occupations (see Arter, 2008; Can & Hendy, 2014; Chen, 2009; Dean, 2014; Finney et al., 2013; Gilbert, 2010; Kyle, 2008; Liberman et al., 2002; McCarty et al., 2007; McCreary & Thompson, 2006; Neely, 2011; Neely & Cleveland, 2013; Selokar et al., 2011; Smith, 2013; Watery & Ussery, 2007; Wang et al., 2014; Yoo, 2007).

As a result, occupational stress is thought to put law enforcement officers at very high risk for mental and physical health problems including multiple cardiovascular type diseases (Corrales, 2013; Mark & Smith, 2012). The problem is that no policy is in place to mandate stress, wellness, or body weight standards for officers in Florida and this void can contribute to officers' overall stress load. Thus, it is essential to identify the various and associated factors contributing to their stress, how it affects health, and to theorize correlations with BMI. This

literature review introduces the theoretical backgrounds and empirical evidence regarding occupational stress and its effects on health and wellbeing in the context of policy application. Importantly, there was a focus on the relationship between occupational stress and BMI as the driver of poor health outcomes.

I present an overview of the literature search strategy in this chapter. The review has three major sections. The first component is a background on modern police training, policies, and its deficiencies addressing occupational stress and wellness strategies, as well as relevant research related to officer lifespan. The second portion elaborates on the framework of ideal type policy implementation using a second complimentary theoretical foundation of stress-coping and the application of coping strategies to my project. The final component reviews BMI, its relationship to stress and well-being if any, and the impact of wellness interventions on stress levels and BMI, including best practices of some other agencies in Florida.

Literature Search Strategy

The focus of the literature search was on law enforcement fitness policy and associated occupational stress, the ideal type framework, stress coping theory, stress relief strategies, and the effects of stress, especially on physiological functions like body weight regulation. Google Scholar, PubMed, academic dissertations and theses relating to the topic, ProQuest, Legal Trac, EBSCO Host, SAGE Journals, LexisNexis, Business Source Complete, ERIC, CINAHL and

MEDLINE, Nursing and Allied Health, and PUBMED were all databases used with the following keys terms: *stress*, *police stress*, *obese stress*, *officer stress*, *anxiety*, *officer anxiety*, *police weight standards*, *work stress*, *police stress coping*, *police stress overweight*, *overweight stress*, *employee stress*, *employee weight loss*, *BMI stress*, *stress absenteeism*, *occupational stress*, *police*, *health standards*, *overweight police*, *stress and coping*, *stress and BMI*, *police and anxiety*, *weight loss and police*, *occupational stress*, *police stress management*, *stress reduction and police*, *weight reduction and police*, *obese effects*, *police wellness programs*, *stress coping theory*, *reduce police stress*, *wellness and police*, *police and sick*, *copying and police*, *police intervention*, *ideal type theory*, *police policy stress*, *McCreary stress theory*, *employee obesity*, *workplace stress*, *obese discrimination*, *officer life expectancy*, *Lazarus stress coping*, *ideal state theory*, *wellness policy*, *police fitness standards*, and *weight program*.

An exhaustive search of scholarly peer-reviewed articles was conducted through the Walden University library using multidisciplinary databases. The literature search focused on peer-reviewed publications dated between 2012 and the present. However, for some topics, earlier publications were used due to their substantial academic or historical value. Less academically rigorous online resources such as news articles were used sparingly to punctuate examples and discussions. I also used several unpublished papers at the masters and doctoral level authored by scholars and veteran police officers where few if any, articles

existed on particular topics. Several databases returned only a few articles related to the study topic. Combining Boolean operators and the appropriate keywords with Google Scholar proved to be a valuable and powerful technique.

Background

Professional law enforcement in the United States had significantly evolved from the informal and voluntary watch system initially used in burgeoning American cities up until the mid-18th century when city populations increased. Paid police forces became organized in cities during the 1850s as America populations grew (Grant & Terry, 2012). However, depending on geographical location, police services, and governing laws varied considerably. Policing struggled with corruption and decentralization and lacked standardization until the mid-1900s. The maturing profession of law enforcement in America transformed throughout the 1960s with civil rights rulings favoring citizens' rights, and the majority of departments began to require prospective officers to have at least a high school diploma (Grant & Terry, 2012).

Law enforcement since the 1970s had become codified with a consistent set of policy guidelines, general rules, a code of ethics, and professional accreditation standards. Health and fitness standard for officers became incorporated in the 1980's only to be minimized or eliminated in the 21st Century. The profession of policing is currently a widely accepted and practical career occupation in the United States (Grant & Terry, 2012). Despite such advances,

modern law enforcement faces the formidable problem of mitigating the ”incredible stress police officers face based on their decisions and the tragic outcome of not dealing with such stress” (Grant & Terry, 2012, p. 98). The Florida Department of Law Enforcement (FDLE) enforces the standards for all police officers in Florida set by Florida State Statue 934.13. According to FDLE (2017), there are no physical fitness standards for police officers in Florida. A short obstacle course, called (PAT) is the only physical requirement a perspective officer need accomplish when in the academy, without any subsequent testing after the academy. Therefore, research was needed which investigates occupational stressors among law enforcement personnel. This research suggested policy advocacy for police training regarding health and wellness to deal with stress in hopes of minimized related psychological and health problems.

Training Prospective Officers

Law enforcement organizations and academies have neglected training recruits in health and wellness as well as how to manage stress. Agencies train for job-related skills but “…less concern has been directed to mental health and resiliency, proven tools for survival” (Water & Ussery, 2007, p. 173). Applicants are trained in rigorous and standardized curriculums nationwide which focus on skills such as emergency driving, firearms, defensive tactics, and procedural conduct in criminal law (Grant & Terry, 2012). Officer safety training is also emphasized heavily in training (Stoughton, 2015), but that training only

incorporates very modest amounts of information on coping skills for occupational stress specific to police work (Hostetter, 2007; Shell, 2005). Where police academies in Florida have physical ability tests, agencies have minimal fitness values, if any.

Additionally, Patterson et al. (2014) noted that police recruits begin to suffer stress in just their first year. Because stress is a common and pervasive factor in the day to day activities of law enforcement, the importance of training and policy for stress-related mental health concerns would be beneficial to both officers and recruits alike. A more thorough policy and awareness of the contributing factors for stress may alleviate the psychological impacts of persistent stress. Organizational and systematic stressors accumulate and cause more anxiety than single massive traumatic events in policing (Corrales, 2013).

Candidates who study police training at a formal college, as well as the police academy, are often unaware of the harmful effects of poor health compounding occupational stress and are not prepared to deal with their health or stress. Schmalleger (2013) ranked police work in the top ten most stressful occupations but only addressed the subject of stress in two pages of the 600-page text. Conser, Paynich, and Gingerich (2013) published an introductory criminal justice textbook of over 400 pages long, in which less than six pages cover police stress. These authors only superficially elaborate on the consequences of increased stress in policing. Stress can culminate in poor officer decision-making,

low job effectiveness, and negative health outcomes (Chikwem, 2017). Poor decisions related to increased stress can destroy public trust as well as open the agency to costly civil litigation. Conser et al. (2013) recommended officers sought stress reduction techniques but provided no specific strategies to accomplish this. As a public entity, policy needs to be developed to protect officers from stress.

Police Officer Life Span

The health effects of stress and obesity led to a dramatic increase in mortality in law enforcement populations (Brevard County Sheriff's Office, 2011). In Florida, law enforcement officers were found to have a significantly shorter average lifespan compared to the general population (see Figure 1).

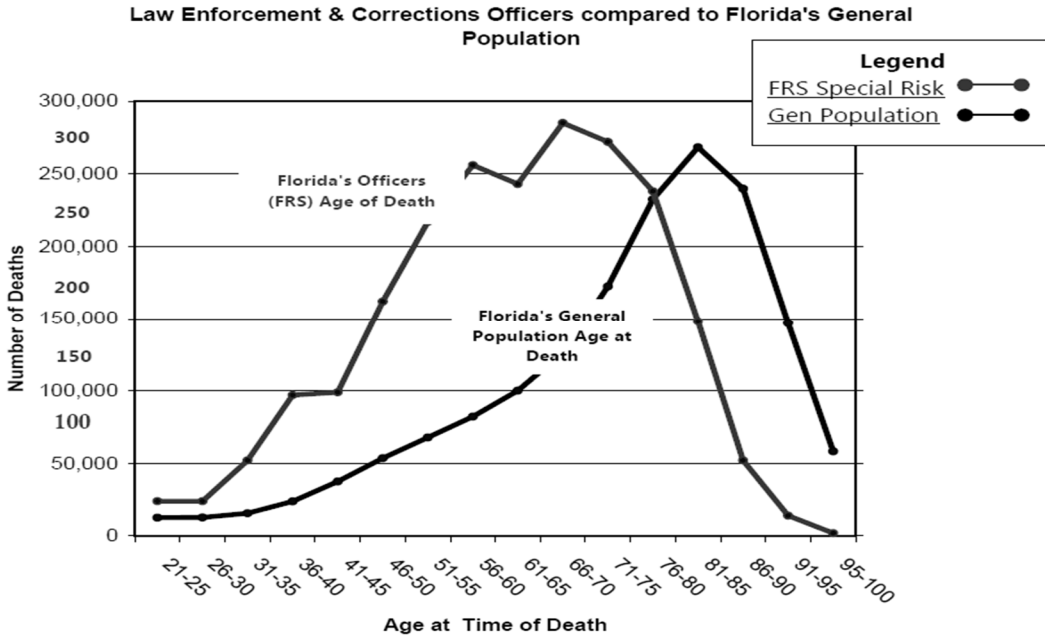

Figure 1. Graph Comparing Florida's (FRS) Law Enforcement and Corrections Officers with Florida's General Population regarding the age of death. Adapted from "Florida Mortality Study: Florida Law Enforcement and Corrections Officers compared to Florida General Population" by Brevard's Sheriff's Office 2011, Sheriff Jack Parker.

Ramey, Downing, and Franke (2009) agreed; they found that even once retired, officers (*n = 165*) are 11% more likely to be overweight or obese and have a 9% greater prevalence of cardiovascular disease than the public.

According to FRS data, retired officers in Florida have a life expectancy of 62.47 years old, while other Floridian retirees were found to have a life expectancy of 74.21 years. The report describing this 19% disparity cites a variety of occupational stressors in law enforcement as significant contributors to the reduction in life expectancy as well as other health factors. The Florida Retirement System supplied the data quantifying this report from 2000-2009 (Brevard County Sheriff's Office, 2011). An older study analyzing data from 1950-1990 similarly showed that retired male police officers had a life expectancy of only 66 years old (Shell, 2005). When leaders first began to address police stress in the 1970s, even 50 years ago, administrators acknowledged that police officers died younger than people in other occupations (Dean, 2014; Water & Ussery, 2007). Violanti et al. (2013), studied life expectancy of male police officers versus men in the general population of Buffalo. Officers had a 21.9-year decreased life expectancy compared to men in the general population. The study authors cited stress, shift work, obesity, and personal safety risks at work as causes for this lifespan disparity (Violanti et al., 2013).

The prevalence of stress and health problems, like obesity and physical disability, has increased steadily together in law enforcement (Corrales, 2013;

Patterson, 2009). Studies have also shown that officers have increasingly poorer health and fitness metrics the more years of shift work performed (Wirtz & Nachreiner, 2012). These findings suggest that causes of decreased life expectancy in police officers cited by Violanti et al. (2013) may be inter-related and inter-dependent.

Lack of fitness and a sedentary career negatively impact the lifespan of officers without a protective mandate (Haberman, 2012). In one study by Richmond, Wodak, Kehoe, and Nick (1998), 83% of nearly 1000 police officers surveyed had at least one unhealthy lifestyle habit, which also negatively affect police mortality rates. Those unhealthy habits were categorized as alcohol usage, tobacco usage, low physical activity, being overweight, and reduced stress management (Richmond et al., 1998). Overuse of alcohol is one such unhealthy habit. Richmond et al. (1998) suggested that police officers in general, have low overall health ratings and tend to overindulge in alcohol, which has significant professional and health repercussions. Richmond et al. (1998), as well as police veteran Haberman (2012), recommended law enforcement agencies encourage more robust health standards for officers and provide interventions and policies that will reduce even one of these five unhealthy habits, if not address them all.

Stress Coping Theoretical Foundation

The coping process theory, also known as the transactional model of stress and coping theory was introduced in 1984 by Lazarus and Folkman, who built the

theoretical foundation in their book, *Stress, Appraisal, and Coping*. This theory has been researched and used extensively in various fields of scholarly studies since its origin and is widely accepted (Goh, Sawang & Oei, 2010). Although many theories on stress exist, Lazarus and Folkman (1984) considered the gamut of varying reactions to stress and offered elucidation based on two factors. According to this theory, the causal coping factors are human and situational, which have an interplay with the individual, possibly resulting in stress. Human factors such as self-confidence, commitment, social structure, and perceived control of the stressor play a part in assessing the stressor event. Situational factors influencing coping in this theory are the events, resources, and limitations. When these variables are combined, they offer some clarity in differences between individuals and their ability to cope with stress, which is lacking in other stress theories (Lazarus & Folkman, 1984; Shirley, 2013).

The stress-coping theory provides insight into managing stress, which applied in law enforcement, is pertinent to understanding their actions and responses. The severity of how dissimilar officers may cope with stressor events relates the theory to policy formation for my weight comparison and stress study. The theoretical framework is such that it accounts for human and situational factors that influence threat assessment as well as covariates such as rank and age, which also impact coping success ability (McDonald, 2013). The theory describes and is the most suitable coping theory to understand the processing and appraisal

of psychological stressors based on stress management abilities, which vary from person to person. Stress appraisal and response mechanisms typically involve reviewing the problem, devising solutions, choosing a solution, and taking action (Chan & Ward, 1993; Kakar, 2013; Shirley, 2013). This complete appraisal cycle is termed "coping" and varies by personality and personal resources and continues until the person resolves the stressor. If not resolved, anxiety difficulties arise. Coping is the evaluation process between the event and reaction to it (Lazarus & Folkman, 1984).

Lazarus and Folkman (1984) recognized several negative responses to unresolved stressors, including depression, blame, and anger. Using the example of responding to an audible fire alarm, the authors noted that people react differently according to how directly they assess the threat. Appraisal of the threat involves deciding whether it is "irrelevant (no value), benign-positive (enhances well-being), or stressful (threat or challenge)" (p. 32). If the stressor is irrelevant or positive, it requires no further re-assessment; the person disregards the stressor as a negative threat. An example of an irrelevant stressor is one in which the actor has no vested interested in the outcome, and ultimately the results will not affect them. Positive stress appraisal is when the stressful event is "punctuated by joy and happiness" (Lazarus & Folkman, 1984, p. 33), such as a job promotion or birth of a child.

When recognizing this alarm as a negative stressor, the person perceives it as a threat or a challenge. Once identified as a stressor threat or a challenge, a secondary appraisal occurs to evaluate what can be done to resolve or eliminate the source of stress. A challenge is an experience which the individual believes can be overcome and controlled with coping; however, such a method cannot overcome the stress. The outcome of a threat is stress. Responses usually arise in the form of emotional or cognitive problem-solving responses. The secondary appraisal is involved, and if the candidate is unable to formulate a cognitively adequate solution, an overly negative emotional response occurs. Not dealing with the stressor leads to eventual emotional exhaustion. Stress has deleterious physiological effects and can lead to a runaway emotional, and not necessarily rational, response. A problem-solving approach, with minimal emotional influence, is one more likely to reduce the perceived threat or stressor (Lazarus & Folkman, 1984). This theory applies to various vocations and disciplines. For example, if being overweight predicts stress in police officers, then losing weight is a prospective problem-oriented solution in coping with an overweight condition and therefore will relieve stress. The results from testing this theory can inform policymakers for the importance of a wellness policy.

The lingering outcome of unresolved stress also includes anxiety, which constitutes a negative psychological and physical burden. A threat is recognized solely as a negative stressor and usually requires a full commitment of mental and

physical resources to cope with it. Multiple or repeated significant environmental stressors increase an individual's anxiety load (Lazarus & Folkman, 1984), while ineffective coping strategies can compound stressors and lead to chronic anxiety (McCarty, Zhao & Garland, 2007). Previously comparable studies regarding stress research have applied this theory as well.

Literature on Stress Coping Theory

Previous researchers have used the transactional stress-coping theory. Researchers applied this theory to stress and coping research in their respective fields, including law enforcement (MacDonald, 2007) and public administration (McDonald, 2013). For example, Kakar (2013) used the framework of stress coping theory to describe the relationship between gossip in the workplace and occupational stress among actors. Milen (2005) used the stress-coping theory to study how firefighters cope with stress, recommending that agencies incorporate a psychological and physiological program to assist employees in stress management. Edge and Ivey (2012) found that actors will attempt to resolve a stressor if it is a safety threat by formulating a primary and secondary assessment, which is a continuous process, until such time the stress is rendered inert. They found that first appraisal of stressors is individualistic and vital to each person's strong coping ability.

In a medical research project studying stress management, Chan and Ward (1993) summarized the theory succinctly: people encounter stressors, they are

then appraised as a potentially viable threat. Once a person interprets a stressor as a potential threat, actors will attempt to resolve the perceived stressor event with either a problem or emotion-oriented solution. The coping process necessitates identifying the stressor as a problem, formulating coping strategies, selecting a resolution, and acting (Chan & Ward, 1993; Shirley, 2013).

If the resolution of the problem fails, the lingering result is continuing stress or anxiety. Elevated BMI of officers is a stressor which can be solved by a problem-oriented approach or an emotional oriented one. An emotional approach does not resolve the stressor whereas the problem-oriented approach is a rational solution to the problem and will solve with the stressor. The process of appraisal, stress, and subsequent coping continues over time for each stressor (Goh, Sawang, & Oei, 2010; Lazarus & Folkman, 1984). I tested this theory deductively as my project assumed that BMI levels are related to stress in some manner in officers. The problem-oriented solution of having a healthy weight should have resolved the "body weight" stressor, based on this theory. An association between BMI and stress implied that if BMI goes down, then stress is lowered, and stress management will be improved. The converse may also occur, as a person loses weight, it could create increased stress.

Therefore, I assumed the higher the level of BMI, the higher stress levels were, and conversely, reduced BMI correlated with improved stress management and lower stress levels. In this theory of stress and coping, if a stressor was not

dealt with successfully, the result is the manifestation of increased and continuing stress (Lazarus & Folkman, 1984). The theory places importance on the dynamic nature of stress management. The challenge of stress and coping is ever-present, especially in the work lives of police officers. As such, police officers must be continually involved in a cognitive exercise to analyze potential stressor events and arrive at a resolution that will allow them to experience a positive effect and successful coping decision. If a problem-oriented response of lower BMI revealed lower stress, then developing a stress policy could regulate an officer's behavior based on the testing of this theory.

Thus, this was an interpretive approach to the psychological experience of stress that places great emphasis on the individual's ability to engage in stress management for accessing improved levels of coping. As such, it is understood the process of stress and coping may be alive, interactive, and continually in a problem-solving mode (Lazarus & Folkman, 1984). This individual sphere that must always be committed to stress management is never absent or unaccounted – it is an intrinsic and inherent aptitude of the human mind that has allowed humans to become the most adaptive creatures on the planet.

This theory of stress and coping was germane to law enforcement and public policy as officer's deal with a variety of stressors in their daily duties. Learning a positive problem-oriented response will solve a stressor, officers could apply this approach in their lives and duties as well. In this way, it could be

understood the stress and coping mechanisms of people as dynamic, self-regulating systems that are continually challenged to resolve potential threats from stressor events in the individual's life circumstance. Public policymakers and leaders can immediately begin to comprehend the value of learning and educating the individual as to the best practices that might be associated with active stress and coping.

In other words, this is not a passive system in the human experience. The stress and coping system, and the ability to invoke successful stress management in the face of deleterious stressor events is a critical component in the successful indices of a person's life satisfaction, quality of life, and work proficiency (Lazarus & Folkman, 1984). All of this is another way of saying that science can assist people to learn more about stress and coping, and that is arguably something that could benefit all individuals, law enforcement, and society. Officers stand at the forefront of problem-solving in their profession and their own daily lives. Increasing officer's ability to handle stress has far-reaching positive implications.

Coping Strategies

Perception of threats and challenges vary in every individual and group. That is, subtle differences in exposure to stressors and coping abilities impact an individual and group's overall stress management. How individuals cope with a stressor largely determines the negative or positive impact of that stimulus

(Lazarus & Folkman, 1984). Categorizing stressors and group response is imperative; a means of assessing individual stress accurately, with relevant coping strategies, can help to minimize its negative consequences. In the past, scholarly research has minimized coping skills as much of the focus has been on stressors themselves and not so much on how individuals cope with them (Haarr & Morash, 1999). However, the understanding of coping mechanisms is just as critical as understanding stressors, as it is possible to develop resilient coping strategies but nearly impossible to eliminate workplace stress.

Regarding coping strategies, scholars have found that a problem-solving strategy resolves stressors more permanently and successfully (Haarr & Morash, 1999; Lazarus & Folkman, 1984; Ortega et al., 2007). For example, when being overweight is recognized as a stressor, a problem-solving resolution would be to diet and lose weight. Alternately, an emotional response would be to construct emotional justifications for being overweight or emotionally deny the existence of a problem. In the latter case, the stressor will remain, and the temporary resolution will require emotional upkeep to maintain, which risks emotional exhaustion and create additional anxiety.

Police work is often emotionally draining (Arter, 2008), but requires officers to restrain these emotions while handling the problems of the public. On the one hand, suppressing anger has been shown to lead to mental exhaustion, which further inhibits stress management coping skills and is damaging to a

person's psychological health (Van Gelderen, Bakker, Konijn & Demerouti, 2011). Conversely, when officers employ more positive coping methods, they are less prone to antisocial or abnormal behavior (Arter, 2008). Officers possess different coping methods and capacities based on several factors, including gender, race, rank, and number of years in service. For example, Caucasian officers tend to communicate extensively and befriend others to cope with occupational stress, while African American officers rely on strong bonds with other minorities. Female officers, on the other hand, tend to have slightly higher stress levels due to coping avoidance mechanisms and personalizing events by writing down their experiences (McCarty et al., 2007).

Problem-oriented coping. This class of coping mechanisms involves an appraisal of stressors as a source of adverse emotional or physical outcomes and taking active strategies to resolve the "problem" and improve outcomes. Successful problem-oriented coping mechanisms for officers include increased communication with family, exercise, and spiritual support of religion. Another form of successful proactive problem-oriented coping is post-traumatic stress growth (Chae & Boyle, 2013). This growth is a result of meeting with mental health professionals to repeatedly discuss and relive the events that caused stress and anxiety. This method builds confidence and has been shown to expand the officer's ability to cope with past and future stressors as they "grow" from the

trauma. Officers in this form of program subsequently profess empowerment and masterful control over their stressful occurrences (Chae & Boyle, 2013).

Emotion-oriented coping. In contrast to problem-oriented solutions to stress, emotional responses to stress are often instinctual or reflexive and usually fail to offer a long-term resolution to stressors. Police officers have been found to have several inefficient and unhealthy emotion-oriented methods of coping with stress. These include self-blame, wishful thinking, and abuse of alcohol and drugs to distract from negative emotions, and avoidance of existence of stressors (Larned, 2010; Ortega et al., 2007; Patterson, Chung, & Swan, 2014; Water & Ussery, 2007). Suppressed emotions or avoidance can perpetuate the stress cycle (Water & Ussery, 2007) and many officers also turn to exceedingly complex or dark humor to cope with stress; whereas, humor is effective successfully only in the short-term reduction of stress (Kyle, 2008; Shirley 2013).

The outcomes of poor stress responses can range from relatively benign to exceedingly harmful. For example, emotional responses to stress can lead to "stress eating" which involves excessive consumption of high-calorie food (Thompson, 2004b; Zala, 2013). However, at the other extreme, emotionally maladaptive coping methods can lead to unethical and even unlawful behavior (Ater, 2008; Ortega et al., 2007).

One such coping pitfall in research that police officers can succumb to is a form of sex addiction because of occupational stress. Territo and Sewell (2012)

define sex addiction as having risky sexual relations on a constant and escalating basis. Sex addiction entails having unprotected or "unsafe" sex with little or no attempt to conceal the inappropriate activity from partners or spouses. They argue that sex addicts focus less on the sexual act itself and instead seek risky sexual encounters to display control and choice in hazardous behavior and personal jeopardy. This faulty coping technique often results in divorce, unwanted pregnancy, or unlawful activity (Territo & Sewell, 2012). Sex addiction is a plausible statistic when officers have close to twice the divorce rate of average Americans (Liberman et al., 2002).

These behaviors are more common in the law enforcement community than previously suspected. A news headline reads "A South Florida police chief was arrested for soliciting a prostitute." The 53-year-old police chief, who attempted to hire a prostitute from an online forum which listed escorts for men, met the prostitute at a hotel during off-duty hours only to discover that she was an undercover officer from another jurisdiction. When released from the jail, the former police chief spoke to the media and reasoned, "The stress overwhelmed me, and I made a very bad decision" (Flechas & Dixon, 2015). This police chief offered stress as the responsible element which led him to several poor decisions and risky behaviors, which violated both professional ethical standards and even Florida state law.

Deliberate indifference to stress is a continuing prevalent detrimental social behavior flaw and a violation where agencies fail to engage policy to correct this known conduct (Batterton, 2016). Several theories exist in modern public administration which could influence the formation of policy to address the health and wellness of officers. The public opinion theory, the job controls demands theory, and the public service motivation theory each have their merits in proposing policy directives. It is the Ideal Type Theory, however which best suits to resolve the problem and purpose of this project.

Ideal Type Theoretical Framework

Initially developed by German sociologist Max Weber (2009), ideal type theory refers to how organizations construct and implement policies that shape professional reality. However, the term "ideal" reportedly has a negative relationship with performance evaluations of individual employees. For Weber (1958/2003, 2009), an ideal type suggests that individuals have a calling to enter their respective profession. For law enforcement officers, ideal types have a unique placement within both historical and sociological reality as capable of generating results from empirical observations. Law enforcement officers may act on the belief that protecting and serving their communities takes priority over everything else when performing work-related duties (Weber, 1958/2003). Specifically, ideal types lead researchers to draw valid comparisons between the results of studies published within a single disciplinary field (Weber, 2009).

Generating empirical results from ideal type theory, thus, requires that researchers compare factors between treatment and control groups over time.

Secondly, Weber understood ideal types as having an analytical tool for upholding organizational policies. Rather than consider ideal types as belonging strictly to empirical reality, Weber suggested that organizational policies construct an exact purpose for regulating individual behavior (Whimster, 2004). Ideal types, in other words, do not suggest that employees achieve perfection regarding their general health and well-being. Here, ideal type theory applies to managerial decision-making processes that force some employees into taking immediate corrective action towards enhancing individual performance (Whimster, 2004). Ideal type theory, accordingly, allows law enforcement officers to compare current and past performance results as an empirical basis for understanding why organizational policies exist.

Weber (1949/2015, 1968/1978), furthermore, distinguished between "individual" and "general" ideal types. Where individual ideal types provide a historical reference for law enforcement officers to compare current and past performance, general ideal types pertain to how concerted efforts by law enforcement officers improve performance over time based on the decision-making processes involved with implementing organizational policies. Here, Weber (1949/2015, 1968/1978) applied the term "ideal type" as a methodology to contrast one empirical reality against another. As individuals evolve during their

membership in a professional organization, ideal types operate as a strategy for providing a historical overview of the relationship between performance assessments and compliance with organizational policies. More specific to public administration, ideal type theory applies as researchers develop an empirical view of how policymaking affects organizational dynamics (Weber, 1949/2015, 1968/1978). Ideal type theory, therefore, spurs researchers into conducting historical investigations concerning how policy shifts affect changes in performance assessment criteria and the behaviors of individual employees within a professional organization.

Lastly, ideal type theory applies to policymaking as criteria for performance assessment aligned with organizational norms and objectives. For Weber (1949/2015), ideal types have methodological significance for researchers in public administration to the extent that the results of one study produce valid comparisons for use in future investigations. However, as already mentioned, ideal types may not always reflect empirical reality. Instead, policymaking in law enforcement entails that officers must place importance on their physical and mental health to achieve positive results on performance assessments. In the following literature review applying ideal type theory to the performance of law enforcement, I draw a meaningful inference that organizational policy development should focus more closely on physical and mental health.

Literature on Ideal Type Theory

Priel (in press) presented the Weberian ideal type as a philosophical construct representing how organizational policies take on “pure” forms. In policymaking terms, ideal types bear similarity to the common law as organizational policies themselves have different empirical effects on behavior. As ideal types, organizational policies manifest into a natural state of affairs by drawing from basic concepts of logic and reason (Priel, in press). Ideal types, however, have mostly top-down functions as adherents to organizational policies find simple answers to fundamental questions about, for instance, consequences for violating codes of conduct (Sguera et al., 2016). Ideal types place structural demands on organizational functions as employees, including law enforcement officers, defining their professional role as aligned with codes of conduct. Despite having structural demands, organizations such as law enforcement agencies provide resources for professionals to collaborate and work towards correcting unacceptable workplace behaviors (Sguera et al., 2016). Here, ideal type theory applies to law enforcement, as well as to public administration, as organizations assume political neutrality.

Rothstein applied ideal type theory to explain how cadre organizations in public administration follow either a “clan or missionary" model (2014, p. 10). Clan or missionary models imply that law enforcement agencies should have clear policies that all officers must follow. Accordingly, cadre organizations do not

assume political neutrality as management requires strict adherence to formal policies (Rothstein, 2014; Van der Wal & Yang, 2015). However, ideal type theory applies differently to civil servants in countries like China and the Netherlands.

From their application of ideal type theory to compare the validity of normative claims in East Asian and Western European organizational contexts, Van der Wal and Yang (2015) found that Chinese civil servants perceived structural factors of an organization as causing failures in compliance with policies regulating codes of conduct. Dutch civil servants, on the other hand, placed considerable emphasis on the need for organizational reforms in public administration. Here, the application of ideal type theory suggests that value preferences differ culturally as Western European cultures emulate an individualist philosophy whereas East Asian cultures emphasize collective values. Ideal type theory suggests, in other words, that personal preferences often conflict with professional norms prescribed in formal organizational policies.

Along similar lines, ideal type theory applies to how professional organizations apply concepts of New Public Management (NPM) that developed during the 1980s. New Public Management emphasizes that professional organizations should consolidate policies as part of a "global public management revolution" that involves collaboration between employees (Van der Wal & Yang, 2015, p. 412). Burau (2016) noted, moreover, that while NPM allows professional

organizations to reform codes of conduct by drawing from a consolidated policy template, individual and cultural differences must provide some leverage for overcoming resistance to taking immediate corrective action that has significant long-term consequences.

Related to this study concerning how law enforcement officers may take corrective action towards reducing stress and lowering their BMI (Lacey et al., 2016), ideal type theory contributes to research in public administration by offering macro, mezzo-, and micro-level approaches (Burau, 2016; Kuehl et al., 2016; Summers-Effler & Kwak, 2015). Ideal type theory contributes further to research in public administration by suggesting that the criteria used for assessing individual performance levels in law enforcement must coincide with dietary habits, physical activity, and weight loss maintenance over time. Very few studies to date explicitly applied ideal type theory to compare the results of programs designed to reduce occupational stress or lower BMI numbers among law enforcement officers.

Ideal type theory contributes to research in public administration by advancing the goal of *verstehen*, or understanding, as an incentive for taking corrective action and improving health outcomes among law enforcement officers. Summers-Effler and Kwak (2016) suggested, however, that applications of ideal type theory in public administration fail to provide any substantive results if researchers do not offer valid comparisons of results for use in future studies.

Instead, researchers in public administration should apply ideal type theory to develop an understanding of how, for example, law enforcement officers attribute meaning to their role in a professional organization. Regarding their health, the experiences of individual law enforcement officers provide empirical support for understanding why formal organizational policies regulating conduct have considerably more substantial effects on some more than others (Sguera et al., 2016; Summers-Effler & Kwak, 2015). Formal policies regulating the dietary habits of law enforcement officers, thus, have broader implications for understanding macro, mezzo-, and micro-level differences within an organizational culture.

Importantly, ideal type theory contributes to research in public administration by offering analytical insights that link medicine and management across various organizational contexts. Law enforcement officers in less-than-ideal health perform their professional duties less efficiently and effectively (Chikwem, 2017). Burau (2016) suggested that research in ideal type theory should move beyond macro-level comparisons of health-related organizational policies to provide more contextualized and process-oriented approach for monitoring the behaviors of individual law enforcement officers. Concurrently, Van der Wal and Yang (2015) suggested that research in ideal type theory should provide more detailed comparisons of organizational dynamics within the context of formal policies regulating dietary habits and other health-related behaviors of

law enforcement officers. Overall, ideal type theory can provide researchers with a solid understanding of how management in law enforcement agencies develops policies that monitor performance levels through programs designed to regulate health behaviors.

The Consequences of Occupational Stress

Stress is a negative health determinant (Burchfiel et al., 2011). "[Occupational stress] has been recognized as a global challenge" by some experts (Kakar, 2013, p. 4), and is more important for individuals than it is for the organizations, since stress impacts employee health and productivity, decreasing the ability to contribute to the organization (Chikwem, 2017; McCarty et al., 2007). Stinchcomb (2004) wrote, "Illnesses related to stress have now replaced infectious disease as the leading cause of death" (p. 259). Stress also places increased demands on the cardiovascular system and inhibits the body's immune system, rendering it more susceptible to illness (Huang & Acevedo, 2011). Stress is also responsible for comfort eating of high-calorie foods, which can further lead to weight management difficulties (Berset et al., 2011; Zala, 2013). Therefore, identifying and resolving the stressors that lead to exhaustion, comfort eating, and reduced weight control can improve workplace performance and prevent further cycles of mental exhaustion and poor eating habits.

Both the perception of stressors as well as their acuity can lead to behavioral and psychological changes (Arter, 2008; Liberman et al., 2002;

Stinchcomb, 2004; Water & Ussery, 2007). Mental illness and relationship difficulties can result from stress and sometimes manifest as sleep difficulties, alcohol abuse, and even increased violence (Chen, 2009). Chronic exposure to occupational stress may also lead to emotional or physical exhaustion, often culminating as excessive fatigue and demoralization (Boyden, 2010; Ortega et al., 2007; Wang et al., 2014). Stress can result in excessive absenteeism, low morale, and over-aggressiveness. Mental exhaustion decreases happiness, enjoyment of significant life events, and productivity in the workplace (Larned, 2010; McCarty et al., 2007; Patterson, 2009; Selokar et al., 2011). Additionally, stress-related fatigue promotes an inactive lifestyle and compounds further de-conditioning, cardiovascular disease, and other metabolic derangements (Azagba & Sharaf, 2012). These maladaptive states can become self-perpetuating and require specific health interventions for their resolution (Larned, 2010; Selokar et al., 2011).

Stress in the Context of Law Enforcement

By and large, any job stress poses a significant social problem, yet there is even more stress for law enforcement officers than other occupations (Chen, 2009). Policing is widely considered to be one of the most stressful occupations (Corrales, 2013; Dean, 2014; Gu et al., 2013a; Julseth, Ruiz & Hummer, 2011; McCreary & Thompson, 2006; Ramey, Perkhounkova, Downing & Culp, 2011; Yoo & Franke, 2011). Occupational stressors specific to law enforcement include the need to achieve objectives, the pressure to carry out duties in an economically

efficient manner, uncertainty in police work routine as well as outcomes of work, variability in shift duration and timing, and the necessity for rapid response time (Arter, 2008; Boyden, 2010; Neely & Cleveland, 2013; Ortega et al., 2007; Water & Ussery, 2007). Police officers face scrutiny from internal and external supervisory figures, the media, the courts, and the public, which adds to occupational stress (Johnson, 2012). Police work also inherently carries a high rate of unpredictable contacts with probable violence. Repeated exposure to traumatic incidents and lack of control in these situations produces a constant state of vigilance and stress for each officer (Gerber et al., 2013; Stinchcomb, 2004; Stoughton, 2015).

Nevertheless, the obvious physical dangers and hazards of the profession are not the primary source of stressors for officers (Neely & Cleveland, 2013; Stinchcomb, 2004). The outwardly nominal factors mentioned above of routine bureaucracy, regulations, restrictions, and the hassles of daily policing cause the bulk of stress and can lead to burnout (Chen 2009; Corrales, 2013). Problems arising from police organizations can also increase stress in the day to day routine of their employees. Public demands on the police force, pressure from regulatory and supervisory bodies, and budget cuts which may result in the reduction of police forces all potentially translate into stressors for officers (Ortega et al., 2007). Finally, an additional stressor is unfairness in the police workplace. Stress can result when professional rewards are thought to be incongruent with work

efforts, or excessive criticism from superiors occurs (Azagba & Sharaf, 2012; Selokar et al., 2011).

Demographic stressors. Occupational stress levels among law enforcement personnel are influenced not only by these inciting stressors but also by demographic traits of the officers. Chen (2009) correlated the subject's age, seniority, rank, and education with stress levels. Specifically, officers between 31-40 years old, with 11-20 years of police service, and possessing a college degree comprised the central demographic average of officers who reported the highest levels of stress. Smith (2013) studied female police officers and found that they also suffer significant amounts of stress in law enforcement's male-dominated culture. Yoo and Franke (2011) supported this finding as well, reporting that female officers endure more job stress than their male officer counterparts.

Stress and suicide rate. Unaddressed stress among officers leads to an excess of problematic consequences. Police officers have 2 to 6 times a higher rate of suicide than the national average (Larned, 2010; Liberman et al., 2002). According to Huang and Acevedo (2011), more officers commit suicide than die in the line of duty; for officers, "there is a significant correlation between stress, depression, and suicide" (Larned, 2010, p. 64). In addition to these findings, Chae and Boyle (2013) identified five predictors of suicide among police personnel: traumatic incidents, shift work, alcoholism, relationship problems, and organizational stress. Stress also has been shown to dramatically

reduce the life expectancy of officers (Schmalleger, 2013; Water & Ussery, 2007).

Social effects. Police officers also have nearly double the divorce rate of average Americans (Larned, 2010; Liberman et al., 2002), estimated between 50-80% (Water & Ussery, 2007). This high divorce rate supports the research of Kyle (2008), who found that stress had a significant impact on personal relationships and family life. These findings are attributed to insufficient management of the extreme stressors of life or death situations within law enforcement (Larned, 2010; Liberman et al., 2002).

Alcohol abuse and health issues. Other psychosocial consequences of stress include sleep disorders, domestic and relationship violence, alcoholism, and posttraumatic stress disorder (PSTD). Irregular work activities and unpredictable shift work prove to be significant stressors and contribute to sleep disorders and a high rate of alcohol consumption (Gerber et al., 2013; Larned, 2010; Neely & Cleveland, 2013; Violanti et al., 2011; Wang et al., 2014; Water & Ussery, 2007). Officers are three times more likely to abuse or become dependent on alcohol than average Americans (Gaines & Miller, 2012).

Officers also have higher rates of physical health problems than other Americans. Gaines and Miller (2012) argued that stress effects heart disease and high blood pressure among police officers. Officers are also at increased risk for cancer and obesity (Larned, 2010). Occupational stress and dissatisfaction,

including working in high demand situations with low latitude for decision-making and having a poor reward for efforts, are among the leading risk factors for higher BMI among police officers (Jarali & Radhakrishnan, 2013). Occupational stress causes employees to use more sick days among emergency responders in the law enforcement profession.

Job performance. The high prevalence of occupational stress in law enforcement also causes chronic work anxiety and decreased efficiency among officers (Johnson, 2012; Neely & Cleveland, 2013). Stinchcomb (2004, p. 262) remarked that "ongoing stressors drain energy and enthusiasm," which results in less efficient job performance among officers. Stress impacts job satisfaction as well as the quality of police work (Chikwem, 2017; Julseth et al., 2011). Quality is partially dependent on personal traits; however, Tang and Hammontree (1992) studied police officers (*n = 600*) for stress levels as correlated with hardiness. Hardiness, as described in their study, is defined as possessing coping qualities such as "commitment, control, and challenge" (Tang & Hammontree, 1992, p. 494). They also examined how these factors impacted illness and absenteeism. Officers with hardiness were found to experience less stress; yet, the findings still supported a correlation between more stress and higher rates of illness and absenteeism for officers.

Deviant behavior. Arter (2008) linked stress in police work to deviant behavior by officers. On a professional level, deviance is those behaviors which

are discouraged by police culture but are not necessarily prohibited. However, these behaviors may go as far as violating professional policies and even disobeying legal standards. Examples of the former include rude behavior, fearfulness while on duty, selective or non-enforcement of laws, and sympathizing with criminals. Associated with high levels of workplace stress is more severe deviant behavior including excessive use of force by officers (Neely, 2011). This type of action reflects not only a degradation of work quality but also a violation of ethical and professional standards. Fortunately, Arter (2008) also found that officers under substantial stress resisted deviant behavior if their coping approach involved positive adaptive techniques.

Organizational stressors. Organizational stressors include public demand, bureaucratic pressure, supervisors, and budget cuts which may result in the reduction of officers due to financial constraints (Ortega et al., 2007). Work imbalance can occur due to this chronic anxiety and results in a change of attitude, behavior, and risks factors related to lifestyle (Corrales, 2013). It is the everyday hassles and slow, yet continual, daily aspects of policing which cause the main bulk of stress in this occupation leading to burnout (Chen 2009; Corrales, 2013).

To address lower productivity, Finney, Stergiopoulos, Hensel, Bonato, and Dewa (2013) studied stress and burnout in correction officers. They determined that organizational issues were the primary source of stress for correction officers

and recommended interventions to improve this problem. Haarr and Morash (1999) also recommended interventional programs to reduce officer stress. Milen (2005) recommended designing health and wellness programs for public service employees to cope with stress after a study of stress in firefighters. Interestingly, most officers do not utilize voluntary services for stress management provided by their employers, even if they are free of charge.

Boyden (2010), Dean (2014), and Gilbert (2010) utilized the Operational Police Stress Questionnaire to measure stress among police officers. Smith (2013) used both the Operational and Occupational Police Stress Questionnaires to measure stress among police officers, and the influence gender may have on stress management. This two-survey apparatus was created by McCreary and Thompson (2006) precisely to calculate the stress in law enforcement personnel. Dean (2014) and Smith (2013) concluded reducing stress is critical for officer wellbeing and recommend further studies on the topic. I will discuss these survey tools in greater detail in Chapter 3.

The Role of Body Mass Index

Body mass index is designed as a ratio of body weight to height and is a standardized measure to assess weight-related conditions in medicine and research. Body mass index is considered a continuous variable and it is also useful for classifying study subjects into underweight, normal, overweight, and obese participants. Body mass index is logistically reasonable to utilize and considered

an accurate overall measure of body fat (Phan et al., 2012). Having a BMI of less than 18 is considered underweight; between 18 and 25 is considered normal and healthy; overweight is considered 25 to 30, and a BMI over 30 is branded obese. Medical experts consider a BMI above 35 to be morbidly obese. According to the Center for Disease Control (CDC), BMI can indicate unhealthy weight and risk of developing diseases linked to being overweight and obese like heart disease (CDC, 2015).

In a study of 41 occupations, law enforcement had the second highest obesity rate (Gu et al., 2012). Increased BMI is strongly associated with cardiovascular diseases (Ramey et al., 2011). Police officers are also 1.7 times more likely to develop obesity-related diseases as compared to civilians (Ramey et al., 2011; Shell, 2005). For example, obesity is associated with obstructive sleep apnea in police officers (Charles et al., 2007). Disordered breathing in sleep leads to poor sleep quality, interrupted sleep, and insufficient sleep duration, which can affect mental health, lead to physical and emotional exhaustion and predict further weight gain (Kyle, 2008; O'Connor, 2013). Over 15% of obese workers reported emotional exhaustion, which is significantly higher than workers of a healthy weight (Proper, Koppes, Van Zwieten, & Bemelmans, 2013a). Emotional exhaustion is likely related to the fact that obesity and workplace stress have a cyclical and symbiotic relationship, with one promoting the other (Ramey et al., 2011).

Hostetter (2007) argued that "obesity is about to overtake smoking as the number one cause of preventable deaths in the United States" (p. 14). Moran (2013) identified obesity as an epidemic associated with unhealthy lifestyles. O'Connor (2013) claimed the American obesity epidemic affects military and civilian emergency services substantially; i.e., 67% to 75% of Americans in the age group of 18-24 years old are unfit for duty as first responders due to being overweight or obese. Likewise, approximately 40% of police officers are considered obese (Can & Hendy, 2014; Gu et al., 2012; Gu et al., 2013a). The prevalence of obesity in police officers is dramatically higher than other segments of the American workforce (Bonauto & Fan, 2014; Hostetter, 2007; Yoo, 2007). Over two-thirds of Americans are overweight or obese (Cawley & Price, 2013; Chalupka, 2011; Hostetter, 2007; O'Connor, 2013; Proper et al., 2013a; Randle et al., 2012; Thompson, 2004a; Wee, Davis, & Phillips, 2005; Yoo, 2007) with that number rising to 80% among police officers (Huang & Acevedo, 2011; Shell, 2005).

In the workplace, obesity also impacts an employee's productivity; associated with obesity, workplace injuries, absenteeism, increased health insurance costs, and usage impacts employers (Lim & Herrmann, 2012). Obese employees also fear they may lose their job more than employees of a healthy weight; they suffer from higher job insecurity and lower job confidence (Muenster, Rueger, Ochsmann, Letzel, & Toschke, 2011). Hutton (2012) found

that obese employees displayed higher stress levels than their healthy counterparts. Proper et al. (2013b) argued that people of a healthy weight cope with anxiety better than overweight people do. Furthermore, emotional consumption of food under acute psychological stress is associated with the behavior, sensitivity, and coping strategies of chronic anxiety problems (Alert et al., 2013; Zala, 2013).

Jarali and Radhakrishnan (2013) measured BMI and used the Professional Life Stress Scale to survey stress levels of 300 professionals, including nurses, bankers, pharmacists, and teachers. Approximately 70% of the participants had normal BMI, and over 75% of participants were found to suffer from mild stress. However, heightened stress levels correlated with increased BMI in this population (Jarali & Radhakrishnan, 2013). In that regard, occupational stress in law enforcement may contribute to the development of obesity and this may in turn increase stress in the workplace (Gu et al., 2013a). Berset et al. (2011) found occupational stress was a significant predictor for gaining weight. The unique stressors of law enforcement often drive unhealthy patterns of eating, consumptions of high-calorie foods, and limit leisure time and physical activities, which can all contribute to weight gain. Working long hours or night shifts are associated with higher BMI in law enforcement (Berset et al., 2011; Gu et al., 2012). High BMI values are particularly harmful because of police work has long

sedentary periods punctuated by short sessions of high-intensity activities in the field (Stoughton, 2015).

Proper et al. (2013a) posited that obesity and mental health issues are often interlinked and recommended wellness interventions to assist employees with both. Symptoms of depression are highly prevalent and closely linked to metabolic syndrome among police officers (Violanti et al., 2011). Linnan et al. (2012) summarized the plight of overweight employees well; "Overweight and obesity are associated with diminished health, productivity, and increased costs for employers" (p. 215).

Obesity increases mortality rates 50-100% for all causes (Poirier & Despres, 2001). Given this finding and all the other negative consequences of obesity among law enforcement personnel and the rest of the American workforce, experts recommend wellness interventions to encourage activity and reduce body weight. Shell (2005) recommended that "organizations should implement plans to redirect money to lifelong wellness initiatives" (p. 29). Significant weight loss may have psychological benefits; however, Lasikiewicz et al., (2014) reported little is known about the effects of diminutive amounts of weight loss, which can be the first step for many individuals seeking to improve their health; they recommend more research on this topic.

Weight Discrimination

In addition to a wide variety of medical and professional difficulties, overweight and obese individuals also face several social problems, including rejection or discrimination (Magallares, Morales & Rubio, 2011). Obesity is perceived as a weakness and has a negative stigma; therefore, weight discrimination can significantly damage self-esteem and self-value, and itself create stress (Lasikiewicz et al., 2014; Magallares et al., 2011; Randle et al., 2012). Negative stereotypes of overweight and obese people in the workplace are widespread. Overweight individuals are often wrongly characterized as lazy, incompetent, sloppy, and emotionally unstable. Furthermore, overweight candidates suffer discrimination in hiring, promotion, compensation, evaluations, discipline, and even termination (Bartels & Nordstrom, 2013). Obese members of the workforce have a higher rate of unemployment, and overweight employees earn 6% - 12% less than normal-weight employees. Overweight and obese employees work more hours, have more conflict with co-workers, and suffer from stereotypes of having poor work habits (Magallares et al., 2011).

Ackerman (2013) had similar findings on weight discrimination and revealed that only Michigan has laws protecting employees from such specific bias. The Americans with Disabilities Act does not yet recognize overweight and obese individuals as a generally protected class of people, but some obese

employees are to be considered disabled depending on their circumstances (Ackerman, 2013).

Discrimination in the workplace further creates psychological and physiological stress, which requires significant coping responses by victimized employees (Randle et al., 2012). Rejection and discrimination can ultimately create significant psychological burdens for the overweight and obese, and it is not surprising that increasing BMI is positively associated with increased incidences of depression.

Fitness Standards and Sedentary Work in Law Enforcement

Despite perception, law enforcement is mostly a sedentary occupation. Extended hours are spent patrolling in a vehicle or at a desk filling out a multitude of paperwork (Gu et al., 2013a; Kyle, 2008; Larned, 2010). Extended sedentary periods are a risk factor for morbidity and mortality. Powell and Blair (1994) declared that a sedentary lifestyle leads to poor health outcomes in the general population, which Yoo (2007) concurred. They said that one-third of the United States mortality rate is sedentary and because of the downstream conditions that arise out of a sedentary lifestyle. Florida requires a physical assessment for applicants as a police officer. Cadets in the academy must complete a short physical ability test (PAT) obstacle course in under six minutes and four seconds to pass the Florida physical standards (Florida Department of Law Enforcement [FDLE], 2017). Once recruits graduate from the academy, the agency who hires

them determines any further fitness requirement to maintain employment. There is no set Florida standard or mandatory requirement post-academy for officers.

Policy best practices. About half (32 out of 67) of the sheriff's offices in Florida include continuing physical fitness standards for officers in some manner (FDLE, 2017). Only seven counties' policies are mandatory. Due to changes in the law, FDLE reformed their stance of a fitness standard to a physical abilities test in the mid-1990's (FDLE, 2017; Wilson, 2014). The PAT conforms to the criteria of job task-specific abilities on an obstacle course with a pass/fail score. The test incorporates eight skills to simulate necessary police job functions. The PAT replaced the previously used Cooper standards test which police agencies widely utilized. The Cooper standards are a set of gradient and gender-specific scores for a 1.5-mile run, pushups, and sit-ups (Cooper Institute, 2017). Several agencies in Florida use the PAT, Cooper's standards, or some modification of them to maintain employment as an officer, but each agency has different standards.

One Sheriff's Office in South Florida has over 400 sworn officers including patrol, corrections and court operations (CCSO, 2017). This county tests their officers every year with the PAT. Employees receive several chances to meet the minimum time, and the agency boasts over a 95% success rate each year (CCSO, 2017; Wilson, 2014). Another Sheriff's Office in the near geographical area the first county in south Florida has a mandatory fitness policy in place. This

second county necessitates physical exams every two years and has body weight standards for officers as well as the PAT; however, the agency postponed the standards since 2012 due to budget anxieties as fitness testing can be costly (CCSO, 2017).

I examined a small municipal police agency within this same geographical area also in south Florida. This city agency has about 225 officers (CCPD, 2017) and has a fitness policy in place for their officers however this policy is not mandatory. The standard is different for gender and prorated based on age. The fitness test consists of a timed distance run, sit-ups, and a bench press standard comparable to the Cooper standards (CCPD, 2017). I explored a second city police agency in South Florida. This department has over 100 law enforcement officers. They have a mandatory fitness policy and use the Cooper standard for testing. This second agency has not yet terminated anyone for failure to complete these standards (ASPD, 2017; Wilson, 2014).

Lastly, the Sheriff's Office where I am conducting the survey does not have any fitness standards or a policy that addresses fitness. The only physical appearance policy is under the neglect of duty section in the operations chapter of the policy manual, which states the body weight of officers will be proportional to their height (LCSO, 2017). The policy does not incorporate any fitness or weight standards.

Fitness. Fitness has been shown to inoculate officers against adverse health outcomes, even in those who smoke (Gerber et al., 2013; Huang & Acevedo, 2011). Lack of fitness remains directly linked to untimely death (Blair et al., 1996). Wei et al. (1999) verified these findings on low fitness and added obesity as a specific risk factor for cardiovascular disease associated mortality. Yoo (2007) also found that associated with fitness was a reduced incidence of metabolic syndrome and stress for police officers. The interplay between stress and fitness are bi-directional, as individuals suffering from anxiety exercise less (Azagba & Sharaf, 2012; Berset et al., 2011). Stress can also lead to weight control problems and impair fitness in police officers (Berset et al., 2011). Azagba and Sharaf (2012) had similar findings, noting that occupational stressors have a significant contribution to unhealthy BMI changes.

Huang and Acevedo (2011) recommended occupation-specific fitness programs for officers to buffer against the negative consequences of weight and stress. Ironically, many police organizations have removed mandatory officer fitness standards, which compound the risks of poor physical conditioning with those of increased stress. This trend has arisen primarily because of successful litigation of employees in law enforcement against their employers (Shell, 2005). In *Bauer v. Holder* (2014), the court ruled against gender-specific standardized fitness testing requirements for law enforcement officers, citing gender inequalities on general fitness requirements that could not be directly justified by

specific occupational tasks (Gilbert, 2010). Police organizations can only enforce fitness standards which are task-specific (Gilbert, 2010; Haberman 2012). Examples of task-specific standards for law enforcement are jumping fences, sprinting for short distances, and dragging an injured person to safety. Other physical standards like a distance run may be incorporated if a correlation exists from the standard to the job-specific objective, such as sustained aerobic capacity.

The Costs of Chronic Stress and Elevated BMI

The cost of obesity to employers is significant. One study showed that an employer incurs an additional $5,000 per month in expenses to hire an employee with a BMI of 40 or higher compared to an employee with a BMI of 25 (Van Nuys et al., 2014). Tsai, Williamson, and Glick (2011) said that hiring an overweight employee versus an average weight employee costs the company 42% more.

Obese employees reported more injuries than employees with lower BMI (Kouvonen et al., 2013; Thomas, 2003). Associated with obesity is the degenerative disease of weight-bearing joints, which can impact mobility and the ability to function in an active workplace (O'Connor, 2013). Obesity also increases health care utilization for reasons beyond the realm of workplace injury and can increase health insurance costs for employers overall (Peake et al., 2012). Thus, obesity increases the burden on employers and organizations through increased expenditures to maintain a healthy workforce as well as loss of

productivity through employee absenteeism (Chalupka, 2011; Chikwem, 2017; Satterwhite, 2000). Monitoring and encouraging healthy BMI policy among employees may be prudent for employers simply from a financial standpoint.

From a macroeconomic standpoint, health care utilization related to obesity cost the United States an estimated $147 billion in 2011 and is projected to rise to $344 billion annually by 2018 (Chalupka, 2011). Health insurance premiums have doubled in the last ten years due to an increasing prevalence of preventable chronic diseases driven in part by rising rates of obesity (Churchill, Gillespie, & Herbold, 2014).

Since 1990, employees have increased worker's compensation claims by 700%, with occupational stress cited as a significant cause of loss of ability to work (Brock & Buckley, 2012). The majority (70%) of all absenteeism is linked to stress-related issues and costs the United States economy roughly $100 billion each year (Tang & Hammontree, 1992). Thus, employers bear the cost of employee stress levels, obesity, resilience, and stress coping ability of employees.

In the specific context of law enforcement, the academic literature uniformly recommends wellness program for officers to relieve stress and reduce weight. However, only a few recommended interventions are empirically validated. A need for testing and implementation of wellness interventions for stressed and overweight law enforcement personnel is necessary (Envick, 2012).

Additional scholarly studies on weight loss interventions bear further mention here.

Wellness Intervention Studies

Milsom et al. (2014) conducted a 12-week team weight loss experiment. Their goal was to assess changes in health predictor variables with weight loss. These researchers found that even with modest weight loss (5-10%), predictors of health improved such as high blood pressure. Boyce et al. (2014) also conducted a 12-week weight loss intervention at a mid-size police organization of about 1,700 employees. The team competition intervention had three to four participants on a team. Measurement of participant weight was taken at the beginning and again at the end of the 12 weeks. The teams competed against each other within and between departments. There were significant weight loss results between overweight and obese participants, despite showing little difference in weight loss between genders. The wellness initiatives employed for weight loss in Boyce et al. (2014) and Milsom et al. (2014) advocate ideal type policy in my study as best practices.

Johannessen and Berntsen (2013) showed that weight loss could modulate post-traumatic stress disorder (PTSD) symptoms. In their study, participants (n = 30) had PTSD and participated in a 16-week weight loss and exercise program. At the end of that study, weight loss and decreased PTSD symptoms were associated. Though the majority of law enforcement stress comes from everyday daily

stressors rather than singular traumatic events, the study serves as proof of concept of the inter-related nature of stress and weight.

Barringer and Orbuch (2013), Kullgren et al. (2013), and Leahey et al. (2012) recommended wellness initiatives that group participants into teams; this encourages teamwork on the job and perpetuates stronger engagement with the intervention itself. Leahey et al. (2012) conducted a 12-week weight loss intervention where participants were on teams. The intervention boasted a 67% completion rate of mostly older, white, and modestly overweight participants. Thirty-three percent of those who finished the program reached a significant weight loss goal of 5% percent, which was pre-determined for the study. The more members on a team, the more substantial the amount of weight was lost per person. The results from Leahey's et al. (2012) study suggest that having teammates positively influenced their participation and success.

Kullgren et al. (2013) conducted a 24-week weight loss experiment (n = 35) where subjects were on teams and others assigned to be solo participants. The team participants lost more weight and kept the weight off longer than the solo participants. Diana et al. (2010) conducted a substantial weight loss intervention on almost 3,000 employees in the workplace with the goal of linking weight loss to improvement in workplace stress. After controlling for potential confounding variables like age, gender, race, income, education, and tobacco use, they found that weight loss correlated with improvement in stress. Their recommendation

was for employers to establish workplace wellness initiatives to reduce employee weight and occupational stress (Diana et al., 2010).

Alert et al. (2013) conducted a workplace weight loss intervention (n = 31) to research the results of a similar endeavor. Their study comprised of a 20-week program and after attrition, the average weight loss of each participant was only 9.5 pounds (n = 23). Some of the participation results were increases in self-esteem and improved physical function. More remarkably, they found that stress management skills also modestly increased as weight decreased.

The Affordable Care Act (ACA) and the Health Insurance Portability and Accountability Act (HIPAA) of 1996 govern employee wellness programs. Employee discrimination based on a health factor is unlawful and being overweight has been determined to be a health factor, in some cases (Bardach, 2012). Specific wellness programs which are allowable under the law, HIPAA defines. All employees must be eligible for wellness programs regardless of health or concluding health standards. All participants of wellness programs must be eligible for the rewards or absence of punishment void of any health standard outcome.

For example, a program advocating a one-mile run must be made available to all employees, and if several employees have knee injuries that prohibit participation, employers must make an equivalent substitute. Additionally, all participants must receive the same benefit from the program, irrespective of their

ability to achieve a physical or time requirement. Wellness plans must also meet a reasonableness standard in any trade-off between increased wellness versus burden to employees (Moran, 2013).

The ACA also supports wellness interventions in the workplace. However, these interventions must be voluntary, the health information must remain confidential, and the health information cannot be used to impact work benefits. For an intervention to be mandatory in a public employee arena, employers must justify a particular need of the intrusion, and it must apply to the entire work population (Bardach, 2012; Stone, 2012). Mandatory wellness standards also must be job specific.

Preventative Wellness Resources in Law Enforcement

As previously claimed, policing is a very stressful profession and increases the risk of developing mental and physical health problems. High levels of obesity contribute to professional and psychosocial difficulties as well as increased rates of morbidity and mortality among police forces. The most effective preventative program for officers revolves around health-promoting and stress reduction activities, awareness, and education; however, officers do not willingly seek out this assistance due to significant cultural stigma regarding the utilization of mental health resources and assistance (Corrales, 2013). Often, the concern is that preventative resource utilization comes too late; “without some

form of intervention, transient stress responses can develop into symptoms of suicidal ideation requiring treatment" (Water & Ussery, 2007, p. 176).

Employing solutions in police departments as part of mandatory officer training per policy could be required for personal safety. While multiple factors impact stress levels and obesity; only some are modifiable. Implementing employee interventions is needed for health problems, family problems, unhealthy work hours, stress, and lack of support in the law enforcement workplace (Can & Hendy, 2014). Since the success of interventions is dependent on several factors, it is imperative that the upper management of the police organizations support them (Churchill et al., 2014; Haberman, 2012; Lankford, Lang, Bowden, & Baun, 2013). For instance, employers can offer incentives, including gifts and even monetary compensation (Cawley & Price, 2013; Churchill et al., 2014), as financial incentives. Incentives have been shown to be successful in promoting participation in organized workplace health interventions (Linnen et al., 2012). Increasing the frequency of incentive disbursement also helps to decrease attrition (Cawley & Price, 2013).

Hostetter (2007) recommended many customized wellness interventions to help different populations within law enforcement to address the health issues associated with being overweight and stressed. The tailoring of programs to specific populations is thought to be more successful than a standardized intervention. Among the most successful wellness interventions were membership

offers for off-site gym usage followed by healthier food choices in on-site vending machines. Weight loss programs were moderately successful regarding participation. Smoking cessation programs and back pain prevention programs had the lowest levels of participation (Churchill et al., 2014). Water and Ussery (2007) also recommend some form of stress management training for officers.

Fitness requirements may also benefit police organizations and personnel. Though some evidence refutes a link between fitness and stress levels (MacDonald, 2007), others have found that fitness improves stress levels (Gerber et al., 2010). Shell (2005) argued that the annual physical testing of police officers is essential in maintaining officers' health and safety. However, these standards may be problematic due to previous court rulings against broad fitness requirements found to be unfair towards genders in law enforcement.

Less well-studied approaches to intervention included the showing of a funny short movie to reduce police officer stress (Kyle, 2008). Shirley (2013) replicated this study with teachers as participants. Both projects had a control and an experimental group and tracked pre- and post-intervention stress levels. They revealed small reductions in participant stress following laughter, but these gains were not enduring (Kyle, 2008; Shirley, 2013). I have found a few other stress reduction interventions published.

Patterson et al. (2014) conducted a comprehensive review of published interventions aimed at reducing police stress. Between 1984 and 2008, Patterson

found only 12 interventions published. Methods in those stress reduction programs included the use of emotion-regulation training, exercise programs, and writing interventions. Most of these interventions only lasted hours and "evaluation methods seldom utilized randomized controlled trials, which are the best method for demonstrating program effectiveness" (Patterson et al., 2014, p. 20). The authors recommended increased funding and future study to improve specific occupational stress management techniques. Barriers to wellness programs continue to be lack of employee interest, low participation, and lack of funding (Churchill et al., 2014).

Milsom et al. (2014) conducted a 12-week team weight loss experiment. Their goal was to assess changes in health predictor variables with weight loss. These researchers found that even with modest weight loss (5-10%), predictors of health such as high blood pressure improved. Milsom's et al. (2014) study seems to corroborate the finding that a 5% to 7% loss in body weight can be protective against the development of Type II diabetes mellitus (Chalupka, 2011). However, Milsom et al. (2014) acknowledged little is known about the sustainability of benefits derived from short-term weight loss programs and recommended further investigation.

Boyce et al. (2014) also conducted a 12-week weight loss intervention at a mid-size police organization of about 1700 employees. The intervention was a team competition, with three to four participants on a team. Measurement of

participant weight was taken at the beginning and again at the end of the 12 weeks. The teams competed against other teams within and between departments. There were significant weight loss results although there was little difference in weight loss between genders, but significant weight loss differences between overweight and obese participants.

Summary and Conclusions

The adverse health effects of being overweight and occupational stress are well documented and inter-related. There has been researching on weight and stress, but not conjointly specific to the field of law enforcement. Overweight officers subjected to high levels of stress endure dual hazards of poor health and poor job performance. These factors are often synergistic and symbiotic, with one driving the other and both leading to poor psychological, physical, and social health outcomes. Law enforcement leaders, administrators, county managers, and scholars have neglected to address both problems to the cost of their employees as well as their organizations. Police officers are subject to a variety of esoteric stressors that also negatively affect their BMI. As a result, overweight and stressed officers increase health care costs and decrease productivity for their organizations without a policy to control them. What is not known is how BMI may impact officer stress levels.

There is well documented research on overweight people and stress independent of each other. There is also a documented bi-directional relationship

between these variables. What is not known is how stress is related to a police officer's bodyweight. Therefore, improving the healthy weight and lowering stress of officers can have numerous personal and organizational benefits. The high prevalence of stress and obesity in police forces highlight the need for interventions and policy advocacy to govern this field. Various methods have been proposed in the literature to help officers lose weight, increase fitness, and manage stress. However, widespread implementation on a professional level is still lacking.

Researchers have not studied the relationship between BMI predicting officer stress. My project filled that gap. I will discuss the specific methods used in this study further in the next chapter.

Chapter 3: Research Methods

Introduction

The primary purpose of my quantitative survey project was to advocate informed wellness policy options for controlling officer body weight and possibly stress management grounded on the ideal type theory. I have gleaned stress data from participants and analyzed the relationship between self-reported stressors of certified police officers and their BMI. This project has expanded the existing body of knowledge regarding officer wellness and problem-oriented coping methods for managing anxiety by testing the stress-coping theory as it related to policy formation. Evaluating best practices for weight control in law enforcement can further influence public policy and resolve this silent threat. This project was vital due to the real threat stress poses for police and in turn the public they serve.

In this chapter, I will introduce each of the variables and covariates. The methodology will be summarized in this chapter to allow other researchers to replicate this study. I will also disclose the target population, size, recruitment strategy, and sampling procedures. I gave the participants for this study informed consent forms and ethical briefings upon agreeing to be part of the project. The Police Stress Questionnaires are the survey instruments for this project, and I will discuss them as well as their reliability and validity. I will discuss the SPSS software used to analyze the data, data cleaning procedures, and screening for the study in this chapter. Lastly, I will divulge threats to validity along with the

ethical procedures this project followed to ensure total conformity with scholarly standards.

Research Design and Approach

A cross-sectional survey design project addressed a predictive relationship between officer BMI and stress. Based on my ability to relate several variables to determine the degree of a relationship, this was a proper design choice for this project based on the research questions. The study participants include police officers broken into a logistically manageable group. I selected participants from a volunteer pool of certified officers. The survey design best conformed to multiple linear regression analysis to determine the predictive nature of the variables.

In this project, I collected stress data via the Police Stress Questionnaire surveys from volunteer police officers in South Florida. The research informed the method of data collection; the purpose was to advocate policy based on the predictive relationship between varying BMI levels and the occupational stress experienced by police officers. Participants took a two-part stress Likert-style questionnaire which takes less than 5 minutes to complete. I measured the BMI of each participant via height and weight calculations. A survey design was logistically suited to answer the research questions in this study, relate officer weight and officer stress, and control for all other covariates. With over 100 participants, the survey was also a logistically sound choice to measure stressors.

In this project, the independent variable was the BMI of the participating officers. BMI was anticipated to influence the dependent variable, which was self-reported police officer stress. Officer stress levels were the effect or the measured outcome of this project. Other variables which might influence this outcome are known as covariates, such as family life, health, culture, and officer willingness to participate. The covariates used for my study were seniority, rank, shift work, marital status, gender, and age. An investigative survey design with a multiple regression analysis determined the predictive relationship of each covariate.

Methodology

The survey design chosen for this project bears further discussion with regards to the population, sampling, recruitment, and the survey itself. The required participants for this project were certified police officers.

Population

I included the possibility of recruiting all certified police officers at the agency in South Florida in this experiment. This population by their nature was not a protected class as officers need to be at least 18 years old to be officers in Florida. The focus of my project was on officers in South Florida. This project was generalized to a larger group, such as the total officers in Florida, since the sample size was representative of the population.

I estimated 1,000 state certified officers in the officer population of my survey target county agency in South Florida. Conducting a study on the entire

population was not feasible. However, a positive sampling strategy rectified this inadequacy. All certified officers in the agency were available for inclusion in this population.

Sampling and Sampling Procedures

For successful research, I partitioned the entire populace of officers into a subset, which is more efficient (Frankfort-Nachmias, & Nachmias, 2008). I cannot address the entire population of police officers for this project. I accomplished obtaining a sample that is representative of the using stratified sampling. Eliminated from other types of sampling, this was a most successful method due to the configuration of the populace. The design is probability controlled and conducted by splitting groups further into strata. This stratagem possessed accuracy and equality for the population it represented. This design is also very cost effective based on the number of participants and time required (Frankfort-Nachmias & Nachmias, 2008).

Over two-thirds of Americans are overweight or obese (Cawley & Price, 2013; Chalupka, 2011; Hostetter, 2007; O'Connor, 2013; Proper et al., 2013a; Randle et al., 2012; Thompson, 2004a; Wee et al., 2005; Yoo, 2007) but that number rises to 80% among police officers (Huang & Acevedo, 2011; Shell, 2005). I divided the participant population for my study according to these values, 20% average weight, 40% overweight, and 40% obese BMI. I located these values from the convention of police officer's average weight distribution in

research. Based on the research questions, the chosen population cluster was representative of the populace (Frankfort-Nachmias, & Nachmias, 2008). The participants were coded based on their measured BMI values and stratified into three weight distribution groups. Stratification was a derivative of the original populace to ensure accuracy, qualified, reasonable expenditures, overall unhealthy weight, and accessibility to interact with the populace for this project (Dantzker & Hunter, 2012). Maintaining the correct proportions of the three groups ensured the accuracy of the survey results. From these inclusion criteria, a power analysis was further utilized to calculate the proper size of the sample (Creswell, 2009).

Power analysis and size. A power analysis method "consists of determining alpha, power, and effect size" (Creswell, 2009, p. 157). Essentially, this analysis calculates how large a sample must be to validate a difference in the populace if any difference exists. The effective sample size was calculated using this analysis precisely since "the greater size of a sample has no influence on its accuracy" (Frankfort-Nachmias, & Nachmias, 2008, p. 177). There are specific standards for this formula; whereas, they depend on the alpha level, power level, and effect size (Creswell, 2009).

The alpha is referred to as the statistical significance. Simply, it is customarily .05. This .05 implies a 95% probability of the contentions of the project will be accurate (Burkholder, 2012), which was sufficient for this project. The next measure is the power level. The power level is generally signified as

80% and displayed as .80 in this power analysis formula. The .80 means that 80% of the time the effect would be the cause of the variable. The effect size is how much effect the variable has on the sample populace; a significant impact requires fewer participants. These values are standard, but with oversampling the power is increased.

The power analysis calculation values for this study were for alpha = .05, power = .80, and effect size= .50. Utilizing these parameters in preliminary G*Power, the necessary sample size to achieve this power for a two-tailed multiple linear regression analysis of these variables is (n = 103) participants (Burkholder, 2012; Faul, Erdfelder, Buchner, & Lang, 2009). As recommended due to attrition, increasing the size of the sample by 15% countered sample erosion (Dantzker & Hunter, 2012).

Recruitment, Participation, and Data Collection

The participants recruited for this study were volunteers from a mid-sized South Florida County. Each volunteer met specific inclusion selection criteria to verify membership in the required group of this study. Recruiting volunteers was accomplished via professional department electronic mail notifications, bulletin board postings, and attending roll calls requesting participation by any officers who wished to complete this stress survey. This recruitment strategy ensured the study was conducted with current, serving Florida certified police officers. Volunteering for this survey was anonymous as well as any interest expressed in

this project was privileged conversation between the volunteer and me. I worked solely with the volunteers on this project and controlled their data exclusively. Police department administration permitted me to solicit volunteers for my study throughout the agency via signed agreement.

Individually, the selection of participants was certified police officers. There were no special needs populations recruited for this study. I recruited participants through bulletin board postings and department emails explaining the project; comparable to the fashion I had recruited participants for previous weight loss programs I had coordinated from 2005-2017 for that agency as part of my additional duties when I was employed there. Having open permission, I had direct access to over 1,000 police officers via email and bulletin board postings. I assigned respondents a BMI group by stratification for law enforcement. My years of previous wellness program coordination, participation, and confidentially codified trust and respect between volunteers and me. I met personally with all volunteers.

When I recruited the volunteers, they were provided full written informed consent. That is, I gave the participants acknowledgments that their participation was voluntary, they could drop out at any time, they would not suffer any negative treatment regardless if they participated or not. Also, I assured them that all their data (height/weight measurements and survey answers) remained anonymous and secured. No collected data had names on it to further protect

recruits. I met with volunteers at roll calls and various locations to obtain their data.

I recorded the initial weight and height data collection, unassisted. I collected important demographic covariates from each participant as self-reported information. Each participant took both sections of the police stress questionnaires (see Appendix A) at the onset of the project. There was no additional follow-up with participants after the survey. Participants exited the study after the survey, and I reassured them of the anonymity of their data; that concluded their involvement. I collected specific demographic information from participants at the onset which had an interplay with the primary variables at the conclusion. Such information gathered was gender, age, rank, seniority, marital status, and shift work (see Appendix C); this will be discussed further in this chapter. This demographic information was also used to confirm that I obtained a representative sample of the population.

Survey. Volunteer officers comprised the experiment and took the survey. Additionally, they were provided a waiver, full informed consent, a personal health information waiver, and purpose at the beginning of the experiment by me. The survey responses remained anonymous even to me and did not contain names or other identifiers.

I have conducted weight loss programs yearly for this sheriff's office from 2005-2017. Since inception, that program averaged 149 participants every year

for the wellness initiative. Also, 47.6% of total participants completed my wellness weight loss program each year, and 27.7% completed the program with more than 5% body weight lost. That program built a trusting relationship with the agency, me, and with previous participants. I stratified the groups of participants to meet the proper ratios of, 20% normal body weight, 40% overweight, and 40% obese. Previous wellness initiatives I have implemented at the sheriff's office deemed the previous G*Power participant numbers of 103 participants feasibly enough for my project. All weight/height measurements and surveys were conducted and administered by me, personally.

I weighed the participant and measured their height before the volunteers took the survey. I weighed them on a digital scale which I calibrated before weighing each participant. That scale weighed objects to the nearest one-fifth of a pound (.2lb). The participants were instructed to take off their shoes and empty their bladders before being weighed to maintain consistency. They each weighed in wearing undergarments, socks, pants, and a shirt with empty pockets. I made adjustments to participants that wore less than this based on the average weight of socks or pants for each BMI value stratification group. Participant height was measured on a hard surface floor against a wall with their back straight and no shoes. Those that requested privacy were measured and weighed in solitary. The completed police stress survey had no names, labels, or identifiers on them. Each participant completed the survey after being measured. Participants were

measured one at a time and took the survey one at a time. I collected the paper surveys immediately after completion. There is no virtual or digital copy of the completed surveys; I entered the data from the surveys directly into SPSS, and the paper surveys were shredded. The SPSS survey data was secured virtually via a password. After the survey, there was no follow up or contact with the researcher or participants. I will keep the data from my research for five years and then delete from its electronic source.

The tool best suited to measure police stress is the Organizational and Operational Police Stress Questionnaires. This tool has two parts and surveys officers about topics such as (a) shift work, (b) fatigue, (c) social life, (d) family, (e) co-worker relations, (f) police administration, (g) resources, and (h) the justice system. This tool was specifically designed to operationalize police stress into a composite measurable variable number. I gleaned the data from the survey answers and transferred them into SPSS v. 24.via spreadsheet. I separated these survey results into groups (based on their BMI stratification). I calculated the data subsequently, and a multiple linear regression analysis was performed to determine the relationship between these variables and covariates.

Instrumentation, Operationalization, and Measurement Analysis

The Police Stress Questionnaires have been widely used for research since their inception. Boyden (2010), Dean (2014), and Gilbert (2010) used the Operational Police Stress Questionnaire to measure stress among police officers.

Smith (2013) used both sections of the Police Stress Questionnaires to measure stress among police officers and further purported the influence gender may have on stress management. This two-part survey apparatus was explicitly created to calculate the stress in law enforcement personnel. Dean (2014) and Smith (2013) ultimately concluded that reducing stress is critical for officer well-being and recommend further studies on the topic; as such, these tools were best suited for this study. As this research intended to measure police stress, I found these surveys fundamentally designed for such a study on the target population. Freely consented for use, I used these surveys for academic research exploring police stress, and the surveys are available freely on the Internet. I also received permission to use these surveys via email from Dr. McCreary, who developed these tools (see Appendix B).

This proposed study advocated policy via predicting a relationship between body weight and officer stress. The research questions addressed which variables required evaluation and how I might conduct this evaluation. The variables that required evaluation are police stress and BMI. When measuring police stress; however, a survey tool specially designed to assess perception of that specific variable was utilized (Frankfort-Nachmias & Nachmias, 2008). This tool withstood reliability and validity tests as well. Previous literature guided me on whether I should construct a new scale or employ a tool previously tested. In this case, the literature review validated occupational stressors as a principal cause

of conflict for officers (Boyden, 2010; Kaur, Chodagiri, & Reddi, 2013; Violanti et al., 2011). Many of the scholarly reviews of police stressors measure and recommend reducing stress; yet, a negligible amount of the projects conducted experiments to accomplish this recommendation. One such tool used to measure police stress in numerous other scholarly studies was the Occupational and Operational Police Stress surveys.

This tool was a pre-designed Likert-scaled survey of two sections, and they were explicitly intended to quantify the impact of stressors in police work (McCreary & Thompson, 2006). I used these scales for my project. There are two sections of this survey of twenty questions each. McCreary and Thompson (2006) designed this reliable and valid tool to measure stress exclusively for police participants. The conception of the police stress surveys integrated officers into the study to categorize stressors. An original law enforcement focus group birthed the survey ($n = 55$). Additionally, the foremost stressors were subsequently provided to the second group of officers who assessed the reliability of these topics. This survey has strong internal consistency, reliability, as well as validity. Applying the results of the survey to other external aspects is predictive validity.

To assess reliability and validity, McCreary and Thompson (2006) obtained a second and different population of officers ($n = 47$) to capture stress on their survey. These officers also participated in completing numerous other previously validated stress surveys. McCreary and Thompson's survey validated

an excellent positive correlation to other existing stress surveys. Using the re-test method with yet a third cluster of police *(n* = 197), McCreary and Thompson achieved high reliability with a (.92) positive Cronbach's alpha (2006). The fourth cluster of officers (*n* = 188) took the survey along with two job satisfaction surveys. This further test of reliability again validated strong internal consistency with a (.93) positive Cronbach's alpha. This tool has been used liberally in scholarly studies since their advent. To cite several, Boyden (2010), Dean (2014), Gilbert (2010), and Smith (2013), conducted projects on police stressors and employed both sections of the Operational and Occupational Police Stress Questionnaires as a measuring device in their respective projects. My project utilized both original and unmodified sections of the survey tool to measure police stress. Participants rated their stress on varying topics on the Likert scale and averaged all answers into a continuous interval level variable (McCreary & Thompson, 2006)

Operationalization of constructs. The survey design also required stratified sampling and assignment to the participant groups. Multiple linear regression analysis is a test designed to determine the percent of the variance between variables and a predictive relationship between two variables, in this case, BMI of police officers and stress of police officers. In my project, the independent variable was BMI, determined via a formula of height and weight. Body mass index may have influenced the dependent variable, which is self-

reported officer stress, measured with a validated survey tool. As BMI and stress have a spurious relationship, several covariates were included to reduce the impact on stress (Frankfort-Nachmias & Nachmias, 2008). As identified in the literature review, these variables co-varied and had a pre-existing relationship to stress as covariates; they were collected and included in the analysis.

Controlling for these other variables, the unique association between stressors and BMI was identified. Stronger confidence in the results is provided with more covariates in a study (Frankfort-Nachmias & Nachmias, 2008). Including the covariates in a study ensured reducing spurious chance relationships between BMI and stress. The time in police service or seniority (SEN) has been found to be positively associated with stress and coping ability as Wang et al. (2014) researched stress, burnout, and job satisfaction. I measured seniority in 5-year intervals.

Smith (2013) conducted a law enforcement study signifying marriage (MAR) was a factor in stress. I measured marriage status in three categories. Shift work (SW) also plays a negative role in strain (Gerber et al., 2013; Wirtz & Nachreiner, 2012). I measured shift work in two categories, day shift and every other type of shift. Job description, or rank (RAK), was an organizational factor also found to negatively impact anxiety (Johnson, 2012; Zachar, 2004). I measured rank by each job title up to captain. Age (AGE) and gender (GEN) demographic information were collected as well from subjects as these variables

also impact stress in some manner. For example, my study differentiated a divorced male captain with 17 years of experience from a married female sergeant with 27 years of experience, based on these variables.

Data Analysis Plan

My reported data was analyzed by SPSS v. 24 using multiple linear regression analysis. The purpose of this analysis was to determine the percent of change in variance and predict conditions of the variables (Field, 2009). The SPSS software also assisted in the data cleaning, as needed. The police stress survey is a Likert scale rating system (1-7), and I screened data for incorrect codes, errors, and wild codes. Once participants answered all questions, the scores are designed to be combined and averaged; authors validated the survey in this manner.

The posed research questions and constructed hypotheses were:

RQ1: Will BMI significantly contribute to the percent change of R^2 variance accounted for in the predictive effect of self-reported organizational stress in the past 6 months among south Florida police officers, after controlling for age, gender, rank, marital status, shift work, and seniority?

H_o1*:* BMI, when combined with stress, will not significantly contribute to the percent change of R^2 variance accounted for in the predictive effect of self-reported organizational stress in the past 6 months among south Florida police

officers, after controlling for age, gender, rank, marital status, shift work, and seniority.

$H_1 1$: BMI, when combined with stress, will significantly contribute to the percent change of R^2 variance accounted for in the predictive effect of self-reported organizational stress in the past 6 months among south Florida police officers, after controlling for age, gender, rank, marital status, shift work, and seniority.

RQ2: Will BMI significantly contribute to the percent change of R^2 variance accounted for in the predictive effect of self-reported operational stress in the past 6 months among south Florida police officers, after controlling for age, gender, rank, marital status, shift work, and seniority?

$H_o 2$: BMI, when combined with stress, will not significantly contribute to the percent change of R^2 variance accounted for in the predictive effect of self-reported operational stress in the past 6 months among south Florida police officers, after controlling for age, gender, rank, marital status, shift work, and seniority.

$H_1 2$: BMI, when combined with stress, will significantly contribute to the percent change of R^2 variance accounted for in the predictive effect of self-reported operational stress in the past 6 months among south Florida police officers, after controlling for age, gender, rank, marital status, shift work, and seniority.

Multiple regressions are a statistical analysis designed to find a relationship between one dependent variable and an independent variable and one or more covariates. The multiple regression analysis should is used when predicting an outcome based on multiple variables (Field, 2009; Marrow, 2013), as in my study. The sensitivity in identifying relationships between variables made it an ideal analysis choice for this study (Can & Hendy, 2014). In this case, there was the likelihood that the officers could face additional stressors once the study begins that potentially affected the results; a *t*-test could not distinguish such testing partiality (Shirley, 2013).

The purpose of multiple regression is to examine the relationship between several predictor variables and one outcome variable (Marrow, 2013b; Statsoft, 2013). This analysis will determine a relationship between these variables; however, it does not explain why the relationship exists or imply any causation on the dependent variable. Multiple regression analysis is best suited for a study which has more than one independent variable and predicting one variable from another. It also identifies the importance of each independent variable (Field, 2009; Marrow, 2013b).

Assumptions

There were assumptions for a multiple regression which affect the strength of the results. These variable assumptions are that they are normally distributed variables within the groups, the independent variables should not be too closely

correlated, and accounting for outliers before analysis (Marrow, 2013b; Field, 2009). Independent variables must be quantitative or categorical and dependent variables must be quantitative, continuous, and unbounded.

Variables

The independent variable in my study was BMI, which was continuous and measured at an interval level. I identified the dependent variable as stress, measured via a survey on a Likert scale. The subjective nature of a survey participants' answers defined this variable as categorical; however, the authors of the Police Stress Questionnaire utilized the final stress score as a continuous interval leveled variable (McCreary & Thompson, 2006). This study met the criteria for standard multiple regression analysis (Marrow, 2013c; Field, 2009, p. 209). When covariates are gleaned from previous research, the forced entry method is acceptable. The forced method is where the researcher determined which variable to test and in which order (Field, 2009). Research has identified other variables impacting stress, but it is unknown which influences stress the most. Dealing with the outlier's assumption is a choice in the statistics options SPSS box under residuals. SPSS output measures other assumptions.

There are additional variables identified from extant research, which impacted officer stress. Wang et al. (2014) found the time in police service or seniority (SEN) positively associated with stress and coping ability. Seniority was a continuous variable measured at the ratio level. Smith (2013) conducted a law

enforcement study which indicated marriage was a significant factor in managing levels of stress for law enforcement officers. Marital status (MAR) of the officer was, therefore, another covariate; being married and having a family impacted officer stress positively. Marriage was a categorical nominal measured variable. Working anomalous hours was yet another covariate which potentially negatively influenced stress; shift work (SW) also played an adverse role in stress (Gerber et al., 2013; Wirtz & Nachreiner, 2012). Shift work was a categorical nominal measured variable. Smith (2013) measured stress among police officers, and further purported the definite influence gender (GEN) had on stress management. Chen (2009) agreed gender plays a part in stress coping and gender was a categorical nominal measured variable. Chen (2009) also posited age as a factor harmfully influencing stress. Age (AG) was a continuous interval measured variable.

Different job requirements or duties were also a covariate conveyed as rank (RAK) for this study. Rank was an organizational factor also found to reduce stress (Johnson, 2012; Zachar, 2004) and it was an ordinal categorical variable. Each of these variables had some impact on stress, according to the literature. The first step involved organizing and preparing the data for analysis. That included coding responses to the survey for each participant, along with aggregating data on the covariates and selected demographics. The data was analyzed using SPSS v. 24 IBM statistical software. These data allowed the

researcher to measure levels of stress against varying officer weight. The data revealed if the police officer's stress was related to body weight in some manner and direction.

The analysis included the evaluation of those covariates and the impact they might have on the dependent variable. An analysis of the data needed to include those survey questions which indicated other factors including an officer's relationship status and their rank as an officer. Addressing these variables enabled proper interpretation of the results. The covariates conveyed support that the relationship between the independent and dependent variable is possible. A regression analysis verified whether varying body weight loss would predict officer stress levels.

Threats to Validity

A study will lack focus without containing the confidence that the research has been able to measure the specific variables and outcomes they intended to measure (Frankfort-Nachmias, & Nachmias, 2008). Validity is when the measuring tool indeed assessed the proper information from the variable. The essential element of any scientific study, whether it is survey or intervention-based, is maintaining validity and reliability. That is, the outcomes of the research should withstand against credible threats to its soundness. To ensure reliability, a concept which is indivisible from validity, police officers participated in the

surveys. The forms of validity concerned in survey design projects are external, internal, and construct.

External Validity

Selection threats existed due to the esoteric qualities of the participants. This form of validity threat disallows the researcher from generalizing the findings to populations who do not share similar qualities or culture. Police culture is unique, and the results of this study have not been generalized to populations outside of the law enforcement genre. To further solidify the generalization to other law enforcement populations; however, officers from several different law enforcement agencies could have been included in the project, although logistically exhaustive. Selection and treatment validity was addressed by generalizing results only to law enforcement officers and could be further diffused with a multi-agency officer participant inclusion (Creswell, 2009) if it were logistically feasible.

Setting validity threats were present and required addressing to strengthen the generalization of results to participants in other settings. I used several settings in this study and additional police agencies could be utilized to ensure generalization better. To additionally bolster the ability to project the results on a broader representation of the population, history validity threats were analyzed as well. This threat is the inability to project the results to past or future circumstances due to the timing of the event. Replicating the experiment later and

comparing the results could eliminate this threat. Logistically for this project, it was not feasible to replicate the project. Creswell (2009) recommends future studies with new participants for history validity.

Specificity of variables was not an issue in this particular research study as the variables were specific, narrowly operationalized, and defined. Specificity made it that much easier to identify the settings into which the results were generalized. Even further, the reactive effects of the survey were a threat to the validity of the study because the police officers knew they were engaged in a study voluntarily. When participants know they are involved in a study, it can result in altered or distorted perceptions of their stress levels or inaccurate responses to survey measures. I planned to combat this threat by providing only the information necessary for the volunteers to make an informed decision. Limiting information, but not misleading them means I told participants this was a stress survey and did not inform them the final data was going to be used as evidence to develop a wellness program or policy. Also, maintaining confidentiality between volunteers ensured no information was shared that will bias or skew the results.

Internal Validity

To guard against history as a validity threat, I gave the survey in a single stage, cross-sectional sample of volunteers from the agency. Involving the human element, however, is unpredictable by design. For instance, not all participants

suffered the loss of a loved one during this project, yet some may have. The loss of a loved one was a factor that cannot be controlled or predicted and will impact the effect of stress on an officer. Additionally, officers who have sustained a massive event stressor did not participate in the study upon questioning (Creswell, 2009).

Maturation was addressed with the inclusion of the control variable of age. With a robust analysis, this threat was removed as maturity was likely to affect both weight and stress in some manner. Those with unrepresentative one-sided scores on the surveys were considered outliers and were removed from the study at the onset to address regression threats. Equal distribution of participant qualities referred to selection validity and was a hazard for this project. Stratification selection of participants overcame this problem by representing a viable cross-section of the participants. Recruiting a participant sample group larger than G*Power recommended via power analysis addresses the mortality threat.

Diffusion is a minor validity threat matter due to participants taking the survey in a single stage. There was no reward or financial compensation for any officer in this study; therefore, negating compensatory demoralization and rivalry. Experimental mortality also affected the study. No one can know how many participants may drop out of the study due to unforeseen circumstances like death, relocation, and lack of continued interest. This threat was mitigated by

oversampling and including more participants in the study than necessary to have a representative sample, ensuring via probability that enough volunteers remain at the end of the study to perform analysis of any statistically significant results.

Construct Validity

Construct validity encompasses weak descriptions and inept appraisals of the variables (Creswell, 2009). I bolstered construct validity when the survey instrument was interrelated to the concepts of the research theory (Frankfort-Nachmias, & Nachmias, 2008). The survey measured police stress and the coping theory directly related to how people cope with stress. The stress-coping theory was the stress foundation for this project, and the research questions were grounded in this theory. Essentially, this theory postulates a problem-oriented response to an identified stressor will resolve the problem and alleviate the stress. I tested this theory deductively; I assumed that being overweight was a stressor, especially in law enforcement, for various rationales identified in the literature review.

Lazarus and Folkman (1984) said a problem-oriented response would reduce the stress linked to that problem. To deductively test this theory, I assumed being an overweight police officer increased stress. I based the research questions on theoretical reasoning. Secondly, I corroborated the construct validity by using a known-groups technique as suggested by Frankfort-Nachmias and Nachmias (2008). I could have furthered construct validity by providing the stress surveys to

a group of officers previously identified as suffering from stress, via another validated survey tool, and compared the results. McCreary and Thompson (2006) performed this function while designing their tool as discussed earlier in this chapter.

Ethical Protections

This research followed all previously established ethical controls for human experiments. Access to participants was by agency permission at roll calls, bulletin board postings, and via professional department emails. I had open access and written department permission to recruit employee participants. The participants were not misled or deceived in any form before, during, or after this experiment. From the onset, I provided them with an IRB approved informed consent form which they acknowledged if they chose to participate (Frankfort-Nachmias, & Nachmias, 2008).

I obtained informed consent and data collection approval from the Internal Review Board of Walden University (IRB# 1215170333535). The informed consent explained all risks, rights, benefits, and dangers for this project. Participation was free and voluntary. The risk of taking the survey was minimal. Any exposure to discomfort or pain was minimal or non-existent. In cases of an adverse reaction to the survey, medical or physiological, the officer was referred to voluntary employee assistance, which is free of cost through the department.

Assuring their privacy, anonymity, and confidentiality in the recruitment material was disclosed at the onset of the experiment. Continuing and open permission from the agency allowed me to recruit volunteers from the department freely. The recruitment materials were sent out department-wide and posted conspicuously throughout the agency to allow any police officer to participate. Each participant decided to take the survey and I did not share their data with other members, volunteers, participants, or employees. All volunteers were informed and allowed to drop out of the survey at any time without penalty or discrimination of any kind. By privacy and confidentiality regulations, I did not provide raw data to anyone in the agency.

Once I collected the survey data, it was stored in electronic form in a secured location. These data were entered in a spreadsheet in Excel for cleaning then imported in data fields in SPSS. I stored the data on two separate data storage drives secured with password protection for five years. I will destroy all data after that time. This survey was conducted in my previous work environment, as I was a supervisor in the police agency. I reassured all employees there was no discrimination or maltreatment if they chose not to participate in this project. There were no incentives provided for this study other than participating in a stress survey for employees, which some participants may have deemed a benefit in and of itself.

Summary

This project predicted officer stress outcomes by use of a single stage cross-sectional survey design. The strengths of this design were numerous. This design is broadly accepted in research and permits inclusion of covariates allowing a stronger inference of the effect of the tested variable. It is the superior design choice to illustrate the predictive relationship between the variables. I chose a stratified sampling of the participants from volunteers after full ethical procedures and informed consent for this study. Participants took the surveys in paper form. I entered the data in SPSS for analysis using multiple regression.

In Chapter 4, there will be a description of the results obtained from this experiment. Chapter 4 will include data collection, respondent demographic results, and full descriptive statistic results. How these results impact the hypothesis for this study will also be discussed. In Chapter 5, I will explore study weaknesses and opportunities for future research as well.

Chapter 4: Results

Introduction

With wellness and officer safety issues at stake, the primary goal of my quantitative survey project was to propose sound and informed policy options for controlling body weight and possibly stress management, grounded on the ideal type theory, via a hypothesis that there is a relationship between BMI and police officer stress. I examined the predictive relationships between officer stress and BMI, age, gender, rank, marital status, shift work, and seniority to guide policy in this area. To achieve this, I asked these research questions:

RQ1: Will BMI significantly contribute to the percent change of R^2 variance accounted for in the predictive effect of self-reported organizational stress in the past 6 months among south Florida police officers, after controlling for age, gender, rank, marital status, shift work, and seniority?

RQ2: Will BMI significantly contribute to the percent change of R^2 variance accounted for in the predictive effect of self-reported operational stress in the past 6 months among south Florida police officers, after controlling for age, gender, rank, marital status, shift work, and seniority?

To answer these research questions, I used a multiple linear regression analysis. Linear regression analysis is used to determine the percent of change in variance and predict an outcome based on multiple variables (Field, 2009; Marrow, 2013). Multiple regression is a statistical analysis designed to find a

relationship between one dependent variable and several covariates. My research analysis had multiple covariates influencing stress as identified from previous research. Further, into this chapter, I will present the purpose and the research questions and will additionally discuss data collection methods, results, and the data table analysis. I will conclude the chapter with a summary of the results.

Data Collection Procedures

After I obtained informed consent and data collection approval from the Internal Review Board of Walden University (IRB #1215170333535), I solicited police volunteers for my survey study. I recruited volunteers via bulletin board and email postings at a midsized police agency in South Florida. The agency provided written permission for me to conduct the study with their employees. The bulletin board recruitment postings were not deceptive in any way. For uniformity, I conducted and calculated the height and weight of the volunteers without any actual physical touching participants to accomplish this. I set a single week period at the beginning of January 2018 where I attended department roll calls, set up measuring sessions, and performed the data collection.

During my survey week, participation was open to any certified police officer in the agency. I collected the survey and measurement data. I provided each volunteer with the informed consent form, which had information about the project, the procedures, the voluntary nature of the study, the risks, and the right to withdraw at any time. Additionally, I provided my contact information for

questions as well as contact information for the IRB at Walden University. I gave each volunteer a personal health information form regarding the collection of mental health data concerning the survey. I provided the volunteers with these forms; however, for the protection of their privacy, they did not sign them. I did not link biometric measurements, or survey responses to actual persons as officer participation were entirely confidential. The biometrics of each participant as well as collected covariate data were attached to their corresponding survey. Matching the biometrics to surveys aided in rejecting the covariates of a participant if the survey was incorrect or incomplete.

Data collection transpired for approximately seven days. All participants who provided consent forms completed the entire research process, and no participant requested to stop the research procedure. I sent recruitment literature to all agency certified officers via emails; there were approximately 1,000 prospective participants. After the survey collection week, I recruited, weighed, and surveyed (n = 132) participants from the agency, with a total response rate of 11.7%; all but four of the surveys were usable and completed copiously. The four incomplete surveys were discovered and excluded. There was no deviance from the previously reported data collection methods outlined in Chapter 3.

There were no other missing data and the number of usable recruited volunteers, n = 128, exceeded the minimum sample size of 103, calculated by my preliminary G*Power analysis for the desired .80 power of this analysis. The

ample number of participants was proportional to the larger population of law enforcement officers as well. After collecting all the surveys, I calculated and entered the Police Stress Questionnaires data into an Excel file. Entering data included the additional coded covariates of marriage, age, gender, rank, shift work, and seniority. I subsequently uploaded these data into IBM SPSS v. 24.0 software for analysis. Each variable was coded numerically; I represented marital status in this manner: married = 1, single = 2, and co-habituating = 3, for instance (see Appendix D).

Data Testing and Outputs

I first ran data frequency distributions to evaluate for missing or erroneous values. I assessed these data for central tendency, mean, median, and mode. I evaluated responses for skew (width of distribution) and kurtosis (peak of distribution) to estimate the output fit under a normal curve. This evaluation was completed to verify I could use these data in a parametric format rather than requiring nonparametric procedures. The distribution of the continuous level data was found to fit under a normal curve.

Demographic Results

Nonprobability sampling is common in measuring a relationship between variables, as in my study. I further stratified this sample by BMI grouping representing three BMI clusters found in previous research. These groups were normal BMI (n = 26), overweight BMI (n = 50), and obese BMI (n = 52). These

strata were representative of the 80% overweight and obese proportional BMI groups in law enforcement according to prior research. Each participant completed the survey, and I calculated their BMI to the nearest tenth. The sample also consisted of more males (n = 90) than females (n = 38). The mean BMI of all participants closely approached the obese body weight rating (m = 28.9%) although all three BMI stratified groups were represented correspondingly according to prior research.

Frequency Distributions

Demographic data were collected to define characteristics but also as covariates since prior research showed each impacted the dependent variable in some manner. Table 1 represents the BMI makeup of volunteers for my project. Most (78.9%) of the participants were married as displayed in Table 2. The most represented age group was 40-49 years old (45.3%) represented in Table 3. The gender of participants in Table 4 were mostly men (70.3% males; 29.7% females). Displayed in Table 5, many of the volunteers were low ranking officers (61.7%), and 64.1% were on varying shifts or on-call hours represented in Table 6. Regarding time on the job, the largest group represented in Table 7 were those officers employed 6-10 years (34.4 %).

Table 1

Statistics for BMI, Organizational Stress, and Operational Stress

	BMI	Organizational Stress	Operational Stress
N	128	128	128
Mean	28.904	2.7680	2.8430
Std. Deviation	3.7081	1.10894	1.19495
Skewness	-.351	.447	.753
Std. Error of Skewness	.214	.214	.214
Kurtosis	-.533	-.204	.159
Std. Error of Kurtosis	.425	.425	.425
Range	16.0	5.30	5.30

Table 2

Statistics for Marital Status

		Frequency	Percent
Valid	Married	101	78.9
	Single	26	20.3
	Cohabitating	1	.8
	Total	128	100.0

Table 3

Statistics for Age

		Frequency	Percent
Valid	<29	3	2.3
	30 to 39	14	10.9
	40 to 49	58	44.6
	50 to 59	42	32.8
	>60	11	8.6
	Total	128	100.0

Table 4

Statistics for Gender

		Frequency	Percent
Valid	Male	90	70.3
	Female	38	29.7
	Total	128	100.0

Table 5

Statistics for Rank

		Frequency	Percent
Valid	Deputy/Officer	79	61.7
	Detective	21	16.4
	Sergeant	20	15.6
	Lieutenant	5	3.8
	Captain or Above	3	2.3
	Total	128	100.0

Table 6

Statistics for Shift Work

		Frequency	Percent
Valid	Yes	82	64.1
	No	46	35.9
	Total	128	100.0

Table 7

Statistics for Seniority Years of Service

		Frequency	Percent
Valid	<5 years	14	10.9
	6 to 10 years	44	34.4
	11 to 15 years	32	25.0
	16 to 20 years	21	16.4
	21 to 25 years	9	7.0
	>26 years or more	8	6.3
	Total	128	100.0

Correlation Coefficients

Evaluating the correlation coefficients of the three primary independent variables in this study (BMI, organizational stress, and operational stress) was critical to determine their independent operation in the regression model. Variables with strong correlation, or multicollinearity, influence the percent of change in the R^2 output in a fashion which makes it problematic to ascertain which variable is influencing the R^2 output. The correlations table below (Table 8) showed the value of Pearson's *r* for the correlation between organizational stress, operational stress, and BMI. There was a relationship between organizational stress and BMI (r = -.204; p = < .005, 2-tailed). Organizational stress also had a significant relationship with operational stress (r = .744; p = < .001, 2-tailed). This significance between organizational stress and operational stress illustrated multicollinearity, which may have had a bearing in regression output computation and interpretation.

Table 8

Correlations for Organizational Stress, Operational Stress, and BMI

		BMI	Organizational Stress	Operational Stress
Body Mass Index	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	128		
Organizational Stress	Pearson Correlation	-.204*		
	Sig. (2-tailed)	.021		
	N	128	128	
Operational Stress	Pearson Correlation	-.164	.744**	1
	Sig. (2-tailed)	.064	.000	
	N	128	128	128

Note.
* Correlation is significant at the 0.05 level (2-tailed).
**Correlation is significant at the 0.01 level (2-tailed).

Hypothesis Testing Results

Survey data addressed two research questions with linear regression analyses to evaluate both hypotheses. Operational stress ($m = 2.843$) had an overall higher mean score than organizational stress ($m = 2.768$) in this population. Given the close approximation of these values, a *t*-test was conducted to determine the significance, if any, between mean values of these independent but related stress scales. No statistically significant differences between operational stress and organizational stress were observed ($p = 0.479$).

McCreary and Thompson (2006), authors of the Police Stress Questionnaires, determined these scales to be independent measurements of some form of stress in police officers. For my participants, no statistically significant

difference between operational and organizational stress scale scores was observed. Additionally, McCreary, Fong, and Groll (2017) developed normative baseline values for these questionnaires. They found mean normative scores for organizational stress range values to be *m* = 3.49-3.57 and operational stress mean scores to fall in the *m* = 3.22-3.30 range. These implications will be discussed further in Chapter 5.

Table 9

One-Sample T-test Test Value = 2.7680*

				95% Confidence Interval of the Difference		
	t	*df*	Sig. (2-tailed)	Mean Difference	Lower	Upper
Operational Stress	.710	127	.479	.07497	-.1340	.2840

*participant mean scale score for Organizational Stress

Regression Data Entry

I used the forced entry for the data in SPSS for this regression model for the first block and forced entry for the second block. An analysis was completed for organizational stress (RQ1) in the first block with covariates of marriage, age, gender, rank, shift work, and seniority as combined predictors. Organizational stress was the dependent variable, and BMI was the independent variable of interest tested in the second block. A second analysis was completed for operational stress (RQ2) in the first block with covariates of marriage, age, gender, rank, shift work, and seniority as combined predictors. Operational stress

was the dependent variable, and BMI was the independent variable of interest tested in the second block.

Organizational Stress

RQ1: Will BMI significantly contribute to the percent change of R^2 variance accounted for in the predictive effect of self-reported organizational stress in the past 6 months among south Florida police officers, after controlling for age, gender, rank, marital status, shift work, and seniority?

H_o1*:* BMI, when combined with stress, will not significantly contribute to the percent change of R^2 variance accounted for in the predictive effect of self-reported organizational stress in the past 6 months among south Florida police officers, after controlling for age, gender, rank, marital status, shift work, and seniority.

$H_1 1$*:* BMI, when combined with stress, will significantly contribute to the percent change of R^2 variance accounted for in the predictive effect of self-reported organizational stress in the past 6 months among south Florida police officers, after controlling for age, gender, rank, marital status, shift work, and seniority.

Table 10 illustrated two models for organizational stress tested via multiple linear regression. Model 1 illustrated the covariates alone in this study and model 2 illustrated the covariates with BMI as an isolated predictor variable. For model 1 the R^2 change value and effect size was .113, indicating the grouped

covariates in model 1 accounted for 11.3% of the variation in organizational stress (F (6, 127) = 2.564, p = .023; Table 11) and illustrated that one or more covariates was a significant predictor of organizational stress (F_{change} = .023 < .05). For model 2, the R^2 change value and effect size was .025, indicating the grouped covariates and BMI accounted for 2.5% of the variation in organizational stress (F (7, 127) = 3.485, p = .064; Table 11) and illustrated that when BMI was added to the regression model no independent variable combinations significantly contributed to organizational stress (F_{change} = .064 > .05).

Table 10

Multiple Regression for Organizational Stress Regressed on Covariate Predictors

Model					Change statistics				
	R	R^2	Adjusted R^2	Std. Error of the estimate	R^2 change	F change	$df1$	$df2$	Sig. F change
1	.336[a]	.113	.069	1.07011	.113	2.564	6	121	.023
2	.371[b]	.138	.088	1.05929	.025	3.485	1	120	.064

Note.

a. Model 1 predictors = (constant), seniority, shift work, gender, marital status, rank, age;
b. Model 2 predictors = (constant), seniority, shift work, gender, marital status, rank, age, body mass index;
c. Dependent Variable: Organization Stress.

Table 11 illustrated the *ANOVA* table for models 1 and 2 for organizational stress. Model 1 had a significant F-ratio of 2.564 for variables excluding body mass index (Sig. = .023 < .05). Model 2 illustrated a significant F-ratio of 2.741 for all variables. In the organizational stress model, all covariates

were significant when grouped together (Sig. = .011 < .05). The model for organizational stress was a significant fit for all data overall.

Table 11

ANOVA for Organizational Stress Regressed on Covariate Predictors[a]

ANOVA						
	Model	Sum of Squares	*df*	Mean square	*F*	Sig.
1	Regression	17.616	6	2.936	2.564	.023[b]
	Residual	138.563	121	1.1145		
	Total	156.179	127			
2	Regression	21.526	7	3.075	2.741	.011[c]
	Residual	134.652	120	1.122		
	Total	156.179	127			

Note.

a. Dependent variable: Organizational Stress.
b. Model 1 predictors = (constant), seniority, shift work, gender, marital status, rank, age;
c. Model 2 predictors = (constant), seniority, shift work, marital status, rank, age, body mass index;

The scatter plot (see Appendix E) illustrated a random array and even dispersal of dots in the data reiterating the assumptions had been met in the model (Field, 2009). These validated normal distribution of the residuals. The coefficients table (Table 12) displayed the *B*-value or weight, and this indicated the relationship between stress and each predictor and illustrated the predictive relationship's strength. The coefficients table also showed the beta value which provides relationship direction as well as standard deviation changes. For organizational stress in model 2, the covariate of shift work was statistically significant (.008 < .05). Model 2 additionally illustrated a statistical significance of two covariates on organizational stress: (a) seniority (.019 < .05); and (b) shift

work (.08 < .05). Between these two significant covariates shift work posed the most statistically significant predictive relationship with a $B = .537$ value. For each one increment value higher on the shift work scale, it was predicted an officer's organizational stress score would increase by .537 units. While these two covariates demonstrated significance in the model, they were not the primary predictor variable of interest. When considering the primary variable of BMI, and controlling for my covariates, the null hypothesis was retained with BMI having no predictive significance for officer-reported organizational stress greater than chance.

Table 12

Multiple Regression Coefficients for Organizational Stress Regressed on Independent Predictors

Model	Unstandardized Coefficients		Standardized coefficients		
	B	Std. Error	Beta	*t*	Sig.
1 (Constant)	2.460	.649		3.791	.000
Marriage	-.187	.235	-.073	-.795	.428
Age	.219	.136	.173	-1.612	.110
Gender	-.086	.222	.036	-.389	.698
Rank	.070	.102	.064	.685	.495
Shift Work	.567	.199	.246	2.849	.005
Seniority	.168	.091	.203	1.842	.068
2 (Constant)	3.991	1.042		3.832	.000
Marriage	-.159	.233	-.062	-.680	.498
Age	.226	.135	-.178	-1.676	.096
Gender	-.107	.220	-.044	-.487	.627
Rank	.064	.101	.059	.637	.525
Shift Work	.537	.198	.233	2.719	.008
Seniority	.147	.091	.178	1.614	.019
Body Mass Index	-.049	.026	-.163	1.867	.064

Dependent Variable: Organizational Stress

Operational Stress

RQ1: Will BMI significantly contribute to the percent change of R^2 variance accounted for in the predictive effect of self-reported operational stress in the past 6 months among south Florida police officers, after controlling for age, gender, rank, marital status, shift work, and seniority?

RQ2: Will BMI significantly contribute to the percent change of R^2 variance accounted for in the predictive effect of self-reported operational stress in the past 6 months among south Florida police officers, after controlling for age, gender, rank, marital status, shift work, and seniority?

Two models illustrated in Table 13 for operational stress were tested via multiple linear regression. Model 1 illustrated the covariates alone in this study and Model 2 illustrated the covariates with BMI as an isolated predictor variable. For Model 1, the R^2 change value and effect size was .064, indicating all the covariates in Model 1 accounted for 6.4% of the variation in operational stress (F (6, 127) = 1.388, p = .225; see Table 14). For Model 2, the R^2 change value and effect size was .025, indicating the covariates and BMI accounted for 2.5% of the variation in operational stress (F (7, 127) = 3.339, p = .070; see Table 14). Model 1 illustrated a trend towards significance, but the regression output remains non-significant ($F_{\text{change}} = .225 > .05$). In Model 2, with BMI added to the regression model, no independent variable combinations significantly contributed to operational stress ($F_{\text{change}} = .070 > .05$).

Table 13

Multiple Regression for Operational Stress Regressed on Covariate Predictors[c]

Model					Change statistics				
	R	R^2	Adjusted R^2	Std. Error of the estimate	R^2 change	*F* change	*df*1	*df*2	Sig. *F* change
1	.254[a]	.064	.018	1.18413	.064	1.388	6	121	.225
2	.300[b]	.090	.037	1.17285	.025	3.339	1	120	.070

Note.
a. Model 1 predictors = (constant), seniority, shift work, gender, marital status, rank, age;
b. Model 2 predictors = (constant), seniority, shift work, gender, marital status, rank, age, body mass index;
c. Dependent variable: Operational Stress.

Table 14 illustrated the *ANOVA* table for models 1 and 2 for operational stress. Model 1 did not have a significant *F*-ratio of 1.388 for variables excluding BMI (Sig. = .225 > .05). A non-significant *F*-ratio of 1.690 was illustrated in model 2 for all variables. In the operational stress model, all covariates were not significant when combined (Sig. = .118 > .05). The model for operational stress was a significant fit for all data overall. Table 15 further illustrated when controlling for covariates marital status, age, gender, rank, shift work, and seniority, BMI was not a significant predictor of R^2 percent change in variance for operational stress.

Table 14

ANOVA for Operational Stress Regressed on Covariate Predictors[a]

ANOVA						
	Model	Sum of Squares	*df*	Mean square	*F*	Sig.
1	Regression	11.681	6	1.947	1.388	.225[b]
	Residual	169.663	121	1.402		
	Total	181.344	127			
2	Regression	16.274	7	2.325	1.690	.118[c]
	Residual	165.069	120	1.376		
	Total	181.344	127			

Note.

a. Dependent variable: Operational Stress.
b. Model 1 predictors = (constant), seniority, shift work, gender, marital status, rank, age;
c. Model 2 predictors = (constant), seniority, shift work, marital status, rank, age, body mass index;

The scatter plot (see Appendix F) illustrated a random array and even dispersal of dots in the data reiterating the assumptions had been met in the model (Field, 2009). These validated normal distributions of the residuals. The coefficients table (Table 15) displayed the *B*-value or weight, and this indicated the relationship between stress and each predictor and illustrated the predictive relationship's strength. The coefficients table also showed the beta value which provided relationship direction as well as standard deviation changes. For operational stress in model 1, the covariate of age was statistically significant (.050 = .05). Model 2, none of the covariates combined with BMI were significant. Age posed the most statistically significant predictive relationship with a *B* = -.298 value. For each one increment value higher on the age scale, it was predicted an officer's organizational stress would decrease by .298 units.

While this covariate demonstrated significance in the model, it was not the primary predictor variable of interest. When considering the primary variable of BMI, and controlling for my covariates, I retained the null hypothesis with BMI having no predictive significance for officer-reported operational stress greater than chance.

Table 15

Multiple Regression Coefficients for Operational Stress Regressed on Independent Predictors

Model	Unstandardized Coefficients		Standardized coefficients		
	B	Std. Error	Beta	*t*	Sig.
1 (Constant)	2.559	.718		3.564	.000
Marriage	.059	.260	.021	.227	.821
Age	-.298	.151	-.218	-1.981	.050
Gender	.137	245	.053	.559	.577
Rank	.133	.112	.114	1.181	.240
Shift Work	.392	.220	.158	1.780	.078
Seniority	.094	.101	.105	.928	.356
2 (Constant)	4.218	1.153		3.657	.000
Marriage	.090	.258	.033	.348	.728
Age	.149	-.223	-2.047	.043	.096
Gender	.115	.243	.044	.471	.639
Rank	.127	.111	.109	1.139	.257
Shift Work	.360	.219	.145	1.645	.103
Seniority	.071	.101	.079	.701	.458
Body Mass Index	.053	.029	-.163	-1.827	.070

Dependent Variable: Operational Stress

Post Hoc Analysis

In each regression model, I identified covariates that were significant and warranted further individual investigation. For organizational stress, shift work and seniority were significant predictors and in the operational stress model age was a significant predictor with BMI trending towards significance. I examined these variables further.

In the organizational stress model, I looked at shift work and seniority independently in a correlation matrix analysis. The correlation revealed seniority was not significantly related with organizational stress; however, shift work remained significant ($r = .248$, $p = 0.01$, 0.01 level 2-tailed). Therefore, I conducted an organizational stress regression model (Table 16) including shift work, independent of my covariates and BMI and verified a significant relationship ($p = .005 < .05$) accounting for 6.1% of the predictive model.

Table 16

Multiple Regression Coefficients

Model	Unstandardized Coefficients		Standardized coefficients		
	B	Std. Error	Beta	*t*	Sig.
1 (Constant)	1.992	.286		6.955	.000
Shift Work	.571	.199	.248	2.873	.005

Dependent Variable: Organizational Stress

Summary

I found BMI, after controlling for age, gender, rank, marital status, shift work, and seniority was not a significant predictor of the organizational or

operational stress of the officer ($F = 3.485$, $p = .064$; $F = 3.339$, $p = .070$) respectively. While an officer's BMI was not significant to predicting organizational or operational stress in the full regression models, shift work ($R = .371$; $p = .008 < .05$) and seniority ($R = .300$; $.019 < .05$) illustrated weak but significant predictive relationships. Additionally, in the full regression models, age illustrated a predictive significance to operational stress ($R = .300$; $p = .050 = .05$). In a post hoc analysis, these three covariates were examined individually with shift work and organizational stress ($R = .248$; $p = .005 < .05$) emerging as the only significant findings. When considering the primary variable of BMI, and controlling for my covariates, the null hypotheses were retained for both research questions with BMI having no predictive significance for officer-reported organizational or operational stress greater than chance.

I will discuss the implications for social change based on these results in Chapter 5. I will also describe my conclusions as well as policy recommendations based on this body of research using ideal type theory as an exploratory lens. I will also deliberate social change, study limitations, and endorsements for possible future research in this area.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this study was to examine the problem of officer stress in relation to BMI to gain insight into stress outcomes. These outcomes were hypothesized to serve as a basis for policy construction in law enforcement agencies to counteract BMI and stress costs. Despite the known damaging effects of being overweight, Florida does not have a mandatory BMI regulation policy in place for police officers. The specific problem is the deficiency of such BMI policy standards for police officers. BMI can also be linked to stress in some manner (Berset et al., 2011; Proper et al., 2013b). Officer job performance related to organizational and operational stress is an issue that influences the lifespan, work quality, and physical and mental wellbeing of police officers (Chikwem, 2017; Violanti et al., 2013).

Officer Stress and BMI

I intended to explore a predictive relationship between BMI and officer stress. A conceivable relationship could augment and inform policy formation for better health outcomes regarding stress in officers. I examined multiple covariates from previous research to strengthen the analysis results. This cross-sectional quantitative survey study comprised of certified police officers from a midsized agency in South Florida theorized possible relationships between BMI and officer stress specifically related to organizational and operational stress factors. I used

multiple linear regression to measure the strength and direction of these relationships and predict the relationship between BMI and stress. The lack of collective studies regarding the relationship between officer BMI and stress combined has left a gap in scholarly research. This chapter will further provide explanations of findings, implications for positive social change, recommendations for future studies, and possible endorsements for further action. After elaborating on study limitations, I will conclude the chapter with my final research implications.

Interpretation of Findings

My foremost objective was to explore whether the BMI values of police officers would predict or moderate the harmful influences of job stress. I collected the covariates of rank, seniority, shift work, gender, age, and marital status for evaluation in my regression models. Shift work was the only covariate found to be significantly related to officer stress in my study.

Research Questions

RQ1: Will BMI significantly contribute to the percent change of R^2 variance accounted for in the predictive effect of self-reported organizational stress in the past 6 months among south Florida police officers, after controlling for age, gender, rank, marital status, shift work, and seniority?

Officer BMI values were not found to be significant in predicting any relationship with the organizational stress of the officer. Officer BMI values also

did not predict their operational stress; therefore, I retained the null hypotheses for both research questions. As this was the first research project to attempt to examine officer BMI values directly in comparison with police organizational and operational stress, my literature focused on previously researched stress and BMI outcomes.

My literature review verified agencies must address these adverse impacts of officer stress. My literature review also identified other variables relative to stress. Stronger confidence in the results is achieved with covariates in a study (Frankfort-Nachmias & Nachmias, 2008). Including covariates in my study ensured reducing spurious relationships between BMI values and officer stress levels. A brief review of the results of these covariates is warranted here.

Age and Gender

I collected gender demographic information from subjects. Smith (2013) measured stress among police officers and said gender might increase stress management. Yoo and Franke (2011) said that female officers endure more job stress than their male officer counterparts. Chen (2009) said gender plays a part in stress coping as male and females' process stress differently. I could not confirm Chen's (2009) findings in my participants. Equal gender stress indicates both male and female officers suffer stress at equivalent levels in this policing organization and these findings offer an argument for the impartiality of treatment of both sexes of officers.

In my study, I measured age at 10-year intervals. I could not confirm previous findings relating age to officer stress as a significant predictor in my population. Stable stress scores regardless of age mean that no matter the age of an officer, officers consistently suffer stress during the tenure of their career. An officer can expect his or her stress levels to remain unchanged throughout their profession. The officer will be subjected to stress their entire life, and this expands the constant harmful effects that stress can have over time.

Rank and Marital Status

I measured rank in several different categories from deputy through captain. The previous findings relating rank to officer stress could not be confirmed as a significant predictor in my sample according to my results. Similar to seniority, this nonsignificant variable in my study indicates even with promotion or upward assignment, participants did not report increased officer stress. Conversely, no matter the rank of the officer, there was no indication of rank being a significant predictor of stress. Again, the officer will be subjected to stress their entire career, regardless of the rank they attain.

Smith (2013) said marriage was a factor in managing stress. I measured marital status in three categories: (a) married, (b) divorced, or (c) co-habituating. Smith (2013) studied married female police officers and found that they also suffer significant amounts of stress in law enforcement's male-dominated culture. Yoo and Franke (2011) supported this finding as well, reporting that single female

officers endure more job stress than their male officer counterparts. I could not confirm these previous findings relating marriage to officer stress as a significant predictor in my sample. Being married or having a significant person in their life did not impact stress any more than being single in my participants. Marriage might also increase stress if the relationship is not resilient. Having a significant person for support additionally does not reduce stress if the officer is on shift work and cannot logically spend time with the spouse.

Shift Work

Shift work drives anxiety and stress (Gerber et al., 2013; Wirtz & Nachreiner, 2012). I measured shift work in two categories: (a) day shift and (b) every other type of shift. This shift work variable included being on call, which is a status where the officer is off duty but must be available to be recalled by the agency to work at any time. In a post hoc analysis, shift work and organizational stress ($R = .248$; $p = .005 < .05$) emerged as the only significant predictive relationships confirming Gerber et al. and Wirtz and Nachreiner' findings that shift work predicts stress. Working fluctuating hours, including being on call, can be very stressful not only for the officer but to the officer's family.

Not having access to the family can compound stress as the family is an active link in the support system against stress (McCarty et al., 2007). Officers who cannot spend time with family during the holidays, weekends, or even in the evenings suffer the loss of a vital support system for tolerating stress. McCarty et

al. (2007) found some officers are inclined to communicate extensively and befriend others to cope with occupational stress where other officers rely on strong bonds with family.

Seniority

Wang et al. (2014) researched stress, burnout, and job seniority as positively associated with stress and coping ability. Chen (2009) found age, seniority, rank, and education to be positively correlated with stress levels. Chen (2009) purported officers between 31-40 years old, with 11-20 years of police service, and possessing a college degree comprised the central demographic average of officers who reported the highest levels of stress. The value of seniority was significant in other previous studies; however, in my participant sample, it was not a significant predictor.

The interpretation of this outcome may be inferred to mean that time as a police officer does not increase these officer's stress levels. It also stands to reason subsequently that seniority does not decrease or diminish the volume of stress in officers. The value of seniority was significant in other studies; however, in my participant population, it was not significant. As an officer reaches more time on the job, the officer may very well adapt to the stress of that position. When seniority dictates a promotion or reassignment, again, the officer remains subject to the stress of being a law enforcement officer.

Organizational Stress and Operational Stress

McCreary et al. (2017) established normative baseline values for officers utilizing the police stress questionnaires they developed. They found mean normative scores for organizational stress values to be m = 3.49-3.57 and operational stress mean scores to fall within m = 3.22-3.30. I found operational stress (m = 2.843) had an overall higher mean score than organizational stress (m = 2.768) in my sample. My participant's mean organizational and operational stress scores are not consistent with McCreary et al. (2017) normative findings in the context of higher operational stress mean scores compared to organizational mean scores.

The mean scores in my sample were below the normative mean scores established for the survey instruments, and this could demonstrate a lower amount of stress overall in my participants. My participant's baseline mean scores also illustrate that in my sample, officers reported higher stress scores for operational police techniques and less stress for organizational police procedures, mathematically. Given the close approximation of these mean stress values, I conducted a t-test to determine the significance, if any, between mean values of these independent, but related stress scales. No statistically significant differences between operational stress and organizational stress were observed (p = 0.479).

Body Mass Index

As the principal variable of interest, my research had a specific focus on BMI and its outcomes. The negatives attributes related to higher BMI values are well researched and reported in the literature. Berset et al. (2011), MacDonald (2007), and Proper et al. (2013b) found overweight people did not cope as well as those of appropriate body weight. In the agency surveyed, there are no established BMI standards and the overweight appearance policy is not enforced for employees. When overweight officers are not corrected, disciplined, or terminated due to high BMI, a logical conclusion is that high BMI may not have a relationship with reported stress levels. Without a policy to guide BMI levels, it would appear officers do not consider being overweight at as threat stressor. Although my study results did not illustrate any relationship between BMI and stress, the body of existing research presented concerning the harmful effects of BMI remains compelling in many aspects, and further relationship analyses are encouraged.

Theory

The stress-coping theory detailed in Chapter 2 is applied in this study and is the most suitable to understand the processing and appraisal of psychological stressors based on stress management abilities, which vary from person to person. Human factors such as self-confidence, commitment, social structure, and perceived control of the stressor play a part in assessing the stressor event.

Situational factors influencing coping are the events, resources, and limitations. When examined together, these variables offer some clarity in the differences between individuals and their ability to cope with stress (Lazarus & Folkman, 1984; Shirley, 2013).

Stress appraisal and response mechanisms typically involve reviewing the problem, devising solutions, choosing a solution, and acting (Chan & Ward, 1993; Kakar, 2013; Shirley, 2013). This complete appraisal cycle is termed "coping" and varies by personality and personal resources and continues until the stressor is resolved, with anxiety difficulties arising if the stressor cannot be resolved. Coping is the evaluation process between the event and reaction to it (Lazarus & Folkman, 1984).

Applying coping theory to my study, there is an assumption that an overweight condition was an unresolved stressor; however, this did not accurately account for the coping abilities of different officers. My study did not support this application of the stress-coping theory. From the conclusions of my analysis, BMI does not predict officer stress. Perhaps the officers in the study population do not have stress about their body weight. When no weight standards are set or enforced and without policy standards, high BMI values would not place their employment in jeopardy.

Only when a stressor is identified as a negative or a threat, does it cause stress (Lazarus & Folkman, 1984). If the stressor is irrelevant or positive, it

requires no further re-assessment; it is disregarded as a threat. An example of an irrelevant stressor is one in which the actor has no vested interested in the outcome, and ultimately the results will not affect them (Lazarus & Folkman, 1984). Also, reasoning higher BMI values not being related to officer stress could be in the timing of the surveys. Conducting the study in January could have played a part in the officer coping processes as will be further discussed.

Max Weber's ideal type theory encourages policy formation based on what is ideal for a specific culture (Wagner & Harpfer, 2014). Ideal type theory refers to how systems of government implement policies which shape professional reality. Ideal types lead researchers to draw valid comparisons between the results of studies published within a single disciplinary field (Weber, 2009). Applying ideal type theory to the performance of law enforcement, a significant inference to draw is that organizational policy development should focus more closely on physical and mental health.

Policy recommendations from my study in light of an ideal policy state are many. Shift work impacted officer stress and in an ideal state, policy should be initiated in this arena. An ideal type policy to lessen the stress of shift work possibly is a pay increase shift differential. Those employees on shift work would have an increased salary to offset and tolerate the additional stress. Numerous police agencies do have a shift pay differential. My participant's agency does not have a pay differential for shift work, and the implementation of the same may

help mitigate stress scores related to this shift work. Not every agency has the budget to logistically pay a differential though it is an ideal policy change to assist officers. Secondarily, officers can be rotated off shift work, so every officer shares the shift workload. Lastly, only volunteers could be scheduled on shift work as some employees do volunteer for that schedule, however, a mechanism would be needed to ensure shifts are safely and adequately staffed when insufficient volunteers are recruited, especially during holidays.

Limitations of Study

Many of the limitations of my study were inherent of the quantitative design contingent of survey data. The first limitation surrounds the testing of officers from a single agency. With roughly 765,000 full-time officers nationwide (Reaves, 2016), testing officers from a single agency limit generalizability. Although utilizing officers from one agency does provide insight to stress dynamics related to the covariates and BMI in that specific agency, it does not adequately represent officers across the region or nation. My sample (n = 128) did exceed the computed G*Power minimum sample size and increasing the sample size and diversity of police forces in future research could strengthen a future study's power, thus broaden generalizability.

A second limitation of my study was in timing bias; the testing occurred in the first week of January. Traditionally the beginning of a new year is a time for making "New Year's resolutions" about life habits which people hope to change.

Officers could have been overly optimistic based on “getting fit” or “weight loss resolutions” at the start of a new year or conversely, they could have been pessimistic for previous year failures in weight loss goals and anticipating further failures in the upcoming the new year. Timing is a reliability issue, and a replicative study at different monthly timings could be used to examine measured stress across a calendar year offering a more distributive approach.

Another limitation within this study was possible bias. As a previous employee and supervisor for this agency, the participants might have felt compelled to report their stress scores in a particular manner. Participants might have minimized their scores under a false assumption that the content might be provided to supervisors who might impact their future performance evaluation or promotion eligibility. There is no way to measure this potential bias when employees may fear for the security of their career based on answers they provide in a survey.

The environment can be changed to testing officers at a neutral location which would limit the potential for prevarication bias somewhat. Another researcher conducting the study however, could also reduce this form of bias. There were also a few surveys where the participant rated all 20 of their stress scores using the same number for both tests. Without interviewing the participant, it is unknown if there was a response bias or if they were merely in a hurry to fill out the two-twenty question surveys. Those results could have very well been

outliers and could have been discarded from the analysis or they would have skewed the results. Keeping these surveys in the study, although they represented only 1% of responses, could represent an error in reporting.

Recommendations

The recommendations for future studies are derived by my study's limitations. This study could be replicated in other geographical areas, and police agencies in the United States and by increasing the sample size and diversity of police forces overall strength of relationships and external validity could be enhanced. The study could even be replicated at the same agency again, but at a different time of the year by a different researcher to see if time and researcher neutrality impact results. One strength of this study was use of valid and reliable police stress survey instruments that are widely used in policing agencies for stress measurement. Coupling these stress scales and my specific demographics with officer wellness programs may be beneficial to further examine stress reduction techniques in the future and related interventions.

Wellness Intervention Recommendations

Wellness interventions with weight loss are research-supported concepts for stress reduction. Johannessen and Berntsen (2013) showed that weight loss can modulate PTSD symptoms. In their study, participants suffered from PTSD and were placed on a 16-week weight loss program. Participants in that study had reduced stress scores after losing weight. The study serves as proof of the concept

of the inter-related nature of stress and weight loss interventions. Leahey et al. (2012) conducted a 12-week weight loss intervention where participants were on teams. The intervention boasted a 67% completion rate of mostly older, white, and modestly overweight participants. Both of these interventions where participants lost weight stress scores were decreased. My research premise did not study stress after weight loss; however, it is a provoking prospect.

Diana et al. (2010) conducted a large weight loss intervention on approximately 3,000 employees in the workplace with the goal of linking weight loss to improvement in workplace stress. After controlling for potential confounding variables such as age, gender, race, income, education, and tobacco use, they found that weight loss had a significant relationship with stress improvement. Diana et al. illustrated evidence that administrators should offer workplace wellness initiatives to reduce employee weight and occupational stress.

Alert et al. (2013) conducted a workplace weight loss intervention and their study comprised a 20-week program where increased self-esteem and improved physical function resulted. More remarkably, they found that stress management skills also modestly increased as weight decreased. Replicating my research in an experimental framework comparing groups who lost weight and reduced stress after a wellness intervention is a provocative recommendation coupled with Alert et al.'s approach.

Chalupka (2011) and Milsom et al. (2014) also conducted weight loss experiments. Their goal was to assess changes in health predictor variables with weight loss. These researchers found that even with modest weight loss (5-10%), predictors of health improved (Chalupka, 2011), including some stress coping skills. However, Milsom et al. (2014) acknowledged little is known about the sustainability of benefits derived from short-term weight loss programs and recommended further investigation as well. Improved policing has the potential to improve social implications as well.

Implications for Positive Social Change

The primary objective of my research was to effect positive social change for all society by measuring officer stress related to BMI. With almost 800,000 full and part-time police officers in the United States (Reaves, 2016), the effects of high body mass values and stress have been highlighted by this body of research, even if an interdependent predictive relationship was not found. Law enforcement has an esoteric subculture, and any change will be dependent on accepted norms and the formation of supportive polices. The instrument of public policy can be a robust power in executing needed social change in this specific area.

Even at a local level, my investigation into officer body weight and stress have many potential implications, which may include increasing officer health and efficiency (Boyce et al., 2014; Can & Hendy, 2014; Chen, 2009; Chikwem,

2017; Neely & Cleveland, 2013). It may further offset the adverse impacts of stress, which would provide two-fold health benefits for well-being and productivity. Overweight employees increase individual health insurance claims, have lower efficiency, and burden the entire agency with an increase in health care costs (Ackerman, 2013; Bartels & Nordstrom, 2013; Blair et al., 1996; CDC, 2017; Van Nuys et al., 2014). Positive social change can be embraced by providing information and pathways for policymakers, city administrators, police chiefs, and officers themselves in accepting and addressing the impact of officer stress. Controlling BMI could lead to increased mental and physical health among police officers, yielding improved job performance, fewer officer injuries, reduced use of sick time, and a more disciplined self-image among police officers (Satterwhite 2000; Thomas, 2003).

The positive social change from my project could have far-reaching implications for police officers and society. However, the positive social change does not end with the officers; it only begins with them. With numerous documented and well-researched advantages of losing weight, police officers individually stand to benefit from this research (Gerber et al., 2010; Gu, Zhong, & Page-Gould, 2013a). Stress has long been well documented as a forerunner of adverse health, burnout, poor work decisions, and even poor judgment (Can & Hendy, 2014; Chen, 2009; Chikwem, 2017; Finney et al., 2013; Gilbert, 2010; Kyle, 2008). The Florida Retirement System data illustrate this as retired officers

in Florida have a life expectancy of 62.47 years old, while other Floridian retirees were found to have a life expectancy of 74.21 years. The report describing this 19% lifespan disparity cites a variety of occupational stressors in law enforcement as significant contributors to the reduction in life expectancy (Brevard County Sheriff's Office, 2011).

It is likely that stress is one obstacle that impedes many worthwhile law enforcement goals. High rates of officer stress lead to increased use of force, poor decision making and poor performance (Chikwem, 2017). Thus, best practices for ensuring a standard BMI value among police officers could lead to positive social change impacting not only the families of police officers and organizations of South Florida but nationwide, and the entire society they serve. Promoting policies and training that protect officers from harmful stress can have a positive influence on the public they serve. Building trust between our communities and police officers may very well begin with problem-oriented stress solving responses with law enforcement officers. It is critical to reducing officer stress with programs targeting high BMI values and shift work.

Conclusions

All Americans are affected by policing and its outcomes. The purpose of my study was to examine officer stress in relation to BMI levels and other covariates. Police officers suffer high BMI values and substantial stress more so than the average American worker. With the quasi-military nature of police

organization, officers are subjected to cope with vocational stressors with little to no policy assistance from the agency. This body of research cautions police agencies and policymakers to acknowledge the warning signs of stress and high BMI values and address them. Although my analysis did not support BMI values being related to stress, my research punctuates the adverse outcomes of high stress and high BMI independently. The overarching goal of my research is to inform policy changes focused specifically on acknowledging and reducing officer stress with officer body weight (BMI) management as one tool supported by training and policy initiatives.

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Appendix A: Operational Police Stress Questionnaire

Public domain: http://spartan.ac.brocku.ca/~dmccreary/PSQ_Development.html

Operational Police Stress Questionnaire

Below is a list of items that describe different aspects of being a police officer. After each item, please circle how much stress it has caused you over the past 6 months, using a 7-point scale (see below) that ranges from "No Stress At All" to "A Lot Of Stress":

No Stress At All			Moderate Stress			A Lot Of Stress
1	2	3	4	5	6	7

1. Shift work	1	2	3	4	5	6	7
2. Working alone at night	1	2	3	4	5	6	7
3. Over-time demands	1	2	3	4	5	6	7
4. Risk of being injured on the job	1	2	3	4	5	6	7
5. Work related activities on days off (e.g. court, community events)	1	2	3	4	5	6	7
6. Traumatic events (e.g. MVA, domestics, death, injury)	1	2	3	4	5	6	7
7. Managing your social life outside of work	1	2	3	4	5	6	7
8. Not enough time available to spend with friends and family	1	2	3	4	5	6	7
9. Paperwork	1	2	3	4	5	6	7
10. Eating healthy at work	1	2	3	4	5	6	7
11. Finding time to stay in good physical condition	1	2	3	4	5	6	7
12. Fatigue (e.g. shift work, over-time)	1	2	3	4	5	6	7
13. Occupation-related health issues (e.g. back pain)	1	2	3	4	5	6	7
14. Lack of understanding from family and friends about your work	1	2	3	4	5	6	7
15. Making friends outside the job	1	2	3	4	5	6	7
16. Upholding a "higher image" in public	1	2	3	4	5	6	7
17. Negative comments from the public	1	2	3	4	5	6	7
18. Limitations to your social life (e.g. who your friends are, where you socialize)	1	2	3	4	5	6	7
19. Feeling like you are always on the job	1	2	3	4	5	6	7
20. Friends / family feel the effects of the stigma associated with your job	1	2	3	4	5	6	7

Appendix A: Organizational Police Stress Questionnaire

Organizational Police Stress Questionnaire

Below is a list of items that describe different aspects of being a police officer. After each item, please circle how much stress it has caused you over the past 6 months, using a 7-point scale (see below) that ranges from "No Stress At All" to "A Lot Of Stress":

No Stress At All			Moderate Stress			A Lot Of Stress
1	2	3	4	5	6	7

1. Dealing with co-workers	1	2	3	4	5	6	7
2. The feeling that different rules apply to different people (e.g. favouritism)	1	2	3	4	5	6	7
3. Feeling like you always have to prove yourself to the organization	1	2	3	4	5	6	7
4. Excessive administrative duties	1	2	3	4	5	6	7
5. Constant changes in policy / legislation	1	2	3	4	5	6	7
6. Staff shortages	1	2	3	4	5	6	7
7. Bureaucratic red tape	1	2	3	4	5	6	7
8. Too much computer work	1	2	3	4	5	6	7
9. Lack of training on new equipment	1	2	3	4	5	6	7
10. Perceived pressure to volunteer free time	1	2	3	4	5	6	7
11. Dealing with supervisors	1	2	3	4	5	6	7
12. Inconsistent leadership style	1	2	3	4	5	6	7
13. Lack of resources	1	2	3	4	5	6	7
14. Unequal sharing of work responsibilities	1	2	3	4	5	6	7
15. If you are sick or injured your co-workers seem to look down on you	1	2	3	4	5	6	7
16. Leaders over-emphasise the negatives (e.g. supervisor evaluations, public complaints)	1	2	3	4	5	6	7
17. Internal investigations	1	2	3	4	5	6	7
18. Dealing the court system	1	2	3	4	5	6	7
19. The need to be accountable for doing your job	1	2	3	4	5	6	7
20. Inadequate equipment	1	2	3	4	5	6	7

Appendix B: Police Stress Questionnaire Permission

9/29/2017 Re: Police Stress Questionnaires

From: Don McCreary <donmccreary@hotmail.com>
To: chiappeta <chiappeta@aol.com>
Subject: Re: Police Stress Questionnaires
Date: Fri, Sep 29, 2017 3:53 pm
Attachments: McCreary and Thompson 2006 IJSM.pdf (133K), McCreary et al 2017 Police Practice & Research - Norms and Cut Scores for the Operational and Organizational Police Stress Questionnaires.pdf (1386K), Operational Police Stress Questionnaire FINAL.doc (80K), Organizational Police Stress Questionnaire FINAL.doc (79K)

Louis, please see attached. Good luck.

Don McCreary, PhD
Adjunct Professor of Psychology (Brock University)
Fellow, American Psychological Association
Owner, DRM Scientific Consulting
Toronto, Canada
LinkedIn: https://ca.linkedin.com/in/donaldmccreary

From: chiappeta@aol.com <chiappeta@aol.com>
Sent: September 28, 2017 4:05 PM
To: donmccreary@hotmail.com
Subject: Police Stress Questionnaires

Dr. McCreary,

I am a doctoral student at Walden University and I am doing my dissertation on "Advocating Ideal Type Policy for Police Officer Wellness Based on Body Mass Index as a Predictor of Self-Reported Occupational Stress". It is my desire to utilize both of the police stress questionnaires (unmodified) you developed.

It is my intention to survey officers at the mid-size police agency I recently retired from to ascertain a relationship between varying body mass indices of police officers and their stress levels. I retired after 26 years in law enforcement and located this survey while doing research and it is uniquely designed to measure exactly what I hope to measure.

I see the surveys are available in the public domain to students, like me, to conduct research as well as police agencies.I still would like your permission to use them as well as any updates or tips you may have for their use. Of course, at the conclusion of the project, I can provide you a copy of my results if you like.

Thanks

Louis Chiappetta

Appendix C: Demographic Form

CERTIFIED OFFICERS ONLY
PARTICIPANTS-PLEASE CIRCLE (ONLY ONE) MOST SUITABLE ANSWER

Height: _____ Weight:_____

Marital Status:
Married Single Co-Habituating

Age Range:
30 & Under 31-40 41-50 51-60 61 & Above

Gender:
Male Female

Rank:
Deputy/Officer Detective Sergeant Lieutenant Captain or above

Are you on shift Work? (Described as anything other than Mon-Fri, day shift-INCLUDES call out status)
Yes No

Years of Service as an Officer:
5 & Under 6-10 11-15 16-20 21-25 26 and Above

Overall Perceived Level of Stress or Anxiety:
Please indicate the degree, if any, to which you have been under stress or anxious within the past month by circling the appropriate number:

1 = Not at All 2 = Somewhat 3 = Moderately So 4 = Very Much So 5 = Immensely

Appendix D: Codebook

CODEBOOK BMI [s] MAR [n] AGE [o] GEN [n] RAK [o] SW [n] SEN [o] ORGStress [s] OPStress [s] bmir [o]
  /VARINFO POSITION LABEL TYPE FORMAT MEASURE ROLE VALUELABELS MISSING ATTRIBUTES
  /OPTIONS VARORDER=VARLIST SORT=ASCENDING MAXCATS=200
  /STATISTICS COUNT PERCENT MEAN STDDEV QUARTILES.

Codebook

Notes

Output Created		05-APR-2018 14:38:03
Comments		
Input	Data	C:\Users\Greg\Desktop\Police Survey Data.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	Rows in working data file	128

Syntax		CODEBOOK BMI [s] MAR [n] AGE [o] GEN [n] RAK [o] SW [n] SEN [o] ORGStress [s] OPStress [s] bmir [o] /VARINFO POSITION LABEL TYPE FORMAT MEASURE ROLE VALUELABELS MISSING ATTRIBUTES /OPTIONS VARORDER=VARLIST SORT=ASCENDING MAXCATS=200 /STATISTICS COUNT PERCENT MEAN STDDEV QUARTILES.
Resources	Processor Time	00:00:00.03
	Elapsed Time	00:00:00.04

BMI

		Value
Standard Attributes	Position	1
	Label	Body Mass Index
	Type	Numeric
	Format	F4.1
	Measurement	Scale
	Role	Input
N	Valid	128
	Missing	0
Central Tendency and Dispersion	Mean	28.904
	Standard Deviation	3.7081
	Percentile 25	25.750
	Percentile 50	29.300
	Percentile 75	31.750

MAR

		Value	Count	Percent
Standard Attributes	Position	2		
	Label	Marital Status		
	Type	Numeric		
	Format	F2		
	Measurement	Nominal		
	Role	Input		
Valid Values	1	Married	101	78.9%
	2	Single	26	20.3%
	3	Cohabitating	1	0.8%

AGE

		Value	Count	Percent
Standard Attributes	Position	3		
	Label	Age		
	Type	Numeric		
	Format	F2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1	<29	3	2.3%
	2	30 to 39	14	10.9%
	3	40 to 49	58	45.3%
	4	50 to 59	42	32.8%
	5	>60	11	8.6%

GEN

		Value	Count	Percent
Standard Attributes	Position	4		
	Label	Gender		
	Type	Numeric		
	Format	F2		
	Measurement	Nominal		
	Role	Input		
Valid Values	1	Male	90	70.3%
	2	Female	38	29.7%

RAK

		Value	Count	Percent
Standard Attributes	Position	5		
	Label	Rank		
	Type	Numeric		
	Format	F2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1	Deputy/officer	79	61.7%
	2	Detective	21	16.4%
	3	Sergeant	20	15.6%
	4	Lieutenant	5	3.9%
	5	Captain or above	3	2.3%

SW

		Value	Count	Percent
Standard Attributes	Position	6		
	Label	Shift Work		
	Type	Numeric		
	Format	F2		
	Measurement	Nominal		
	Role	Input		
Valid Values	1	Yes	82	64.1%
	2	No	46	35.9%

SEN

		Value	Count	Percent
Standard Attributes	Position	7		
	Label	Seniority		
	Type	Numeric		
	Format	F2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1	<5 years of service	14	10.9%
	2	6 to 10 years of service	44	34.4%
	3	11 to 15 years of service	32	25.0%
	4	16 to 20 years of service	21	16.4%
	5	21 to 25 years of service	9	7.0%
	6	26 years or more	8	6.3%

ORGStress

		Value
Standard Attributes	Position	8
	Label	Organizational Stress
	Type	Numeric
	Format	F4.2
	Measurement	Scale
	Role	Input
N	Valid	128
	Missing	0
Central Tendency and Dispersion	Mean	2.7680
	Standard Deviation	1.10894
	Percentile 25	1.9250
	Percentile 50	2.5750
	Percentile 75	3.6500

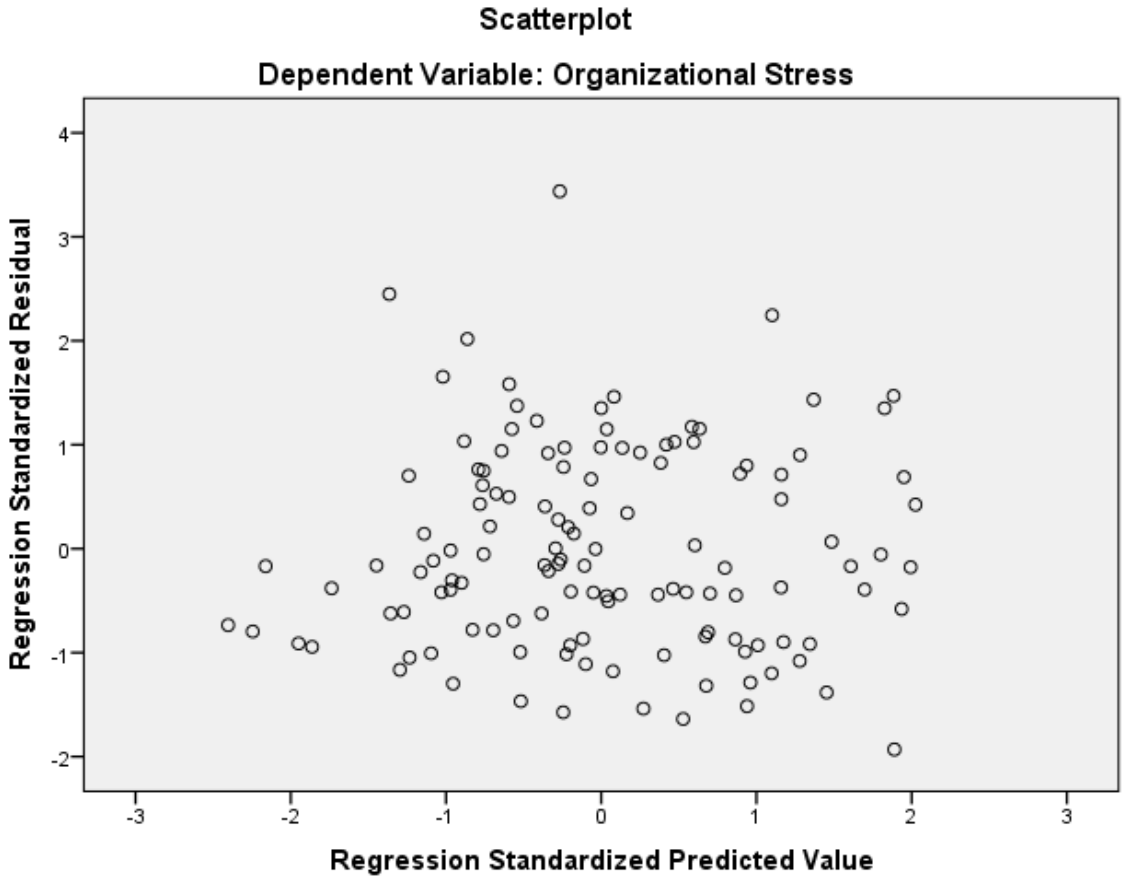
OPStress

		Value
Standard Attributes	Position	9
	Label	Operational Stress
	Type	Numeric
	Format	F4.2
	Measurement	Scale
	Role	Input
N	Valid	128
	Missing	0
Central Tendency and Dispersion	Mean	2.8430
	Standard Deviation	1.19495
	Percentile 25	2.0000
	Percentile 50	2.5750
	Percentile 75	3.4500

Bmir

		Value	Count	Percent
Standard Attributes	Position	10		
	Label	BMI Recode		
	Type	Numeric		
	Format	F8.2		
	Measurement	Ordinal		
	Role	Input		
Valid Values	1.00	Normal	26	20.3%
	2.00	Overweight	51	39.8%
	3.00	Obese	51	39.8%

Appendix E: Organizational Stress Scatterplot



Appendix F: Operational Stress Scatterplot