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Effect of Hot Spot Policing on Reducing Officer Stress

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Abstract

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MS, University of Detroit Mercy, 2011

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Dissertation Submitted in Partial Fulfillment

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Abstract

Police officers endure various threats ranging from verbal abuse to physical attacks, which can escalate and lead to police officer stress. Despite the abundant research exploring the relationship between high-stress occupations and environmental health, adequate exploration of the relationship between officer stress and hot spot policing (HSP; area with an above-average level of crime) has yet to occur. The purpose of this correlational study was to use Cohen and McKay's conceptualization of the stress-buffering hypothesis to explore whether HSP mitigates the negative impact of job stress, leading to improved officer performance and ultimately improved relationships between the police and communities as well as lower crime rates. Posting of a SurveyMonkey link in law enforcement only, social-media communities (with administrator permission) facilitated data collection for the 151 respondents. Findings indicated that the overall regression model was significant; however, the simple correlation between HSP and officer stress (.118) indicated that HSP alone does not account for unique variance (there was a value of .014 or 1.4% of the variation in officer stress). The social change implications of this study include recommendations to police department administrations to continue to explore efforts to reduce officer stress, which could lead to improved officer performance and police and community relationships.

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Dedication

I want to dedicate this dissertation to my family; without their support, I could not have completed this process. I am dedicating this to my spiritual rock, my wife, Olinka Hollie. I also dedicate this dissertation to my children; Julia, Ethel, Alfred, Joseph, Samantha, and Alexander. I hope that this dissertation will prove inspirational to them. Last, but most importantly, I would like to thank and praise God for guiding me through this process and lifting me when things got hard.

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I could not complete this doctoral program without the assistance and efforts of the dedicated staff and faculty of the School of Social Sciences and Public Policy and Administration.

I would like first to thank my committee chair, Dr. Jessie Lee. His guidance, feedback, assistance, and most importantly, patience and understanding to my research and development were essential. I will be forever grateful and will ensure I pay-forward his dedication. I would like to also, express sincere gratitude to Dr. Gregory Koehle, who was vital to getting through my methods portion of this research and provided excellent guidance throughout my dissertation process.

Finally, I would like to thank all the professionals that I work with who inspire me to excel in all that I do, I would not be the professional that I am without those who work around me and provide inspiration and at the same time allow me to grow as a leader.

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Chapter 1: Introduction to the Study

Officer stress levels can affect how police officers conduct themselves and impede community relations efforts (officer performance). As demonstrated by a 2015 poll, tensions between police and communities have grown, and urban population centers appear to have a distrust of the police who provide service to their communities (The Associated Press-NORC Center for Public Affairs Research, 2015). Adding to officer stress and the strain to the relationship between police and communities is that many police agencies do not have the staffing levels and techniques to improve these relationships. The Bureau of Labor Statistics has reported that for police and detectives, the increase rate is only 4%, whereas other professions have an average growth of 7% (Ali, 2017). Although crime reduction studies have shown that HSP is effective, exploration is required to determine whether HSP can lead to improved officer health (lower stress), which would allow police personnel to better interact with communities and improve community relationships. Thus, I conducted this quantitative study to determine the feasibility of hot spot policing (HSP) as a resource management tool for reducing officer stress. The results of this study may assist in lowering officer stress and provide information to prevent further erosion of police and community relations, which can benefit law enforcement agencies at all levels (federal, state, and local).

Background

In the early days of exploring methods and techniques to reduce crime, there was a focus on proficient patrol called “random patrol” (Wilson, 1950). O.W. Wilson (1958), a former Chicago police superintendent, wrote, “Patrol is the cornerstone of modern

police function and that only through persistent patrol will crime be reduced" (p. 28 - 29) The goal was to increase an offender's certainty of incarceration (risk vs. reward), so the likelihood of criminals committing an offense lowered as the risk of arrest rose (Wilson, 1958). There was widespread acceptance of Wilson's work, and his work continues to affect perspectives of managing officials in many law enforcement agencies; many believe that police presence through patrol function is the key to crime reduction efforts.

The effect of Wilson's work remains in the policies and efforts of various police agencies. For example, in 1977, the Nashville Metropolitan Police Department engaged in a multiple-baseline design and time-series statistical analyses to examine the effects of increased police patrol (saturation police patrolling). The study showed statistically reliable changes in reported levels of Part I crime (Schnelle, Kirchner, Uselton, & McNees, 1977). In 1996, the Dallas Police Department conducted a quasi-experimental research study to analyze the impact of an anti-gang initiative, which entailed the use of overtime-funded police officers to implement saturation patrol; the study found there was a statistically significant decrease in gang-related violence in the target areas (Fritsch, Caeti, & Taylor). Another study was conducted in 2001 to determine if directed police patrol (i.e., random patrol) was feasible for reducing firearms violence, and the findings suggested that directed patrol had an impact on firearms crime in one of the target areas but not the other. In all the studies the goal was to create the illusion of omnipresence; many police managers supposed that increased patrol activity would present as an omnipresence of law enforcement officers (LEOs), which would result in the reduction of opportunity and discouraging criminal activity.

Despite the benefits of random patrol, the function of increasing patrols became more difficult as budgets became constricted—coupled with the inability of many departments to retain and hire qualified personnel (Ali, 2017), random patrol became progressively unsuccessful at addressing crime and may have led to higher stress levels among patrol officers. Seeking solutions, police departments began to adopt a community policing approach. Community policing refers to collaboration and confidence between communities and police depending in part on citizen attitudes (Friedman, 1990). Favorable attitude formation can help police resolve difficulties, including high crime rates and deficiency of community cooperation (Friedman, 1990).

In addition to this stress of trying to reduce crime rates, the two primary sources of stress in policing are operational stressors and occupational(organizational) stressors. Operational stressors include the various types of overtime inherent to police work (e.g., operational overtime, court overtime, and job-related violence; Boorstin, 1986; Crank et al., 1993). Research suggests that organizational stressors may be a significant source of stress for police officers (Shane, 2008). Research has identified the following stressors as direct sources of stress:

- Being “second-guessed” in fieldwork
- punishment for “minor” infractions
- Lack of reward for a job well done
- Fear of being having their department-issued firearm and personal firearms administratively confiscated by the department for personal or stress-related problems (Lack of support)

- Low morale as a result of other stressors. (Shane, 2008)

If organizational stressors are a more significant source of stress, then the policies that dictate the performance of patrol and efforts to reduce crime rates are also organizational stressors that affect officer stress levels. Therefore, I conducted this study to determine whether HSP is an effective as a resource management tool for managing stress, which can enable departments to improve community relations.

Problem Statement

Within police agencies there is a strain on staffing, which is decreasing numbers of qualified candidates, increasing attrition, and expanding scope in police functions, all of which lead to increased officer stress. Work-related stress can have negative effects on employees and their employers. Effects range from a reduced output, malingering, and employee attrition rates (Ferguson, 2019). In law enforcement, some officers who cannot cope with stress find themselves participating in various vices that can lead to conflicts that affect relationships and can lead to depression and other problems. Commonly, people who become depressed with their jobs also experience decreased job satisfaction, increased absences, and make more mistakes (Bhagat, Mcquaid, Lindholm, & Segovis, 1985).

Further compounding the issue of stress is shrinking budgets. Communities faced with budgetary decisions often look at public safety agencies for potential cutbacks despite available technologies in “data-driven” deployment that may significantly benefit agencies in managing resources (McCabe, n.d., p. 5). Because of cuts, law enforcement agencies have lower staff levels and have returned to basic patrol rather than community

policing activity (Simon, 2010). However, one method to address crime despite budget constraints is HSP. Most studies have shown notable crime reduction, indicating that when used by police, HSP has a beneficial impact on crime (Braga, as cited by Weisburd & Telep, 2014).

Without policies that reduce crime, an increase in crime rates can further increase the strain on shrinking resources, resulting in increased officer stress. I studied HSP as a resource management tool for managing officer stress. The study findings may contribute to the body of knowledge, aiding policymakers in reducing officer stress, which may improve officer health and as a by-product improve police and community relationships.

Purpose of Study

The purpose of this quantitative study was to determine whether police departments who employ HSP experience stress differently than police departments that do not employ HSP. The objective of this study was to test if HSP can perform as a resource management tool for managing stress. HSP may reduce officer stress, which can strengthen the several services and programs that aid in crime reduction activities and bolster improved community and police associations. Rather than falling back to old patrol models, HSP may be a more permanent solution by adopting data-driven deployment policies. It is important for police managers to deal with staffing shortfalls while also sustaining expected levels of service and mitigating officer stress levels, which this study addresses with a focus on HSP as a solution.

Research Question and Hypothesis

Research Question: Does the application of hot spot policing affect officer stress?

H_0: The application of hot spot policing will not influence officer stress.

H_1: The application of hot spot policing will influence officer stress.

Theoretical Framework

The theory that applies to this study is Agnew's general strain theory, which I will discuss in more detail in Chapter 2. General strain theory reasons that tensions or stressors heighten the prospect of undesirable feelings like rage and frustration. These feelings make pressure for corrective acts, and crime is one likely response (Agnew, 2001).

Nature of Study

A research design is used to answer the research questions and address a study's purpose (O'Sullivan, 2008, p. 26). This study involved a quantitative, true experimental design to demonstrate that the employment of HSP would reduce stress within departments that employ it. Experimental, quantitative research designs are useful in determining cumulative differences between groups (Rudestam et al., 2015). The purpose, therefore, was to isolate the independent variable and influence it to detect the impact of the manipulation on the dependent variable. Management of variables facilitates this procedure, permitting inference of a affiliation between the two (or more) variables of concern (Rudestam et al., 2015, p. 31). Figure 1 presents the study framework and variables in this study.

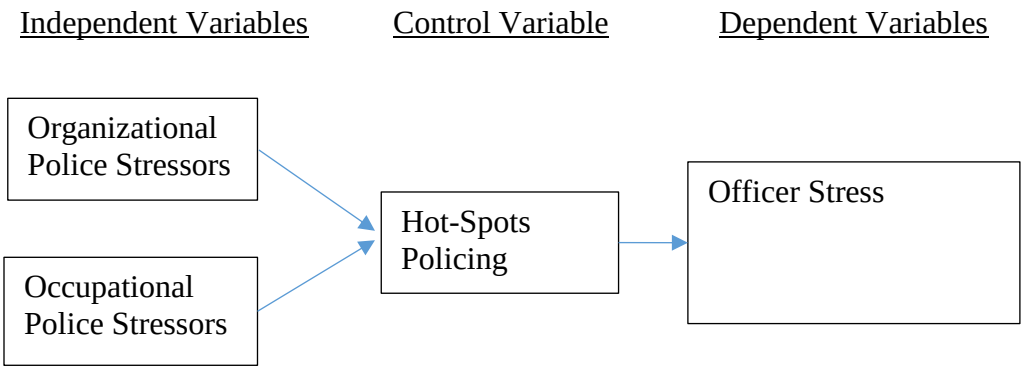

Figure 1. Framework and variables.

This study had a posttest only control group design. Thorough examinations of HSP have occurred; however, there are no studies in regard to HSP as a method to reduce officer stress, so pretests were not probable. The posttest-only control group design permits for randomization:

R X O_1

R O_2

My units of analysis consist of various departments, department sizes, and a demographic range of LEOs. The key factor for this study was whether the officer participated in HSP or not. Using a nonprobability sample of sworn officers who actively work police patrol, I administered the Police Stress Questionnaire. Law enforcement agencies share customary law enforcement duties, allowing generalization of results and addressing external validity.

Definition of Terms

Hot spots: An area with an above-average level of crime relative to the entire space (Lazzati & Menichini, 2016, p. 9).

Inter role distance: Struggle amid the organizational and nonorganizational roles (Bano & Talib, 2017).

Personal inadequacy: Lack of information, abilities, or acceptable training to be effective in a particular role (Bano & Talib, 2017).

Police patrol: A police patrol is a police officer or a group of police officers who have the responsibility to enforce laws that could include traffic control, crime prevention, and control of crowds at a given area, which can consist of on foot, in a vehicle, or on a motorcycle (O'Connor, 2010).

Proactive patrol: Proactive patrol increases police presence by as much as 2 to 3 times compared to normal operations (Anderson & Malleson, 2014).

Reactive patrol: Reactive patrol is in response to a call for service (Anderson & Malleson, 2014).

Role ambiguity: Lack of intelligibility about the prospects of others for the role, or lack of advice on how others regard performance (Bano & Talib, 2017).

Role erosion: Feeling that the functions that should reside in the incumbent's role are being moved/performed and shared by other roles. It is a feeling of accountability without authority (Bano & Talib, 2017).

Role expectation conflict: Contradictory prospects or demands by the unlike role senders (Bano & Talib, 2017).

Resource inadequacy: Nonavailability of resources needed for effective performance (Bano & Talib, 2017).

Role isolation: Lack of connection between an individual's role and other roles in the agency (Bano & Talib, 2017).

Role overload: Feeling that too much is anticipated from the role compared with what the occupant can manage. It may be quantitative and qualitative (Bano & Talib, 2017).

Role stagnation: Feeling of existence wedged in the same role. This feeling occurs when the individual perceives no chance for career progression (Bano & Talib, 2017).

Self role distance: Feeling of struggle in personal standards and self-concepts with the necessities of the agencies role (Bano & Talib, 2017).

Assumptions

This study has several assumptions. First, considering that the questionnaire solicited unbiased opinions, voluntary participation is an assumption. Participants' truthful responses to survey inquiries is another assumption. Another assumption is that participants will accurately portray events that occur within their respective police departments. Finally, I assumed that response bias would not present a substantial danger to the validity of the research.

Scope and Delimitations

The scope of this study was to scrutinize the associations between three variables: police officers' occupational stress, police officers' operational stress, and departmental use of HSP. One additional delimitation was the choice to survey active police officers of varying demographics and police departments, providing a population that is more likely

to have similar experiences with police stressors. The second delimitation was the choice to review police officers as opposed to a broader array of LEOs (e.g., police administrators, corrections officers, federal LEOs/agents maintaining a narrow focus for the research). These delimitations helped concentrate the scope of the study to the involvements of police officers in similar settings, providing more targeted understanding into police officer stressors.

Limitations

This study has a few limitations. One limitation is the specific population, as I targeted LEOs because they have a key role in police work; however, police chiefs may provide more in-depth data on the issues of interest, considering expected experience and education levels. Another limitation is that the data rely on the individual participants surveyed; however, I followed the methods used in similar studies on police stress (see Gerber et al., 2010). Regardless, the outcomes of this study were contingent on the sample population, and further exploration may address this limitation by sampling an altered population.

Another limitation was that correlation cannot equate with causation, meaning this study cannot establish that HSP directly reduces police officer stress. Even if a reduction is demonstrated, there is still the problem of reversed causality (endogeneity). However, this study provides an improved understanding of the correlations between police officers' work-related stress and HSP, which is an important initial step in advancing research, even with the absence of a causal link.

Significance of Study

There is a multitude of studies of HSP as a tool to lower crime; however, there is a gap in the research on whether HSP has other benefits like reduction of officer stress. This study was conducted to examine the effect of HSP on officer stress despite reduced budgets and smaller recruitment pools. Thus, this study addresses a gap in understanding by determining stress levels at departments that employ HSP in contrast to those that do not. This subject was exclusive as it inspects how to address the possible reduction in police stressors, despite the amplified call for services with scarcer resources, which may also permit for improved community policing efforts.

Summary

The goal of this study was to gain insight into HSP and its relationship to police officer stress, which can assist law enforcement agency administrators in setting a deployment policy that promotes reducing police officer stressors and can lead to improved community relations. The assumption was that the data would provide policymakers with valuable information. This research may lead to the implementation of more efficient resource management, lowering officer stress and improving community relationships, which may lower crime rates.

Chapter 2: Literature Review

Introduction

The purpose of this quantitative study was to add knowledge of HSP through empirical examination of the correlation between HSP and officer stress. I focused on how the application of data-driven deployment and HSP influences officer stress, how officer stress influences performance, and how officer performance influences community relations. Research has shown how police stress affects police performance, which has revealed varied conclusions on the associations between LEOs' stress and performance (Chen, 2009; Jo & Shim, 2014; Shane, 2010; Wu, 2011). In regard to HSP, researchers have found consistent reductions in crime. Although my research was focused on officer stress with HSP as a control variable, it was also necessary to review literature on reducing crime rates, improving police and community relations, and police use of force, as each of these areas impact police stressors.

Crime reduction efforts remain a primary goal for law enforcement, which is a factor in police organizational and operational stress. From the early works of Wilson (1950, 1958) to the present day, how law enforcement agencies deliver service continues to be a challenge and research concern. For example, a study was conducted on the Perris Station to determine whether crime reduction models are valid. Evaluation of law enforcement practices before 2008 at the Perris Station exposed that patrol procedures closely followed reactive policing. To improve poor delivery of service, a strategy loosely founded on the COMPSTAT model was established to connect the gap and create a way to track crime tendencies and advance strategies to cut crime. The study showed

that the police, as established through the benefits of the crime control model, can decrease and avert crime based on the model's principles of collecting and tracking current crime data, sharing information, and engaging strategic policing approaches. Analyses provide evidence to recommend that strategic policing models (e.g., COMPSTAT, HSP, etc.) may be more effective than reactive policing approaches (McElvain, Kposowa, & Gray, 2013).

These models are important in probing issues that affect the judgment of police use-of-force such as officer stress, which can improve police and community relations. Police agencies are authorized to use force in their official capacities, which delineates LEOs from any other government unit (Bittner, 1990). There is a positive correlation between police use-of-force and the relationship between police and communities. However, it is difficult to recognize when police use-of-force is unnecessary because no single definition of excessive force exists (Garner, Maxwell, & Heraux, 2002; Terrill & Mastrofski, 2002). Researchers have often relied on measures of force such as complaints against the police, or subjective criteria such as citizen perception (Durose, Schmitt, & Langan, 2005). One definition is that excessive force is the force that exceeds the necessary amount required to gain compliance in an incident (Adams, 1995, 1999; Worden, 1995). By this standard, an officer might use reasonable force but at some point in the encounter surpass reasonable force (Alpert & Smith, 1994). Additionally, "unnecessary force" is described as the force that precedes citizen resistance or continues after a citizen has stopped resisting (Adams, 1999; Worden, 1995). By this definition, an officer may use physical force against some types of suspects before it is justified or

"beat" a suspect who is under control (Skolnick & Fyfe, 1993, p. 198). Further, studies have explored the relationship between use-of-force and how a suspect responds, the officer, or a situation. Some studies have scrutinized police beliefs or culture and how it affects use-of-force; however, most of this research is focused on legitimate force an officer might use as part of their work environment rather than excessive or unnecessary force (see Garner et al., 2002; Phillips, 2010, p. 198).

The topics of police use-of-force and community and police relations have a significant influence on how police agencies deploy resources. Therefore, to understand how HSP can aid in resource management, it was important to explore thee topics in a literature review. There is considerable evidence that the divergence between police and communities result in distrust, which further erodes relations and increase police stress. In this chapter, I will present a review of the literature related to these topics.

Literature Search Strategy

I used many sources to discover literature for this study, which include Walden University's electronic databases and specific websites. Walden University's electronic databases included Police Practice and Research Articles and Criminal Justice Abstracts. Statistical data posted on websites by several government agencies aided in my literature search (federal, state, and local) as well as articles related to the research. For example, the article "How Police Chiefs Plan to Avoid 'Lawful but Awful' Shootings" revealed current efforts by various local police agencies to address public perception of police use-of-force. Search terms included but were not limited to *police use-of-force, policing*

strategies, *perceptions of policing*, *community policing*, and *reducing crime rates*. Google was used to gather data sources, and relevant articles downloaded in PDF format.

This literature review also involved the following articles related to HSP, officer stress, officer performance, and community and police relationships:

- "Stressors in Policing"
- "Occupational Stress"
- "Job Performance"
- "An Integrated Theory of Hot Spot Patrol Strategy: Implementing Prevention by Scaling Up and Feeding Back"
- "Measuring Perceptions of Police Use-of-force"
- "LEOs' Opinions of the use of unnecessary force by Officers"
- "A Qualitative Assessment of the Implementation of Community Policing"
- "Avoiding Awful but Lawful Shootings"
- "Constitutional Policing as a Cornerstone of Community Policing"
- "Fixing Police Relations"
- "Mapping Crime Principle and Practice"

Theoretical Foundation

General Strain Theory

The framework that grounds this study is general strain theory. Agnew (1992) viewed strain as originating from three subgroups: (a) the inability to achieve positive goals, (b) the forfeiture of encouraging stimuli, and (c) the existence of negative stimuli. Agnew theorized strain as a state that may make some people uncomfortable, and how

people respond to tension is provisional to limited variables. Managing skills have an important role. Some people deal with the tension by soliciting coping strategies such as talking about how they are feeling, but if not managed, adverse emotions can lead to violence or other forms of crimes.

Agnew (1992) further explained that events and situations such as goal hindrance, loss of positive stimuli, or presentation of negative stimuli result in subjective strain. Subjective strains denote to events or situations that are disliked by the people who are experiencing (or have experienced) them (Agnew, 2001). In this study, I examined objective strains, which refer to disliked events or situations shared by most members of a given group (for this study, LEOs). Agnew (2001) also explained that occupational strain flows from the long working hours and hard tasks related to many professional jobs (commitment). These strains are less probable to result in crime because the high social control connected with them elevates the costs of crime; however, strains increase misconduct because they lead to a range of negative emotions, which create pressure for corrective action. For this study, I replaced the term *crime* with *misconduct* as LEOs experience of occupational strains. Misconduct may be used to reduce or escape from strains (e.g., theft to obtain money), seek revenge against the source of strain, or alleviate negative emotions (e.g., through alcohol use; (Agnew, 2001)). I used this theory to investigate whether HSP affects occupational stressors.

Routine Activity Theory

Although not used in this study, routine activity theory is also applicable to the study of HSP. The theory hypothesizes that three features must be present for criminals

who are capable and ready to participate in criminal deeds: (a) victim, (b) opportunity, and (c) desire (Ungvarsky, 2019). Routine activity theory suggests that reducing or eliminating any of these factors will result in disrupted or prevented criminal activity (Ungvarsky, 2019) The probable perpetrator's vantage point determines both opportunity and desire, and the goal of HSP is to minimize and eliminate both aspiration and possibility, thereby pre-empting or decreasing criminal activity. Routine activity theory takes a macro-level assessment and highlights broadscale variations in the patterns of target and offender conduct. Through the target hardening aspects of HSP, decreased job stressors (workload, organizational pressures) can lead to reduced officer stress.

Literature Review Related to Key Variables and Concepts

The exhaustive review of the literature for this study shows that the construct of interest and chosen methods for this study are consistent in scope. The rationale for the selection of the variables in each study was that each of them relies on one or more variables from general strain theory or routine activity theory. The studies also pertained to officer stress, officer performance, or crime and its causes, which meant a restrictive pool of variables that are required to analyze criminology. The concepts presented in each of these studies served as a baseline for research. The following are studies and variables that show support for the focus of the literature review.

- The variables in "Stressors in Policing" consisted of stress extrinsic to the organization, occupational stress, which is task-related, personal stress, and organizational stress. Organizational stress is a major cause of stress among the four classifications (Slate, Johnson, & Colbert, 2007).

- The variables in “Occupational Stress” consisted of persistent management variations, strong public inquiry, intense workloads, and absence of support (Sundaram & Kumaran, 2012).
- The variables in “Job Performance” consisted of morale, stress levels, and job performance (Chen, 2009).
- The variables in “How Much Do We Really Know About Criminal Deterrence?” consisted of certainty, severity, and celerity, commitment cost, inhibition due to the threat of legal punishment, and inhibition due to the threat of social criticism (Paternoster, 2010).
- In “Police Foot Patrol and Crime Displacement: A Local Analysis,” the variables consisted of number of sworn members, assault, commercial burglary, residential burglary, drug possession, mischief, robbery, shoplifting, theft, theft from vehicle, theft of bicycle, theft of vehicle, and an aggregate of all these crime types (Andersen & Malleson, 2013).
- In “Impact of Increased Police Presence in Non-Criminogenic Area,” the variables consisted of calls for person crimes, calls for property crimes and calls for disorder items (Barthe & Stitt, 2011).

In each of these studies, the researchers focused on what caused lawbreaking and what could reduce or effect offense. Based on this review, the literature supports that tools and techniques studied are effective at reducing crime.

One weakness to the research that measures effectiveness of deterrents is that it is not possible to measure how many crimes did not occur as a result of the criminal

deterrence; researchers can only measure what events have occurred. Despite the inability to measure what is not known, researchers through the literature express support for the findings in the research – that being, crime rates can be affected by policy and programs available to law enforcement agencies.

Stressors in Policing

Research on LEO stress has established distinct groupings of LEO stress. Police stress theory has resulted in the advancement of LEO stress models (McCreary & Thompson, 2006; Slate, Spielberger, Westberry, Grier, & Greenfield, 1981). For example, there are four groups of stressors applicable to policing: stress particular to the agency, occupational stress that is task connected, personal stress, and organizational stress, which is considered the leading contributor to officer stress (Slate et al., 2007, p. 103). Additionally, the nature of LEO work is stressful, so sources of categories of stress are extensive. Researchers consider LEO work to be one of the most stressful careers (Mayhew, 2001; Tanigoshi, Kontos, & Remley, 2008; Waters & Ussery, 2007). Studies have shown that operational factors (e.g., exposure to bloodborne pathogens, a positive duty to respond to critical incidents) are stressful, and organizational factors upwardly moderate these stressors (Mayhew, 2001; Patterson, 2003).

Studies have also linked stress factors to post-traumatic stress disorder symptoms in LEOs as well as physiological symptoms (Wald, 2009; Gershon et al., 2009). Disasters and intentional violence against human beings are witnessed by LEOs on a regular and consistent basis (Mayhew, 2001; Patterson, 2003). Accordingly, there are links to LEO work and disorders like secondhand traumatization, ancillary traumatic stress, traumatic

countertransference, exhaustion, and compassion fatigue (Hickman, Fricas, Strom, & Pope, 2011). However, the most common investigated trauma among LEOs is post-traumatic stress disorder (Wald, 2009). Post-traumatic stress disorder typically arises within the work setting (Wald, 2009; Gershon et al., 2009). Furthermore, health problems and antisocial behavior have correlations with LEO stress (Gershon et al., 2009). According to Gershon et al. (2009), there are reasons for occupational stress among LEOs, which include paramilitary hierarchy, operational tasks such as protecting people, saving traumatized people, role conflicts, and dangerous work requirements. Further compounding LEO stressors are external systems including the system of justice, public understandings, and media coverage (Mayhew, 2001; Wald, 2009). Adding to LEO stressors, personal life stressor plays a role in LEO stress (Wald, 2009).

Due to the characteristics of LEO work that cause stress, the interaction between LEOs and communities can be further be stressful. Researchers differ on how individual features affect LEOs' aptitude to manage stress. A clearer understanding of the relationship of an LEOs' individual features and the work environment can help determine whether an individual LEO is capable of handling occupational stress (Wald, 2009).

Occupational Stress

Police agencies require annual training to prepare LEOs for the trials of police work and to reduce departmental liabilities; however, this training does not address the stressors that police officers must deal with (Sundaram & Kumaran, 2012). A common statement among police is that there is no such thing as "routine," especially for police

interactions with citizens, and the work environment often generates emotional, physical, and psychological stress for LEOs (Sundaram & Kumaran, 2012). The working conditions of continuous service calls and nonstop psychological stimulus can elicit emotional stress (Lucas et al., 2012). Additionally, the anxiety connected to bodily reactions from traumatic involvements (emotional stress) is common among LEOs (Lucas et al., 2012). Further, shift workers, which LEOs qualify as, have increased inclination for occupational stress (Parkes, 2003). LEOs exhibit high levels of stress as well as apprehension, fear, depression, and anger, and persistent interaction with suspects and the volatile actions in policing yield raised levels of stress (McCarty, Zhoa, & Garland, 2007).

LEO work undergoes continuous change, which requires police departments to keep officers current on topics related to their job tasks. This requirement should include training addressing occupational stress; however, prevention of job stress is not sufficiently understood (Adams & Buck, 2010). There are many reasons for stress for different individuals that correlate partially to the setting, background, religious beliefs, conviction, or a person's general view on life. Regardless, work-related stress can be hazardous within any profession (McCarty & Skogan, 2013), and the research suggests LEOs' exposure to occupational stress is greater than that of other types of workforces.

Job Performance

Studies on LEO stressors correlate LEOs' stress with the scope of the job requirements in their departments. Research has suggested that providing improved leadership may result in enhanced job performance through stress management (Chen,

2009). The inference is that improved leadership correlates to improved stress management among individual LEOs. For example, performance is likely to increase when the leader is more of an instructor than a manager (Nabeel et al., 2007). The implication is that LEO leadership that engages a mentorship model can help focus on the issues that cause stress and deteriorate both wellness and job performance. Modification of factors such as receptiveness, a sense of purpose, task alignment, communication management, sharing of tasks, and promotion of enhancement may reduce stress and improve performance (Nabeel, Baker, McGrail, & Flottemesch, 2007).

Influences that police departments cannot control, such as economic and political issues may affect morale, stress levels, and job performance. Economic downturns put pressure on public sector budgets, which usually call for departmental cuts or reductions in services, increasing stress. Politicians create policies or laws in regard to police processes, strictly for political gain, also resulting in increased police stressors. For example, when the recent economic recession resulted in lower public sector resources, causing unfavorable effects on the budgets of many governments and their several departments. Law enforcement was not immune. Resultant of LEO leadership in affected jurisdictions to depend more on the discipline and professionalism of their LEOs and management staff to sustain service levels while facing reduced resourcing—again, compounding police stressors.

In the past, police departments and its employees believed that job performance led to job security; however, as a result of shrinking budgets, job insecurity has increased and thusly, so had stress among LEOs. Pfeffer and Veiga (1999) found that unlike

preceding groups, by 1998, workers had no guarantee of job security. In recent years increased visibility into police activities and the ensuing inquiries have led to high profile investigations of police activity. The high visibility and increased investigations of officer conduct (especially where officer perspective may vary from the perceptions of the public) produce extra unease in the lives of LEOs, which also unfavorably affects job performance and departmental morale.

To treat stress as it affects LEOs' performance, it is important recognize the sources of stress in combination with changes in human dependability. LEO's cite a lack of accolades for good job performance, inadequate training, and unnecessary paperwork as stressors (Pfeffer et al., 1999). Another culprit in regard to LEO stress is the necessity to attend court as court attendances inhibit LEO's work assignments, personal time, and vacation timetables. Without accounting for these stressors, proper treatment for stress among LEOs is difficult.

Performance value will increase up to an optimal point of stress and then will decrease from the point of optimization (Yerkes & Dodson, 1908). For police to survive (also people in general), the ability to absorb less-than-optimal levels of stress (coping) is periodically required. For LEOs, ability to cope is more prominent because they are faced with communally abnormal behaviors, unlawful activities, victims', and traumatic pain and suffering regularly. Further exasperating the stress that many LEO's already faced, community relations has devolved to the point where communities are distrustful of police activities and the LEOs themselves to the point of anger.

The nature of police work increases officer stress. A major stressor is the necessity to change sleep patterns to accommodate shift variations - shift variations can cause weariness, tediousness, or exhaustion, which diminish productivity. Other components required in LEO work, such as law enforcement activities and maintaining ethical standards are also contributing factors to police stress. These stressors can intensify an officers' feeling of guilt, the perception of threats to bodily well-being, and threaten the perceived sense of safety (both for themselves and for family members). While they want to serve is a primary motivation for many LEOs, introduction to trauma, violence, and other unlawful acts destabilize some LEOs (Gerber et al., 2010). Training opportunities are available to mitigate stressful conditions, which aid in managing stress successfully.

Predominantly studies into the association between stress and job performance tend heavily in the direction of adverse impacts of stress; however, some researchers pose that individuals feeling stress can also realize affirmative consequences. Stress can cause some to focus intensely, which in some cases result in peak performance (i.e., people are driven by impending goals or clear milestones). Nonetheless, a continuous and overpowering workload, impractical limits, unbending work agendas, and insufficient wage can add to a sense of hindrance and amplified points of stress (Iwasaki et al., 2005).

An Integrated Theory of Hot Spot Patrol Strategy: Implementing Prevention by Scaling Up and Feeding Back

Trinidad and Tobago Police conducted the first randomized study of HSP that examined a large area – the study scaled up from local hot spots to a district-wide focus.

The research performed required and refined a formal theory of both the causes and effects of directed patrols in hot spots. The researchers also incorporated into the study feedback to the officers who were doing the actual patrol as to what they accomplished and what effect they had (Sherman et al., 2014, p. 95). The upscaling to a larger district is key to my study, as I intend to utilize HSP to augment human resources, which would require the implementation of HSP beyond a localized area and applied to multiple districts.

This study examined the causes of crime reduction. The authors stated that studies indicate that HSP was effective at reducing crime; however, the studies showed the results of the increased patrol but did not look at causes of those patrols (Sherman et al., 2014, p. 96). The researchers stated, Police managers described a theory of how to cause patrols to occur, as a sustainable strategy for implementing and maintaining a measurable level of patrols (Sherman et al., 2014, p. 96). The researchers stated, “the strategy is essentially a theory of how to affect the causes of crime reduction” (Sherman et al., 2014, p. 96). The researchers imply that a theory of implementation that drives daily operations is missing; we must be able to show a structured view of links in the causal chain that will drive organizational behavior (Sherman et al., 2014, p. 96). I believe my study will require that departments develop strategies that implement an agency-wide HSP strategy that would drive daily operations.

Police agencies are reluctant to implement HSP because of skepticism in regard to displacement. The researchers cited (Braga et al., 2012; Weisburd et al., 200), and stated that one reason for skepticism is the substantial evidence that displacement results are

place-based, not offender based (Sherman et al., 2014, p. 96). Until we can show, a strategy to prevent offenders from leaving the heavily patrolled area (targeted area) to one that has fewer patrols, agencies will remain unconvinced that HSP strategy could reduce total crime (Sherman et al., 2014, p. 96).

The second reason, according to Sherman et al., (2010), is that testing of HSP has not occurred at a district level. "Scaling up" the testing and delivery of hot spot at that level is needed to show police agencies that overall crime will go down despite some displacement (Sherman et al., 2014, p. 96). Researchers have noted, and I agree that District-level testing of a hot spot strategy has not occurred. However, to demonstrate the full benefits implied by theory and existing evidence, it is essential to scale up the evidence along with the delivery of district-level HSP testing, using districts as the units of analysis in randomized controlled trials.

Only when we have evidence on the effects of more patrolling at every hot spot of crime in public places, and not just a random selection of them (e.g., Ratcliffe, Taniguchi, Groff, & Wood, 2011; Sherman & Weisburd, 1995), can we address the skepticism. That evidence is impossible to generate, without a theory of the causes of consistently higher patrol levels in every hot spot, on a long-term, sustainable basis. (Sherman, et al., 2014, p. 96).

Although the literature does cover the effects of HSP on crime rates, it does not explore the impact of HSP when used as a resource management tool- what would the implications for resource levels be, if the data dictates resource allocations. The literature does not explore if effectively managed HSP, can result in re-deployment of equipment

and personnel to other crime reduction efforts, such as, Community Policing and Neighborhood Watch, which would assist in reducing the effects of displacement.

Measuring Perceptions of Police Use of Force

To achieve an in-depth review of the literature, it was necessary to at minimum broach the topic of police use-of-force. Perhaps future studies can show a strong correlation between the police use-of-force (and its perceptions) and resource levels that may also add to officer stress. Furthermore, it is possible that future studies would show that better resource management would allow for improved community relations efforts, which in turn will also relieve stresses on resource levels.

This research concentrated on the opposing views in respects to insights of police use-of-force. Jefferis et al. wrote "differing opinions of the police and these varied opinions can significantly affect perceptions of critical events – such as televised use-of-force arrests (Jefferis, Kaminski, Holmes, & Hanley, 1997; Kaminski & Jefferis, 1998). Both individual and contextual factors have been found to influence individuals' perceptions of police" (Jefferis, Butcher, & Hanley, 2011, p. 82). It is my view that this problem can be studied and examined via the collection and analysis of data.

The social questions of the problem are discussed when Jefferis et al. write; Race affects sensitivities of police misconduct, which exists even when controlling for other social factors such as income, education, and employment (Rice & Piquero, 2005). The likely cause of cultural variances in perceptions of the police is a complex mixture of experiences that happen between police and citizens in minority communities and information about such interactions that are related to the media. (Jefferis, Butcher, &

Hanley, 2011, p. 82). The population comprised of college students of which, 66.3% were female (it is my opinion that both college students and general and females tend to have a more positive view of police). Most of the subjects were female (66.3%, n = 236), traditional students (74.0%, n = 262), and Caucasian (77.5%, n = 276). Additionally, many of the samples had higher levels of household income (46.2%, n = 338 reported annual household incomes of $40,000 or higher) and were at the beginning of their college careers (46.9%, n = 167 were college freshmen, 28.9%, n = 103 were sophomores). Political science majors made up 79.9% (n = 303) while 21.1% of the respondents in the sample (n = 73) were other academic majors. The political orientation of the sample was almost evenly divided between Democrats (37.4%, n = 133), Republicans (33.7%, n = 120), and none or other (28.91%, n = 103). (Jefferis, Butcher, & Hanley, 2011, p. 87).

Most of the sample believed that the police generally used too little or the right amount of force (60.3%, n = 211). The majority of subjects felt that racial profiling was not necessary for effective policing (80.1%, n = 277). These two indicators were used to measure support for the police and aggressive police practices. Regarding the two indicators of police contact, about a third of the sample responded that a person close to them had either no contact or only given a ticket (34.3%, *n* = 122). Over half of the sample reported someone close to with a record of arrest (51.7%, *n* = 184) and over 10% said someone close to them being detained forcefully (14.0%, *n* = 50). The second measure of police contact was whether the respondent him/herself had previous contact with the police. Over a third of the sample reported receiving a ticket (36.0%, *n* = 128)

and 16.6% (*n* = 59) of the respondents reported being arrested or forcefully arrested. (Jefferis, Butcher, & Hanley, 2011, p. 87).

Police officers' opinions of the use of unnecessary force by officers. This study examined the assumptions that the use of excessive force was acceptable to LEO's, and they are doubtful to report its use. The vignettes were a combination of many individualities and facets of suspects, and LEO's replies to those articles were studied. A holding was that officers would be less likely to report the use-of-force when it seems that the suspect was involved in a criminal action.

Phillips (2010) suggests, "the research leads to the belief that excessive or unnecessary force can be acceptable under the proper circumstances (Carter, 1985; Crank, 1998; Herbert, 1998, 2001; Reiss, 1972; Skolnick & Fyfe, 1993; Van Maanen, 1985; Westley, 1953)". Phillips writes:

Studies in Indianapolis, IN, and St Petersburg, FL, examined the use of coercive force and included police attitude dimensions. The association between the use of increased levels of force held for officers who possessed attitudes that are aligned with 'pro-culture' or traditional tenets of policing (e.g., aggressive law enforcement role, willing to violate a citizen's rights) and officers who held midrange beliefs of policing (e.g., aggressive but selective law enforcement, favorable view of citizens) (Terrill et al., 2003). Carter (1985) found that almost two-thirds of officers believed retaliation justified excessive force, not just self-defense. In 2000, Weisburd and Greenspan analyzed survey data from 925 LEO's in 113 different police departments. A majority of officers disapproved of the use of excessive force, but 'a substantial minority believed that

officers should be permitted to use more force than the law currently allows and found it acceptable to sometimes use more force than permitted by the laws that govern them' (p. 3). (Phillips, 2010, p. 199)

The findings show Completed vignettes contained an even distribution of the three types of force: 40% verbal, 30% slap, 30% punch. Table 1 provides response frequencies for the dependent variables. Most respondents reported that the force described in the vignettes was unacceptable. Only 17.5% of respondents felt that the use-of-force was acceptable at any level. The mean for the officer's opinion regarding the use-of-force was 2.16, similar to findings reported by Ivkovic (2005). Respondents are doubtful, however, that any officer would report the behavior to a supervisor. Less than 15% of LEO's responded that any officer would be likely, either somewhat or very likely, to report the behavior. The mean for the dependent variable 'Report to a Supervisor' was 2.12.

Summary of Literature Review

An appraisal of the literature shows that there is a gap in research as it relates to the effects of HSP on resource management, specifically, can HSP aid in stress management. There is a voluminous body of research addressing the connection between HSP and its impact on crime rates and police and community relations to include perceptions into the use-of-force by police. The appraisal of the literature shows to me that researching methods to improve stress management through HSP can not only bridge the gap between research in regard to officer stress and HSP but would also be beneficial in regard to improving officer performance by reducing stress, which in turn would allow

managers to address community relations issues better. I believe this would be a valued addition to the body of research in the fields of HSP and Officer Stress, as well as add to the understanding and improving social justice.

Chapter 3: Research Method

Introduction

The purpose of this quantitative study was to determine whether HSP is an effective tool to reduce officer stress. Studies have shown that HSP is effective for crime reduction, but I wanted to answer whether departments that utilize HSP experience lower officer stress. To answer this question, I looked at several variables: organizational police stressors (independent variable), occupational police stressors (independent variable), HSP patrol strategy (control variable), officer stress (dependent variable). I used the Operational Police Stress Questionnaire (PSQ-Op) and the Organizational Police Stress Questionnaire (PSQ-Org) survey instruments. The PSQ-Op and PSQ-Org are both 20-items each. The questionnaires can be used together or individually, allowing researchers greater flexibility in focus (focus can be on either operational or organizational stress; Mcreary & Thompson, 2006). Scoring of each PSQ is done through summing or averaging the 20 items from each to create separate PSQ-Op and PSQ-Org scale scores. The short length of each PSQ helps to reduce to burden placed on officers completing them (Mcreary & Thompson, 2006).

Research Design and Rationale

Because the purpose of this study was to investigate whether HSP affects operational and organizational stressors when introduced as a controlling variable, a quantitative study is suitable. The dependent variable was LEOs' stress, and the independent variables were the two components of police stress (operational and organizational) as proposed by McCreary and Thompson (2006). HSP acted as a control

variable, which is an independent variable that may cover the impact of the independent variable(s) on the dependent variable, if left uncontrolled. In research, a moderating variable left uncontrolled can be considered a confounding variable (Yarnold, 2015). Confounding variables suggest that there are differences in the ability of people to deal with stressors (Luria & Torjman, 2009; Meurs & Perrewe, 2011). I used a quantitative, experimental design to address the need for more research on the link between LEOs' job stress by factoring the role of HSP.

Methodology

Population

Using an online survey (SurveyMonkey) with permission from site-administrators, questionnaires were posted in police only forums. The questionnaires did not necessitate participants to reveal any personally identifiable information. to shield the identities of the LEOs participating in the study. Additionally, to uphold anonymity and protect participants, SurveyMonkey performs a continuous review of network equipment, workstations, servers, and applications. Furthermore, to make sure that each of these items is secure, SurveyMonkey collaborates with multiple third parties to perform bi-annual tests. Finally, to ensure participant protections, I did not share my account information and ensured to protect my SurveyMonkey account with a complex password.

Sampling and Sampling Procedure

To gather data, social media sites exclusive to the law enforcement community were selected. Use of a random sampling approach ensured that all LEOs who participated had similar odds of selection. Researchers have previously used this

sampling approach when studying similar topics (see Grawitch et al., 2010; Shane, 2010). Active LEOs of varying age, race, sex, and other demographic features were selected from the social media sites.

This study was approved by the Institutional Review Board (IRB) of Walden University (approval no. 01-18-19-0448955) before posting the survey link to the participants. Participation in the survey was voluntary, and before participating in the survey, the participants explicitly consented. Information was given to participants indicating that they could refuse to answer any question and that they were free to withdraw from the study at any time without being penalized. The explanation provided to participants stated that the survey would examine their perceptions of their daily work experience. These methodological considerations were in alignment with previous research (see Grawitch et al., 2010; Shane, 2010; Summerlin et al., 2010). On completion of the data collection, I downloaded the data from SurveyMonkey in alignment with Survey Monkey's security policies that ensure confidentiality.

Finally, sample size and the response rate derived from the sample are important to assure confidence in the results of the study. Therefore, prior to gathering data for this research, I used G*Power software to estimate the sample and effect size occurred before data collection (see Faul et al., 2007).

Procedure for Recruitment, Participation, and Data Collection

Participation in the survey was voluntary. Before the distribution of the survey to participants, approval was obtained to conduct my study from the IRB of Walden University. After obtaining permission from the selected forum administrator, LEOs

responded to a link posted in the social media forum. Participation in the survey required the explicit consent of the participant. Participants received information lettimg them know their ability to refuse to answer any question and that they were free to leave the study at any time without penalty. Each participant was ensured that the study would survey their observations of their daily work experience. These concerns align with prior studies (see Grawitch et al., 2010; Shane, 2010)

On completion of the data collection, the results were tallied by exporting to excel from SurveyMonkey; the gathering of personally identifiable information did not occur. SurveyMonkey has security measures in place that prevent individual identification; all data were in aggregate form. LEOs, not their departments, were the unit of analysis in this study. Finally, G*Power software computed the appropriate sample and effect size (Field, 2013). G*Power estimated the sample size before data collection.

Instrumentation and Operationalization of Constructs

This study was survey-based with questionnaires. The PSQs are instruments published in the public domain. The creation of the 20-item PSQ-Op was to measure operational stress (most common stressor for LEOs). The relationship between stress and work has been a rising topic for discussion and research over the past few years (Mcreary & Thompson, 2006). According to Mcreary and Thompson (2006), the PSQ-Op is psycho-metrically sound to measure the operational stressors that police work involves; therefore, beta testing was unnecessary.

Dependent Variable

The dependent variable of this study was police officer stress (PSQ-Total). In alignment with other research in police officer stress, I used a composite measure, which combined the data from the PSQ-Op and the PSQ-Org. A factor analysis of PSQ-Op and PSQ-Org yielded factor scores. The factor scores were linearly combined (see Shane, 2010), to become the dependent variable of PSQ-Index. This statistical analysis strategy underscored the obvious fact that if I used the raw PSQ-Op and PSQ-Org, rather than their factor scores, the analysis could be confounded by multicollinearity.

Independent Variables

Two components of police stress, PSQ-org, and PSQ-op served as the independent variables in the study. These components are derivative of the questionnaire developed by McCreary and Thompson (2006). The 20-item PSQ-Org measures organizational stress. The PSQ-Org not only measures police stress, but also psychometrically measures stressors associated with policing that can later be used in future research, to examine the relations among physical health, stress, and psychological well-being (Mcreary & Thompson, 2006). The PSQ-Op and PSQ-Org measure stress by using 20, 7-point Likert-type questions. The data from the PSQ-org and the PSQ-op will undergo factor analyses.

Control Variable

Research has shown HSP as an effective practice to reduce crime; the researchers state, “The strategy was essentially a theory of how to affect the causes of crime reduction” (Sherman et al., 2014, p. 96). A majority of studies have indicated that when

used by police, HSP has a beneficial impact on crime (Weisburd and Telep, 2014, p. 202). In this study, HSP was the control variable – either an officer participates in HSP or does not (yes or no, 1 or 2). This study will determine if HSP affects officer stress.

Data Analysis

This section discusses activities conducted to complete the data analysis for this study, a description of actions taken to prepare for statistical analysis and the subsequent descriptive statistics. This section also presents the steps taken to test the hypothesis.

Descriptive Statistics

First, using SPSS statistical software, the scrutinization of the raw data occurred, to ensure that all cells in the spreadsheet contained the desired entries, followed by the computation of descriptive statistics. Descriptive statistics included measures of central tendency (mean, median, etc.). Statistical descriptions are in numbered tables.

Before testing the hypothesis, principal component analysis (PCA) confirmed, the number of underlying components in the PSQ. The combination of PSQ-Op and PSQ-Org formulate the PSQ-Index (for this study PSQ-Total), Shane (2010). Combining the components followed by factor analysis of the resultant scores confirmed that the factor scores linearly combined to form an index for the independent variables of the study (see Shane, 2010).

As Likert-type items could cause multicollinearity when used in multiple regression analyses, the performance of a PCA was required. By performing regression analysis, the resultant factor scores, mitigate the undesirable effects of multicollinearity. Studies show that factor scores are free from the confounding effects of multicollinearity

(Eyduran et al., 2010). It is my position that by conducting PCA, I ensured a vigorous test of the hypotheses.

Scholarly works indicate that the number of empirical dimensions underlying the police stress construct is still uncertain (Irniza, Emilia, Muhammad Suhainizam, & Nizam Isha, 2014; McCreary & Thompson, 2006; Shane, 2010). Although, Shane (2010) empirically demonstrated that the organizational stress category of the police stress questionnaire comprised of six (6) different underlying factors, my analysis shows that there are four (4). Seeing that the PSQ-Score has dual categories (i.e., PSQ-Op and PSQ-Org), if one category has four underlying factors, then it follows that the combination of PSQ-Op and PSQ-Org will contain more than four factors. It is my position that empirical scrutiny of both PSQ-Op and PSQ-Org data has the potential to answer this significant question.

Hypothesis Testing

The research question directed this study. Testing of the hypotheses answered the research question. The research question and hypothesis was as follows:

Research Question: Does the application of hot spot policing affect officer stress?

H_0: The application of hot spot policing will not influence officer stress.

H_1: The application of hot spot policing will influence officer stress.

The Hypothesis tested the proposition that police officers' job stress has a relationship with police officers' participation in HSP. This hypothesis was tested using the framework of multiple regression, as shown in the multiple regression framework equation:

$$PSQ = b_0 + b_1PoP_i + b_2PoR_i + b_3HSP_i$$

In this equation, officer stress represents the dependent variable of PSQ, $b_0$was defined as the constant term, b_1 represents the factor score for PSQ-Op (PoP), b_2 represents the factor score for PSQ-Org (PoR), b_3 represents the control variable HSP. The *b*-values indicate the relationship between the dependent variable and the independent variables (predictors). Were-as the *b*-value is positive; there would be a positive relationship between the dependent variable and independent variable, and conversely, a negative *b*-value would indicate a negative relationship (Field, 2013, p. 338). Furthermore, *b*-values also indicate to what degree each independent variable affects the dependent variable should all predictors hold persistent (Field, 2013, p. 338).

Threats to Validity

External Validity

In this study, selection bias may be an external threat to validity. Selection bias arises when the sample that is studied does not sufficiently characterize the population that the researcher intends to study. When selection bias happens, it is problematic (if not impossible) to contend that the outcomes of the study can be generalized to the broader population of the sample (Bagozzi et al., 1991). This study did not involve a non-probability convenience sample of LEO's, resultant in no significant threats to external validity; however, extrapolation is only possible to populations of LEO's comparable to that from the sample pool. Establishing the sample was unsystematically selected from a population of LEO's with comparable characteristics was necessary to mitigate the potential effects of sample selection bias. Former empirical research on police stress and

job performance relationships used non-probability or convenience sampling (e.g., Shane 2010).

Internal Validity

In a report by McCreary & Thompson (2006), there was confirmation of the internal consistency (reliability) of the instruments used in this study. An assessment of reliability for both the PSQ-Op and PSQ-Org instruments occurred with the intent of finding items that were having an adverse effect on the scales' internal consistency – determinations were limited to stress ratings.

Computation of Cronbach's alpha reliability occurred for both the Operational and Organizational scales. The Cronbach's alpha for the PSQ-Op was .90, and the alpha for the PSQ-Org was .89. The use of corrected item-total correlations determined whether an item was contributing poorly to its scale's internal consistency (Mcreary & Thompson, 2006). Nunnally and Bernstein (1994) stated these statistics should be greater than or equal to .30. On the PSQ-Op (Shift Work) was the only item that did not meet the requirement. On the PSQ-Org (Lack of Resources/Inadequate Equipment) was the only item that did not meet the requirement.

Ethical Procedures

As it is the primary responsibility of any Researcher to act ethically, more especially, where human subjects are studied, it is vital to ensure and maintain ethical standards for this study. To ensure the protection of the participants, strict adherence to ethical standards as set forth by Walden University occurred.

I obtained agreements from each participant; by agreeing to complete the questionnaires, the participants will be indicating they are willing and that their participation is voluntary. The questionnaire will ask the participants not to reference their name or provide any personally identifiable information when completing the questionnaires. There will be strict confidentiality of participants and the concealment of data provided. Copies of the executive summary will be available to participants at no cost. These procedures will ensure the ethical treatment of the participants.

Summary

This study was a quantitative investigation of the relationship between HSP and officer stress, controlling for departmental usage of HSP. Included in this chapter of the study is information on the studies design and its rationale; a presentation of the methodology used to conduct the study, identification of the population, identification of the population and sampling frame, and finally the procedures of the study.

Chapter 4: Results

Introduction

The purpose of this quantitative, survey-based correlational study was to investigate the relationship between police officer stress (PSQ-Index), organizational stressors (PSQ-Org), operational stressors (PSQ-Op), and HSP. The purpose of developing the research question was to test the relationships between the variables under study. Examination of the following research questions ensued by testing its related hypotheses:

Research Question: Does the application of hot spot policing affect officer stress?

H_0: The application of hot spot policing will not influence officer stress.

H_1: The application of hot spot policing will influence officer stress.

Data Collection

For this study, it was necessary to survey LEOs from various police departments throughout the United States to provide data. In keeping with accepted practices, my methodology conforms to similar studies (see Grawitch et al., 2010; Shane, 2010; Summerlin et al., 2010). I identified several law enforcement-only social media forums, and with site-administrator approval, I posted a link to the survey in SurveyMonkey.

It was important to draw a strong random sample from the populations, so I used G*Power to determine what a vigorous sample size would be. The results of the G*Power sample calculation were an actual power of 0.95, the minimum required sample

size was 107 (see Figure 2). Closing of the survey did not happen until the achievement of the minimum number indicated by G*Power, with a sample size of 151.

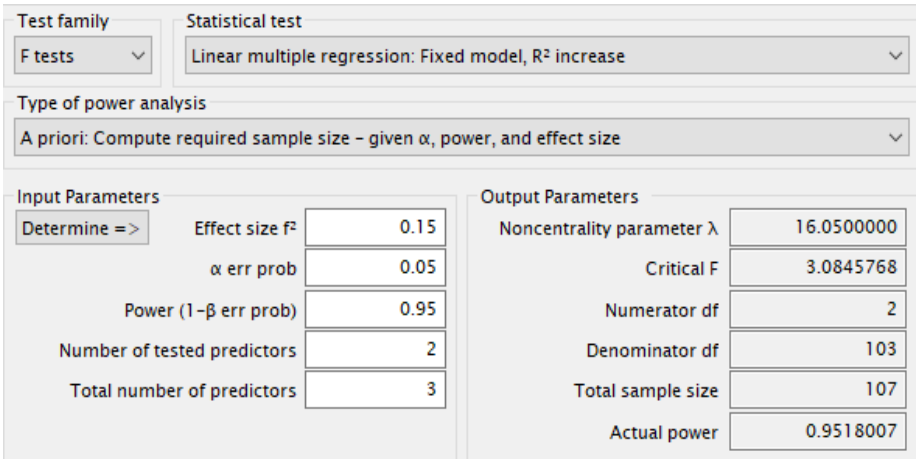

Figure 2. G*Power calculation.

Data collection began March 15, 2019, and closure of the survey occurred June 5, 2019. After downloading survey data from SurveyMonkey to SPSS, reliability analysis produced the Cronbach's alpha, which measures internal consistency between items in the scale. The Cronbach's alpha for the PSQ-Op was .92, and the alpha for the PSQ-Org was .94, indicating that both scales have relatively high internal consistency (a reliability coefficient of .70 or higher is considered acceptable). The research methodology and data collection methodology were in practice of others who have conducted similar research (see Grawitch et al., 2010; Shane, 2010; Summerlin et al., 2010).

Results of the Data Analysis

Descriptive Statistics

To depict participants and the data set, the production of descriptive statistics occurred. There were 170 total responses, of which 151 participants completed the survey. The descriptive statistics presented in this section are from survey questions,

which were formulated to identify participants who participate in HSP activities and the elements particular to HSP—specifically, familiarization with HSP, time spent on HSP, and department size. This collected data identified the participant's level of involvement in HSP activities. Table 1 presents a distribution of the sample based on participation in HSP (for coding purposes 3 = *not sure* and 2 = *no*).

Table 1

Participation in Hot Spot Policing

		Frequency	Percent	Valid percent	Cumulative %
Valid	Yes	67	44.4	44.7	44.7
	No	82	54.3	54.7	99.3
	Not sure	1	7	7	100.0
	Total	150	99.3	100.0	
Missing	System	1	7		
Total		151	100.0		

The sample in Table 1 shows the officers who do not participate in HSP, which was the majority (n = 82, 54.3%). Table 2 presents whether the participant was familiar with HSP theory (I asked the participant if they were familiar with the term *hot spot policing*—the question required a *yes* or *no* response). Table 2 shows that most officers were familiar with the HSP (n = 127, 84.1%). Table 3 presents how much time participants expended on HSP.

Table 2

Familiarization with Hot Spot Policing

		Frequency	Percent	Valid percent	Cumulative %
Valid	Yes	127	84.1	84.7	84.7
	No	23	15.2	15.3	100.0
	Total	150	99.3	100.0	
Missing	System	1	7		
Total		151	100.0		

Table 3

Time Spend on Hot Spot Policing

		Frequency	Percent	Valid percent	Cumulative %
Valid	1 hour	34	22.5	22.7	22.7
	8 hours	9	6.0	6.0	28.7
	10 minutes	2	1.3	1.3	30.0
	30 minutes	15	9.9	10.0	40.0
	NA	90	59.6	60.0	100.0
	Total	150	99.3	100.0	
Missing	System	1	7		
Total		151	100.0		

Most officers indicated that they did not participate in HSP (n = 90, 59.6%); however, of these participants, most officers expended 1 hour in HSP activities (n = 34, 22.5%). Additionally, some participants who indicated that they participate in HSP indicated that time spent in HSP is NA (this would on its surface indicate that they do not participate in HSP as time spent on HSP is an essential element of HSP theory). Research has indicated that each added minute of time officers expend in a hot spot increases the amount of time after officers left before disorderly activity arose, and a period of 14 to 15 minutes had the highest survival time without any crime or disorder (Koper, 1995).

Table 4 presents department size. The sample consisted primarily of officers who serve in a department with fewer than 500 officers (n = 86, 57%). Considering that my survey was not targeting any department with a known department size, I wanted to identify the department size of each participant. Although not a part of this study, this data could be useful for future research.

Table 4

Department Size

		Frequency	Percent	Valid percent	Cumulative %
Valid	Less than 500	86	57.0	57.3	57.3
	Less than 1,000	22	14.6	14.7	72.0
	1,000 to 5,000	32	21.2	21.3	93.3
	More than 5,000	10	6.6	6.7	100.0
	Total	150	99.3	100.0	
Missing	System	1	7		
Total		151	100.0		

Table 5 shows the descriptive statistics for the variables in the study. Police stress (PSQ_Index) operated as the dependent variable in this research. The factor scores linearly combined to form an index for the independent variables “PoP” and “PoR.” Combined factor scores determined the dependent variable of PSQ_Index. HSP served as the control variable, as I hypothesized that the use of HSP would affect police officer stress.

Table 5

Descriptive Statistics for the Constructs

	N	Min.	Max.	Mean	*SD*
HSP	150	1	3	1.56	.511
PoP	147	-1.28	1.30	.0000	.54678
PoR	146	-1.37	1.37	.0000	.51737
PSQ_Index	150	-9.76	8.23	.0000	3.74635
Valid N (listwise)	143				

Assumption Testing

The next step in the data process was to test the assumptions of the data and complete hypothesis testing. First, the examination of the data set determined if there were any influential outliers, and there were not any. To determine the normal distribution of the data, I tested the normality of the residuals. Literature indicates that researchers must observe the residual values, not the unobserved errors (Field, 2013; Francis, 2013). Use of SPSS facilitated observing the extent of normality of the residuals in the study. Calculation of normality occurred within the framework of a p-p plot (Figure 3) of standardized residuals as well as a histogram (Figure 4). Figure 4 shows the histogram of the dependent variable (police officer stress).

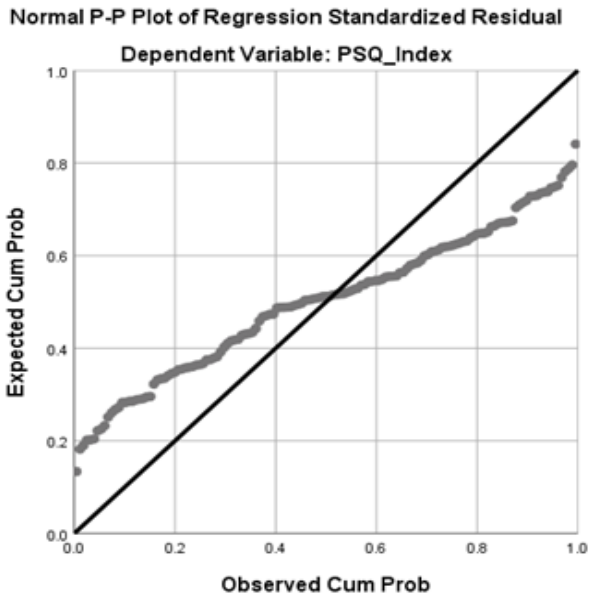

Figure 3. Normal p-p plot for police officer stress (PSQ_Index).

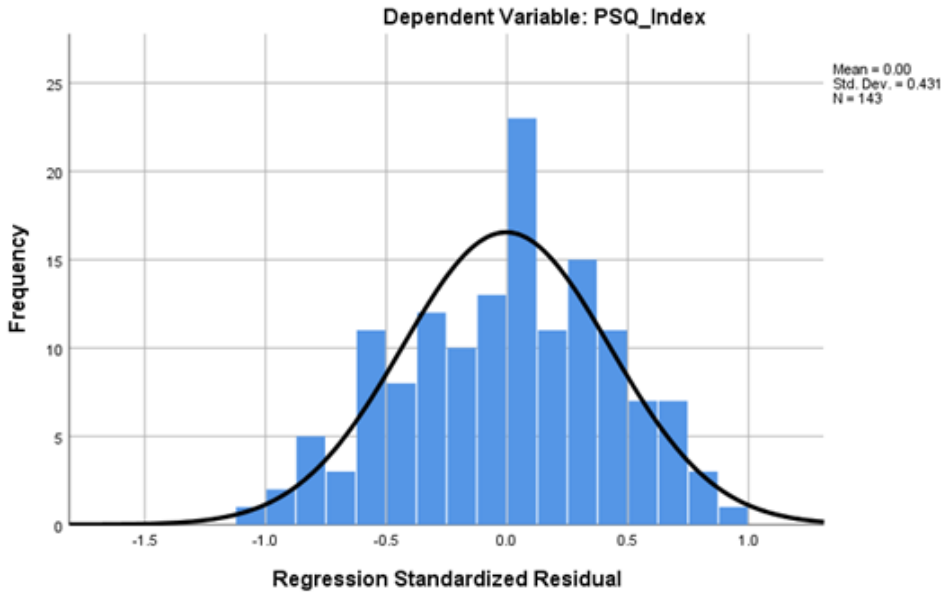

Figure 4. Histogram for police officer stress (PSQ_Index).

The normal p-p plot in Figure 3 and the histogram in Figure 4 indicate no issue with normality. In accordance, my observations are that the degree of nonnormality was insignificant and does not cause doubt on the regression coefficients of the multiple

regression estimations. As such, no attempt to transform the data occurred (Field, 2013). The next step was to check the data for multicollinearity. Evidence showed that multicollinearity was absent in the data as confirmed by (a) an examination of bivariate correlations and scatterplots between each pair of the independent variables, and (b) the SPSS output on the variance inflation factor shown in Table 6. Both the tolerance tests and variance inflation factor tests were within the acceptable range (Field, 2005).

Table 6

Collinearity Statistics Coefficients

Model		Tolerance	VIF
1	HSP	1.000	1.000
2	HSP	.982	1.018
	PoP	.628	1.592
	PoR	.636	1.573

Note. Dependent variable = PSQ_Index; VIF = variance inflation factor

After completing a check for multicollinearity, a check for heteroscedasticity occurred, which established an absence of heteroscedasticity as the bivariate distribution of the data was realistically and consistently within the regression line of best fit. A further check for heteroscedasticity ensued by using scatterplots between the dependent variable and each of the independent variables.

My next step was to conduct a Durbin-Watson test of autocorrelation. Autocorrelation primarily occurs with time-series data (Francis, 2013). The computed Durbin-Watson coefficient was 1.79. A Durbin-Watson test determined whether there was serial correlation between errors in the regression model. It also tested for correlation in adjacent residuals to determine if there was a correlation in unobserved errors. Durbin-Watson tested the assumption of independent errors.

Notably, the Durbin-Watson test statistics fall in the range of zero (0) and four (4). A value of two (2) suggests that the residuals were uncorrelated. A value greater than two (2) would mean that adjacent residuals were negatively correlated, but a value below two (2) would indicate that adjacent residuals were positively correlated. As the value of adjacent residuals for the present study was 1.79, the empirical evidence indicates that there was no autocorrelation in the dataset.

The final stage preceding testing of the hypotheses was to test the assumption of linearity of the data. The linearity assumption is an essential assumption of multiple regression analysis. Testing of this assumption happened by examining scatterplots and correlation between the dependent variable and each of the independent variables. Absence of bivariate outliers in the data set supported the linearity assumption (Field, 2013; Francis, 2013).

Component Factor Analysis

As previously argued in Chapter 3, an empirical determination of the sub-dimensions that characterize the data in the 40-item PSQ (the combined PSQ-Op and PSQ-Org) was essential. Factor analysis was necessary to mitigate the potential effects of multicollinearity on a multiple regression analysis. The type of factor analysis that I conducted was a Principal Component Analysis (PCA) to change the Likert data from the 40-item scale to factor scores. By utilizing a PCA, it was possible to use the factor (component) scores, which are absent multicollinearity artifacts, allowing testing of the hypotheses (Eyduran et al., 2010).

Before the PCA, there was a run of a Kaiser- Meyer-Olkin (KMO) measure of sampling adequacy with a result of .899 and Bartlett's test of sphericity (X^2 = 4092.099/903, $p < .000$). The results of the KMO indicated that a PCA should occur since the 40-item dataset was not an identity matrix (Field, 2005). Table 7 shows the statistics supporting the acceptability of the data for the PCA. Also, as noted by Field (2005), PCA results are always massive and oversized (see Table 8).

Table 7

Results of KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy		.899
Bartlett's Test of Sphericity	Approx. Chi-Square	4092.099
	df	903
	Sig.	.000

The PCA extraction in Table 8 appeared to be reassuring, with the smallest loading of .452. Table 9 shows the variance extraction results, with the number of components extracted. Displayed in Table 10 is the factorial solution of the PCA. Using the criteria of a varimax rotation and Eigenvalues greater than 1.00, a four-factor solution explained 69.96% of the variance in the PSQ data set ($\alpha = .93$). Table 10 shows the results of the PCA component matrix. A scree plot gives further validation of the number of factorial components used (see Figure 5). In reviewing previous studies, this was an accepted procedure to substantiate the number of factorial components (Dinev & Hart, 2004; Matheson et al., 2014). The scree plot of the four-factor PCA solution presented in

Figure 5 shows a break at the four-factor point, confirming the utilization of a four-factor solution.

Table 8

PCA Communalities

	Initial	Extraction
PoP1	1.000	.452
PoP2	1.000	.661
PoP3	1.000	.550
PoP4	1.000	.534
PoP5	1.000	.560
PoP6	1.000	.615
PoP7	1.000	.677
PoP8	1.000	.679
PoP9	1.000	.621
PoP10	1.000	.734
PoP11	1.000	.797
PoP12	1.000	.629
PoP13	1.000	.553
PoP14	1.000	.682
PoP15	1.000	.665
PoP16	1.000	.711
PoP17	1.000	.618
PoP18	1.000	.737
PoP19	1.000	.679
PoP20	1.000	.701
PoR1	1.000	.557
PoR2	1.000	.624
PoR3	1.000	.613
PoR4	1.000	.715
PoR5	1.000	.717
PoR6	1.000	.635
PoR7	1.000	.514
PoR8	1.000	.715
PoR9	1.000	.693
PoR10	1.000	.524
PoR11	1.000	.704
PoR12	1.000	.707
PoR13	1.000	.762
PoR14	1.000	.668
PoR15	1.000	.618
PoR16	1.000	.648
PoR17	1.000	.589
PoR18	1.000	.664
PoR19	1.000	.616
PoR20	1.000	.767

Table 9

Total Variance Explained

	Initial Eigenvalues			Extraction sums of sqaured loadings			Rotation sums of squared loadings
Component	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %	Total
1	16.251	37.793	37.793	16.251	37.793	37.793	7.508
2	2.518	5.855	43.648	2.518	5.855	43.648	6.913
3	2.010	4.675	48.323	2.010	4.675	48.323	9.559
4	1.692	3.936	52.259	1.692	3.936	52.259	2.387
5	1.592	3.703	55.962	1.592	3.703	55.962	5.332
6	1.408	3.275	59.238	1.408	3.275	59.238	7.016
7	1.268	2.949	62.187	1.268	2.949	62.187	3.799
8	1.202	2.795	64.982	1.202	2.795	64.982	1.457
9	1.093	2.542	67.524	1.093	2.542	67.524	3.358
10	1.048	2.437	69.960	1.048	2.437	69.960	7.789
11	.942	2.192	72.152				
12	.910	2.117	74.269				
13	.807	1.877	76.146				
14	.738	1.716	77.861				
15	.706	1.642	79.504				
16	.645	1.499	81.003				
17	.633	1.472	82.475				
18	.576	1.339	83.813				
19	.529	1.231	85.044				
20	.521	1.212	86.256				
21	.449	1.044	87.300				
22	.437	1.017	88.317				
23	.435	1.011	89.329				
24	.394	.915	90.244				
25	.386	.898	91.142				
26	.360	.837	91.979				
27	.351	.816	92.795				
28	.313	.728	93.523				
29	.298	.692	94.215				
30	.273	.634	94.849				
31	.268	.623	95.472				

Table 10

Component Matrix

	Component									
	1	2	3	4	5	6	7	8	9	10
HSP	-.125	-.222	.317	.751	-.122	.128	-.064	.156	-.112	.110
HSP_T	-.063	-.023	.408	.684	-.218	.107	.139	.244	.161	.152
DPT_S	.040	.338	.061	-.207	.489	.148	-.169	.355	.184	.326
PoP1	.392	.458	.191	.084	-.154	-.043	.079	-.050	.253	-.191
PoP2	.472	.618	.093	.087	.058	-.088	.062	-.130	.028	-.093
PoP3	.481	.476	.248	.044	.021	.043	.108	.027	-.040	.-152
PoP4	.455	.517	.110	-.016	.068	-.303	-.053	.004	-.207	.171
PoP5	.618	.267	.095	-.051	-.178	.008	-.047	.087	-.112	-.311
PoP6	.561	.436	.110	.112	.226	-.218	-.117	.083	.015	-.110
PoP7	.674	.224	-.201	.087	-.120	.065	-.129	.136	.008	-.150
PoP8	.673	.102	-.149	.012	-.263	-.012	-.162	.148	.177	-.194
PoP9	.488	-.019	.283	-.287	.034	.125	.382	.277	-.257	.096
PoP10	.530	.046	-.096	-.270	-.401	.425	-.029	.084	-.137	.208
PoP11	.676	-.001	-.119	-.206	-.397	.274	-.001	.195	-.074	-.042
PoP12	.707	.174	.046	.016	-.253	-.074	-.117	.302	.078	-.066
PoP13	.646	.260	-.060	-.070	-.204	.000	-.295	.037	.130	.329
PoP14	.627	-.133	-.387	.139	.081	-.014	-.262	-.049	.131	-.113
PoP15	.647	-.093	-.352	.390	-.031	.129	-.057	-.122	-.042	.059
PoP16	.629	-.126	-.343	.153	.037	-.194	.208	.255	-.221	.139
PoP17	.646	-.053	-.257	.079	.151	.090	.122	.097	.108	.068
PoP18	.721	.025	-.435	.165	.052	.011	.004	.025	-.065	-.038
PoP19	.730	-.018	-.266	.102	.049	-.152	.146	.043	.060	.138
PoP20	.719	-.227	-.391	-.003	.000	.026	.065	-.033	.151	-.052
PoR1	.527	-.289	.177	-.214	-.116	-.231	-.053	.281	-.097	-.118
PoR2	.721	-.287	.027	-.036	.083	-.161	-.083	.135	.034	.106
PoR3	.718	-.107	.012	-.012	.016	-.302	.111	.036	-.274	.149
PoR4	.644	.084	.061	-.042	-.215	-.086	.262	-.268	.084	.063
PoR5	.706	-.169	.143	-.012	-.163	-.249	.183	-.179	.138	.098
PoR6	.688	.024	.036	-.083	-.215	-.058	.185	-.268	.176	.194
PoR7	.639	-.072	.205	-.078	-.012	-.153	-.018	-.072	.339	.361
PoR8	.638	-.062	.076	-.085	.203	.263	.422	.048	.151	.021
PoR9	.692	-.112	.193	-.022	.186	.374	-.104	-.211	.120	.000
PoR10	.600	.033	-.040	.102	-.019	-.037	.175	-.303	-.223	-.119
PoR11	.561	-.456	.321	-.082	-.003	-.080	-.087	.134	.017	-.196
PoR12	.639	-.381	.239	-.096	-.097	-.200	-.188	-.088	.171	-.128
PoR13	.717	-.098	.102	-.024	-.015	.307	-.252	-.162	-.146	.045
PoR14	.726	-.198	.235	-.082	.016	.037	-.051	-.077	-.184	-.040
PoR15	.643	.141	-.014	.117	.159	-.054	-.262	-.237	-.367	.208
PoR16	.679	-.254	.310	.028	.199	-.161	-.170	-.106	-.034	-.047
PoR17	.637	-.150	-.033	.009	.395	-.076	-.069	.214	.077	-.122
PoR18	.664	-.012	.016	.038	.344	.238	.128	-.060	.199	-.134
PoR19	.645	.008	-.026	.126	.224	.117	.302	.034	-.105	-.173
PoR20	.686	.035	.297	.019	.127	.342	-.181	-.115	-.149	.013

Note. Extraction method = component analysis; 10 components extracted

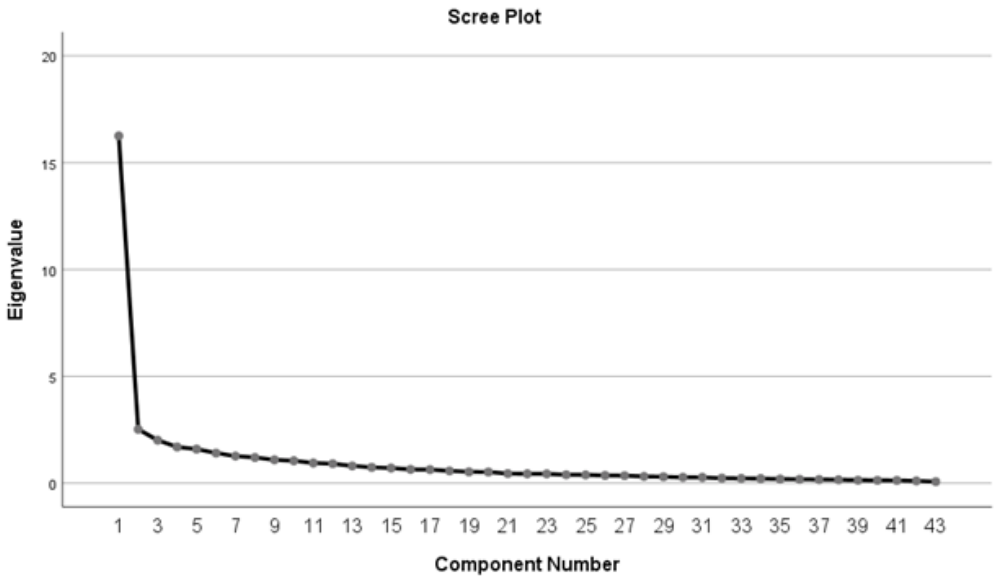

Figure 5. Scree plot of the principal component analysis.

Research Question

The hypothesis used to test the research question is as follows:

H_0: The application of hot spot policing will not influence officer stress.

H_1: The application of hot spot policing will influence officer stress.

The framework used to test this hypothesis was multiple regression, as shown in the multiple regression framework equation:

$$PSQ = b_0 + b_1PoP_i + b_2PoR_i + b_3HSP_i$$

In this equation, officer stress represents the dependent variable of PSQ, $b_0$was defined as the constant term, b_1 represents the factor score for PSQ-Op (PoP), b_2 represents the factor score for PSQ-Org (PoR), b_3 represents the control variable HSP. The *b*-values indicate the relationship between the dependent variable and the independent variables (predictors).

For this study, during the model estimation process to test the hypotheses, I performed a multiple regression analysis using SPSS software to answer the research question and test the corresponding hypotheses. Table 11 shows the results of the multiple regression analysis.

Table 11

SPSS Model Summary

					Change statistics				
Model	R	R^2	Adjusted R^2	SE of estimate	R^2 of change	F change	df1	df2	Sig. f change
1	.118[a]	.014		3.78919	.014	1.990	1	141	.161
2	1.00[b]	1.000	1.000	.00000	.986	2.058E+17	2	139	.000

Note. a. Predictors = (constant), HSP; b. predictors = (constant), HSP, PoR, PoP; c. dependent variable = PSQ_Index

The overall regression model (see Table 11) was significant; however, the simple correlation between HSP and officer Stress (.118) indicating the predictor HSP does not account for unique variance. Looking at the R^2 for the first model, we can see a value of .014 or 1.4% of the variation in officer stress, indicating that model 2 accounts for nearly 100% of the variation in officer stress.

Table 12 reports the "Beta" of each variable. The *b*-values inform us of the relationship between officer stress (dependent variable) and each independent variable (HSP, PoP, and PoR). The *b*-value, if positive, shows a positive relationship between the dependent and independent variables (Field, 2013). The *b*-values as seen in Table 12 show an HSP *b* of .005, PoP has a *b* of 3.939, and PoR has a *b* of 3.916. The b-values show that participation in HSP actually increases officer stress by .005, but only if PoP

and PoR scores are held constant. The model shows HSP has a $p > .001$, and a t of .195, PoP has a $p < .001$ with a t of 127.866, and PoR has a $p < .001$ with a t of 120.642, which shows that HSP is not a significant predictor of officer stress, but both PoP and PoR are significant predictors with PoP having the greatest contribution to the model.

According to Fields (2013), The *b*-values and their significance are important statistics, but the standardized versions of the *b*-values are more than likely easier to interpret, resultant from the fact that they are not dependent on the units of measurement of the variables (p. 340). The standardized beta (b_i) value are measured in standard deviation units and are directly equivalent, providing enhanced insight in regard to how central the predictor is to the model (Field, 2013). The b_i for HSP is .001. The b_i for PoP is .575. The b_i for PoR is .541. Confirming that HSP is a poor predictor of officer stress. Therefore, rejection of the null hypotheses is appropriate, as HSP was statistically shown to have little influence on officer stress.

Table 12

SPSS Coefficients

		Unstandardized coefficients		Standardized coefficients		
Model		B	*SE*	Beta	*t*	Sig.
1	(Constant)	1.378	1.024		1.345	.181
	HSP	-.887	.628	-.118	-1.412	.160
2	(Constant)	-.008	.044		-.186	.853
	HSP	.005	.027	.001	.195	.845
	PoP	3.939	.031	.575	127.866	.000
	PoR	3.916	.032	.541	120.642	.000

Note. Dependent variable = PSQ_Index

Summary

To complete the analysis of the research question, required testing of the hypotheses addressing the associations between police officers' job stress, and HSP. Answering the research question involved testing the proposition that police officers' job stress has a relationship with HSP. The framework used to investigate this relationship was multiple regression. Empirical evidence indicated that hots spot policing does not influence officer stress.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

Researchers have been interested in factors that affect officer stress. Research in HSP has shown a positive effect on reducing crime rates, which may affect an officer's stress with fewer calls for service. The purpose of this quantitative, survey-based correlational study was to investigate the relationship between four key variables: police officer stress (PSQ-Index), organizational stressors (PSQ-Org), operational stressors (PSQ-Op), and HSP. For this study, a quantitative examination of the hypothesized influence of HSP on officer stress was the goal. The study answered the question of whether the application of hot spot policing affects officer stress.

This chapter presents the insinuations of the results in the framework of the body of knowledge on the topic. It begins with a reintroduction of the research question and hypotheses. Next is a presentation of my analysis of the findings, then a discussion of the findings of the research as related to other studies. This chapter will also present the limitations of the study and the recommendations for practice and future research. Finally, the chapter closes with conclusions on the research.

Interpretation of Findings

My goal for this study was an empirical investigation of the proposition that HSP is a moderating variable that can reduce officer stress. In this section, I discuss the key findings of this study. First, I found empirical evidence indicating that HSP had no significant effect on officer stress; however, the effect found would indicate a negative relationship (officers who participated in HSP indicated higher stress levels). HSP

attributed approximately 1.4% of the variation in officer stress. Thus, HSP was not a statistically significant predictor of officer stress. Second, there was empirical evidence of a positive relationship between both the PSQ-Org and PSQ-Op to officer stress. Therefore, I concluded that both instruments were valid tools to determine officer stress. Finally, the findings in regard to the research question led me to conclude that HSP does not influence officer stress.

Comparison of Study Findings with Similar Studies

In other studies on reducing officer stress, an important finding was that officers who participated in physical exercise mitigated the relationship between job stress and job performance. Scholars have found that exercise had a significant effect on the relationship between life events and somatic complaints (Howard et al., 1984). Previous research has also shown that regular physical activity is generally viewed "as an emotion-oriented coping strategy that provides stressed individuals with a time-out from daily stresses" (Gerber et al., 2010, p. 287). However, there is no empirical research on the effects of HSP concerning officer stress. There is also a limited amount of studies with police officers as a target population when testing for stress reduction, though studies show a reduction in officer stress with appropriate mitigation. The findings in this study indicate that HSP as a stand-alone variable does not influence officer stress; however, previous research has found that a reduction in organizational sources of stress lead to higher morale and productivity among police officers (Ortega, Brenner, & Leather, 2007). Generally, the literature documents the harmful effects of organizational and

operational stressors on police officers (Slate et al., 2007). This research supports these findings.

Limitations of the Study

This study, similar to other empirical studies, had unavoidable limitations, which further studies can address by altering or adjusting the research design and objectives. For instance, this study was a cross-sectional research design; however, a longitudinal design would allow researchers to document change over time. A longitudinal study would have added valuable insights into the extent to which HSP was able to influence the relationship between officer stress and HSP when deployment times change (time spent on actual HSP activities). Time constraints restricted this study, so a longitudinal study was impractical.

Another limitation was that the PSQ-Org and the PSQ-Op both use perceptual ratings. Because perceptions are subjective, the data are not as reliable as with an objective metric. Furthermore, the design limitation for this study was the restricted generalizability of the findings. My pool of participants were officers from various departments of varying sizes and demographics; however, the experiences of officers may not be generalizable to officers in other areas of the United States or other departments in suburban or rural areas. Repeating this study with different parameters can alleviate this limitation. For example, department “A” and “B” can be departments that are fewer than 500 different and departments “C” and “D” could be departments that are greater than 1000, but less than 5000—this filter should also include departments that spend no more than 15 minutes in an HSP zone. By including these filters, researchers

could better understand the extent to which these characteristics influence the outcomes of the study.

Recommendations

The results of this study show that more research in regard to HSP and officer stress may be beneficial. Other research has shown that exercise is mitigation for stress, which improves job performance. Considering that stress mitigation improves job performance, it would be beneficial to determine whether departments can find other mitigating forces that can be implemented department-wide and are not reliant on individual desires to participate. I recommend that departments look at what studies have shown to be the effective amount of time spent in hot spots and implement patrol policies that enact those periods. This study was not focused on how time spent on HSP would influence officer stress; therefore, it may be also beneficial to look at HSP integrated with policies and procedures that set parameters for patrolling within a hot spot as well as controlling for department size and other demographics.

Implications for Social Change

The purpose of this research was to ensure that the findings would make a positive contribution toward social change via benefits to police and community relations by looking for methods to reduce officer stress. For instance, LEO administrators and other policymakers could make informed decisions based on the outcome of this research. Understanding the connections between organizational and operational stressors that negatively affect LEOs is an important step in reducing those factors. Improvements

in LEOs' stress levels will be directly beneficial to society, thus demonstrating a positive social change.

Future Research

I recommend replication of this study with modifications made for future study. I recommend that the replication further filter for the size of department and time spent on HSP. Previous research has indicated that time spent on HSP is a factor in seeing crime reduction. Thus, if the correct policies are not in place in regard to the amount of time spent on HSP, there is no reduction in crime rates, which means LEOs may still have high stress. Addressing this issue of policies would be beneficial to the literature, which future research can address. Aggregate research efforts are essential to augment empirical understanding of the underlying dimensions of officer stress—to date, establishment of a conclusive number of dimensions has not occurred.

Conclusions

In this study, I investigated whether HSP can mitigate the negative effects of officer stress. Although this study shows that HSP is not statistically significant and does not mitigate officer stress, further research with more filters for HSP may be beneficial.

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