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Predicting Personality Traits in Police Officer Candidates Using the M-PULSE

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Abstract

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MS, Walden University

BA, California State University, Fresno

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Abstract

The life of a police officer is filled with high stress and demands, so it is important to hire the right candidates. Preemployment testing is where candidates are screened with instruments such as the M-PULSE and the MMPI-2-RF to see if they are psychologically suitable for law enforcement. The purpose of this quantitative, nonexperimental study was to determine the extent that scores on selected M-PULSE scales (negative emotions and interpersonal difficulties) predicted scores on selected MMPI-2-RF scales (stress/worry and family problems). Archival data were provided by a small corporation that conducts preemployment testing of police officer candidates. Data from the 4 scales across the M-PULSE and MMPI-2-RF ($N = 107$) were obtained and analyzed in SPSS using multiple regression. The results showed that the negative emotions and interpersonal difficulties were significant predictors of stress/worry ($F(2, 104) = 6.687$, $p < .05$, $R^2 = 0.114$) and family problems ($F(2, 104) = 6.497$, $p < .05$, $R^2 = 0.111$). Of the 2 M-PULSE factors, negative emotions was a significant predictor of the 2 MMPI-2-RF factors on an individual basis. This study adds to the body of literature on preemployment testing of police officer candidates. The implications of positive social change include increasing understanding of the preemployment process and helping police psychologists and police departments make more informed decisions of which candidates to hire as police officers.

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Dedication

I dedicate my dissertation to my family: my parents, my brothers, my nephews, and my sister who I hope is looking down and proud of me. My family has always been cheering me on from the day I decided to walk the path toward a PhD in psychology. Their love and support has kept me moving forward. Without my family, I would not be where I am today. To my family: I love you all. To my sister: I love you, and I miss you every day. I hope I have made you all proud.

I also want to dedicate my dissertation to Kara Jones, a Walden University student who was taken away too soon. Kara is one of the most gentle souls I have ever known in my life and is the first Walden University student I met when I set foot on this journey. I hope I made you proud, Kara. When I earn my degree, it is for both of us.

Lastly, I want to dedicate my dissertation to all police officers in all parts of the world. Thank you for your service and your decision to take on responsibilities that most people would never dream of doing. If my dissertation can help elucidate some understanding of police officers, I will feel like I have done my job. I am forever grateful to you all.

Acknowledgments

I would like to thank Dr. Jana Price-Sharps, my dissertation chair. I do not think words can ever fully capture my admiration and appreciation for you. You have the ability to be nurturing, yet also be willing to give that gentle push so that I kept moving forward. You encouraged me throughout this process, even on days when I felt completely deadlocked. To say I could not have asked for a better chair would be an understatement. Your dedication to not just me but every student you work with speaks volumes about your character. You are truly a guardian angel. Without you, I would not be where I am today, and you have my eternal gratitude.

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Lastly, I would like to thank Dr. Neal McBride, my university research reviewer. Your patience and feedback was truly appreciated.

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Chapter 1: Introduction to the Study

Police officers can be the line between order and chaos in society (Price-Sharps, 2017), but the career path they is one of the most stressful occupations (Frank, Lambert, & Qureshi, 2017). Police officers are responsible for maintaining order, preventing crime, and arresting enemies of peace and public order (Bano & Talib, 2017). It takes a certain type of person to become an effective police officer. Some characteristics that are considered ideal in police officer candidates include integrity, service orientation, empathy, communication and human relations skills, self-control, team orientation, and problem-solving skills (Morrison, 2017).

One way to identify potential police officer candidates is through preemployment testing that assesses whether the candidate is psychologically suitable to be a police officer (The International Association of Chiefs of Police, 2014). The process of preemployment testing involves psychological instruments such as the Matrix-Predictive Uniform Law Enforcement Selection Evaluation (M-PULSE) and the Minnesota Multiphasic Personality Inventory-2 Restructured Form (MMPI-2-RF). The M-PULSE is a 455-item, self-report liability assessment designed to measure the future job performance of police officer candidates (Davis & Rostow, 2008), which can indicate whether the candidate will be a problem for the department. Potential problematic characteristics include lack of teamwork, unreliability, emotional instability, and social incompetence (Multi-Health Systems [MHS], n.d.). The MMPI-2-RF is a self-report personality assessment consisting of 338 items instead of the original 567 from the MMPI-2 (Ben-Porath & Tellegen, 2008), which detects signs of impairment in mental

health. Together, these two instruments are important components of preemployment testing of police officer candidates.

It is also important for agencies to screen for issues in police officer candidates because the life of a police officer can involve issues such as stress and worry, family problems, negative emotions, and interpersonal difficulties. These issues can alter the personal lives of police officers and the people they come into contact with such as their family and loved ones. For instance, the demands of police work have been found to be associated with poor marital functioning (Tuttle, Giano, & Merten, 2018). The job demands of police work have also predicted higher levels of emotional exhaustion, anxiety, and depression (Santa Maria et al., 2018). Therefore, preemployment testing can help identify unsuitable candidates as well as allow for early detection and intervention for police officers who struggle with interpersonal difficulties and negative emotions but are still capable of upholding the requirements of police officers (Morrison, 2017; The International Association of Chiefs of Police, 2014). This is why it is important for research to be conducted on preemployment testing for police officer candidates.

Background

Policing is considered to be one of the most stressful occupations (Frank et al., 2017). Police officers must maintain law and order in society and encounter many stressors in doing so (Bano & Talib, 2017). Stressors can include critical incidents that cause moral distress, moral injury, and compassion fatigue and ultimately lead to traumatization (Papazoglou & Chopko, 2017). Policing can also take a toll on marital relationships in the form of spouses expressing concerns about finances and work–family

conflict (Karaffa et al., 2015). In addition, the life of a police officer can involve negative interactions with citizens of the community they serve. Negative contact with citizens and the belief that police officers are negatively stereotyped by citizens can predict negative well-being in police officers (Gordjin, Vacher, & Kuppens, 2017). But a police officer's relations with the community can also be affected by use of force. Officers involved in more use-of-force situations have faced higher levels of citizen resistance and more complaints from citizens about alleged improper use of force (Terrill, Ingram, Somers, & Paoline, 2018). As such, previous research has shown the difficulties police officers can face while they are on and off duty.

Before individuals take on the responsibilities and stresses of a police officer, they go through preemployment testing. Preemployment testing is the process that assesses whether a candidate is suitable for law enforcement (The International Chiefs of Police, 2014). Psychological instruments that are used during this process include the M-PULSE and the MMPI-2-RF, which have been shown by research to be psychometrically sound instruments for preemployment testing. The M-PULSE has been found to be a psychometrically sound instrument for law enforcement selection (Ellingwood, Williams, Sitarenios, & Solomon, 2018), and the MMPI-2-RF has been shown capable of predicting problem behaviors in police officers (Tarescavage, Corey, & Ben-Porath, 2015) as a suitable instrument for public safety selection (Roberts, Tarescavage, Ben-Porath, & Roberts, 2019). Thus, these instruments can detect issues in potential police officers such as interpersonal difficulties and negative emotions.

Further, individually, the M-PULSE is a unique instrument because it is measuring liability rather than mental impairment (Davis & Rostow, 2008). The M-PULSE measures prospective job performance and whether the individual will be a problem for the department. Conversely, psychological tests designed to reveal signs of mental illness, such as the MMPI-2-RF, are considered as medical tests under the Americans with Disabilities Act, whereas the M-PULSE is not (Davis & Rostow, 2008). Therefore, the M-PULSE can be used as a screener prior to the conditional job offer (Davis & Rostow, 2008). Employers may make a job offer if a candidate satisfactorily passes a medical or psychological screening, and reasons for not hiring a candidate must be job-related, such that impairments and/or disabilities have been determined to be detrimental to the candidate's job performance (Davis & Rostow, 2008).

Although the M-PULSE is a liability measurement, the behaviors that are measured may be related to mental health issues that are measured on the MMPI-2-RF. However, there is a lack of research on the M-PULSE working in tandem with the MMPI-2-RF in the process of preemployment testing of police officer candidates. At this point, it is unclear what the relationship is between the behavioral patterns measured by the M-PULSE and the psychopathology measured by the MMPI-2-RF. For psychologists using these instruments in tandem, it is useful for them to understand the strength of the relationships between these variables. The current study can address this gap in the literature by examining whether identified scales on the M-PULSE may predict personality traits as measured by the MMPI-2-RF.

Problem Statement

The research problem for this study was whether scales from the M-PULSE can be used to predict scales on the MMPI-2-RF. The purpose was to determine whether scores from the Negative Emotions and Interpersonal Difficulties scales from the M-PULSE can predict scores on the Stress/Worry (STW) and Family Problems (FML) scales from the MMPI-2-RF. The M-PULSE was found to be psychometrically sound for law enforcement selection and has been shown to be unbiased across gender and ethnic groups when measuring the various characteristics associated with police officer performance (Ellingwood et al., 2018). In addition, the MMPI-2-RF has been found to have predictive validity of problem behaviors in police officer candidates such as emotional control and stress problems (Tarescavage et al., 2015).

Being able to use both instruments to predict problem behaviors and characteristics is important, as the work of police officers affects their professional and personal lives. Both male and female police officers experience both work-role overload and family-role overload (Duxbury & Halinski, 2018). In addition, high job demands regarding workload and assaults by citizens have predicted emotional exhaustion, anxiety, and depression among police officers (Santa Maria et al., 2018). Even though police officers take on the responsibilities of protecting and serving their communities, they are still likely to experience higher levels of negative well-being after negative contact with citizens (Gordjin et al., 2017). As such, police officers deal with stress and worry, family problems, negative emotions, and interpersonal difficulties.

Previous research on the M-PULSE and the MMPI-2-RF has been conducted separately or with other psychological instruments. For example, the MMPI-2-RF was studied alongside the California Psychological Inventory (Roberts et al., 2019). However, there is a lack of research on the statistical relationship between the M-PULSE and the MMPI-2-RF in preemployment testing of police officer candidates. But those using the instruments together need to know the strength of the relationships between these variables. If there is an elevation on a scale from the M-PULSE, there could be an elevation on a similar scale from the MMPI-2-RF. Discovering these elevations during the preemployment phase can allow for early detection of psychological issues, which can lead to referrals toward psychological interventions. The current study sought to address this gap in the literature by examining whether identified scales on the M-PULSE predicted personality traits as measured by the MMPI-2-RF.

Purpose of the Study

This quantitative study included archival data to analyze whether scores from the Negative Emotions and Interpersonal Difficulties scales from the M-PULSE adequately predicted scores on the STW and FML scales from the MMPI-2-RF. The predictor variables were scores from the Negative Emotions and Interpersonal Difficulties scales from the M-PULSE. The criterion variables were scores from the STW and FML scales from the MMPI-2-RF.

Research Questions and Hypotheses

RQ1: To what extent do the M-PULSE scale scores of negative emotions and interpersonal difficulties predict scores on the Stress/Worry scale on the MMPI-2-RF?

$H_0$1: Scores on the two M-PULSE scales, Negative Emotions and Interpersonal Difficulties, do not predict scores on the Stress/Worry scale from the MMPI-2-RF.

$H_1$1: Scores on the two M-PULSE scales, Negative Emotions and Interpersonal Difficulties, predict scores on the Stress/Worry scale from the MMPI-2-RF.

RQ2: To what extent do the M-PULSE scale scores of negative emotions and interpersonal difficulties predict scores on the Family Problems scale from the MMPI-2-RF?

$H_0$2: Scores on the two M-PULSE scales, Negative Emotions and Interpersonal Difficulties, do not predict scores on the Family Problems scale from the MMPI-2-RF.

$H_1$2: Scores on the two M-PULSE scales, Negative Emotions and Interpersonal Difficulties, predict scores on the Family Problems scale from the MMPI-2-RF.

Theoretical Foundation

The theoretical basis for this study was Karasek's (1979) job strain model. According to the job strain model, psychological strain is due to the interaction between job demands and job decision latitude (Karasek, 1979). Higher job demands result in higher psychological strain (Karasek, 1979). When job demands and job decision latitude are both high, the job is considered to be an active type (Karasek, 1979). When job demands are high and job decision latitude is low, the job is considered to be high strain (Karasek, 1979).

This theory can be applied to policing, which has been considered to be a challenging occupation (Lambert, Qureshi, Frank, Keena, & Hogan, 2017). For example, Lambert et al. (2017) used the job strain model as the framework for their study and

found a positive association between job stress and four types of work–family conflict in police officers. The job strain model was used for the current study due to its prior application to stress and worry, negative emotions, family problems, and interpersonal difficulties in police officers. Applying the job strain model can help inform future practices of preemployment screenings of police candidates such as early identification and interventions for qualified individuals who may still struggle with the issues of stress and worry, negative emotions, family problems, and interpersonal difficulties.

Nature of the Study

The nature of this study was a quantitative methodology with archival data to determine whether scores from the Negative Emotions and Interpersonal Difficulties scales from the M-PULSE predicted scores on the STW and FML scales from the MMPI-2-RF. The predictor variables were scores from the Negative Emotions and Interpersonal Difficulties scales from the M-PULSE. The criterion variables were scores from the STW and FML scales from the MMPI-2-RF. The current study followed a nonexperimental, quantitative design. Because the current study did not involve random assignment or a manipulation of variables, a nonexperimental design was a suitable research design for the current study (Warner, 2013).

Data were provided by a corporation that conducts pre-employment assessments for local law enforcement agencies in Central California. Permission to use the data for this current study was requested and obtained from the licensed psychologist (and clinical director) of this corporation. The data were provided in a Microsoft Excel file and did not include any identifying information beyond age and gender. Data were analyzed

through the Statistical Package for the Social Sciences (SPSS), and the statistical test that was used for both research questions is multiple linear regression.

Definitions

This section identifies language and acronyms used in this dissertation to ensure clarification for readers.

Matrix-Predictive Uniform Law Enforcement Inventory (M-PULSE): This is a self-report liability assessment used for selecting police officer candidates and identifying characteristics associated with job performance (Davis & Rostow, 2008).

Negative emotions: Poor frame of mind, feelings of unhappiness, and lack of self-confidence (Davis & Rostow, 2008).

Interpersonal difficulties: At risk for problems with personal relationships, either on duty (fellow officers, supervisors, general public) or off duty (family, spouse, etc.) (Davis & Rostow, 2008).

Minnesota Multiphasic Personality Inventory-2 Revised Form (MMPI-2-RF): This is a 338-item, self-report measure that is linked to current theories of personality and psychopathology (University of Minnesota, 2019).

Stress/Worry (STW): Preoccupation with disappointments and difficulty with time pressure (Wygant, 2017).

Family Problems (FML): Conflictual family relationships (Wygant, 2017).

Assumptions

For this study, it was assumed that participants answered truthfully on both the M-PULSE and MMPI-2-RF. Both the M-PULSE and MMPI-2-RF have scales for

measuring test behaviors that negatively affect the validity of the assessments such as deception. Candidates who have significantly elevated scores on validity scales were not provided by the corporation. Furthermore, the participants were police officer candidates looking for a position at the department they applied for, and deception would harm their chances of employment. In addition, both the M-PULSE and MMPI-2-RF have established reliability and validity and have been shown to be psychometrically sound instruments for use in preemployment screening of police candidates (Tarescavage et al., 2015; Ellingwood et al., 2018). For these reasons, it was assumed that participants answered truthfully on both the M-PULSE and MMPI-2-RF. Because this study included archival data, it was also assumed that the data were trustworthy and not tainted by deception or biases of the researcher.

Scope and Delimitations

This was a quantitative secondary data analysis of data collected from preemployment screenings of police officers. A quantitative methodology was selected to examine whether scores from the Negative Emotions and Interpersonal Difficulties scales from the M-PULSE can adequately predict scores on the STW and FML from the MMPI-2-RF. The data were provided by a private organization that conducts preemployment testing for police officer candidates.

The instruments that were used for this study (M-PULSE and MMPI-2-RF) measure many factors. However, this study focused on two factors from the M-PULSE as predictor variables and two separate criterion variables from the MMPI-2-RF, which was a delimitation of the current study. The four selected scales for this study may not

capture all aspects of negative emotions, interpersonal difficulties, stress/worry, and family problems. As such, the reliability and validity of the selected scales could be limited, which can limit the findings and implications of the current study. Another delimitation of the current study is that data were gathered from one city in central California. As such, the sample for the current study may not be a representative sample of police officer candidates. Because of this, the current study may yield results that are limited in generalizability.

Limitations

One limitation for this study lies in the use of secondary data. Because secondary data are collected by someone else, it can potentially be incomplete, missing necessary components, subjected to previous bias, or misaligned with the current study. These conditions were limitations of using secondary data for this study. The other limitation for this study was the uncertainty of whether participants answered truthfully on the M-PULSE and MMPI-2-RF. Both the M-PULSE and MMPI-2-RF have scales that identify test-taking behaviors, which would negatively affect the validity of the results of the current study.

Significance

The life of a police officer is filled with the responsibility to maintain law and order and a myriad of stressors that affect their professional and personal lives (Bano & Talib, 2017), which include stress and worry, family problems, negative emotions, and interpersonal difficulties. The stress that comes with being a police officer has been positively associated with work–family conflict and burnout (Griffin & Sun, 2018). In

addition, stress and fatigue have been found to negatively impair an officer's performance such as shooting accuracy and the reliability of an officer's account of use-of-force incidents (Hope, 2016). Furthermore, police officers who are involved in more use-of-force incidents face a higher likelihood of citizen resistance and citizen complaints alleging improper use of force (Terrill et al., 2018). It takes a certain person to be able to withstand the demands of being a police officer (The International Association of Chiefs of Police, 2014). Because of this, preemployment testing of police officer candidates allows agencies to find individuals who possess the skills and traits that allow for effective policing and positive community relationships (President's Task Force on 21st Century Policing, 2015).

Researchers have examined the M-PULSE and the MMPI-2-RF and the applications of these instruments to preemployment testing of police officer candidates; however, previous research has studied the M-PULSE and MMPI-2-RF separately. As such, there is little research on any statistical relationship between the M-PULSE and MMPI-2-RF and how the M-PULSE and the MMPI-2-RF work in tandem for preemployment testing of police officer candidates.

The M-PULSE is a liability screener and can be used prior to a conditional offer of employment by a law enforcement department (Davis & Rostow, 2008). In contrast, the MMPI-2-RF is considered a medical evaluation under Americans with Disabilities Act, and it can only be administered after a conditional offer of employment has been made. Therefore, it is useful for police psychologists to understand the relationship between variables on the MMPI-2-RF and the M-PULSE to make better decisions about

which candidates should move forward in the hiring process and be given a conditional offer of employment. Officers with high levels of stress responses or family problems will likely suffer problems throughout their career. If negative emotions and interpersonal difficulties on the M-PULSE are related to the Stress and Worry scale or the Family Problems scale on the MMPI-2-RF, it would allow departments to make a more informed decision about which candidates should be given a conditional offer of employment. As such, this study may contribute to filling this gap in the current research on preemployment testing of police officer candidates. The hope is to inspire future research on preemployment testing of police officer candidates and help police departments make more informed decisions on who to hire as police officers.

Summary

This chapter was focused on introducing the current study, which was aimed at examining whether scores from the Negative Emotions and Interpersonal Difficulties scales from the M-PULSE can predict scores on the STW and FML from the MMPI-2-RF. This chapter also established the current study as using archival data provided by a corporation that conducts preemployment testing of police candidates. In addition, this chapter identified and defined the independent and dependent variables that were studied. The hope of this current study is to build on current knowledge and inform future practices of preemployment testing of police officer candidates. Next, Chapter 2 will outline the relevant research literature that provides a detailed background for the current study.

Chapter 2: Literature Review

Introduction

Police officers play an important role in society (Price-Sharps, 2017). They take an oath to protect and serve their communities in a highly stressful, sometimes life threatening occupation. Police officers also encounter a multitude of stressors that can have profound effects on their professional and personal lives (Bano & Talib, 2017). Therefore, preemployment testing is used to find psychologically suitable people for this line of work (International Association of Chiefs of Police, 2014). During preemployment testing, police officer candidates are screened for personality traits and work characteristics by instruments such as the M-PULSE and MMPI-2-RF, which have been established as psychometrically sound (Ellingwood et al., 2018; Morison, 2017). Preemployment screening can disqualify individuals who are deemed unable to fulfill the obligations of a police officer. However, it may be possible that there are suitable police officer candidates who may struggle with issues such as negative emotions, interpersonal difficulties, stress and worry, and family problems. In this case, preemployment testing can allow for early identification of such issues in suitable police officer candidates. For these reasons, preemployment testing of police officer candidates is an important subject of psychological research.

Furthermore, little research has been conducted on using scores on scales from the M-PULSE to predict scores on scales from the MMPI-2-RF. Because these two assessments are used to make hiring decisions of police officers, it is important to conduct research on the relationship between the M-PULSE and the MMPI-2-RF. This

research can then be used to help psychologists work with individuals on problem areas detected through preemployment testing. The current study addresses this gap in the literature by examining whether scores from the Negative Emotions and Interpersonal Difficulties scales from the M-PULSE can predict scores on the STW and FML from the MMPI-2-RF.

This literature review presents the search terms, databases, and other search strategies that were utilized in the process of gathering research articles relevant to the current study. In addition, this literature review outlines the theoretical foundation of this study and the present, relevant research related to the variables and concepts that were used in this study.

Literature Search Strategy

The Walden University Library was the primary source of relevant articles for this study. Google Scholar and Mendeley served as a secondary source of locating relevant articles for this study. Thoreau was the primary database used to locate relevant articles from peer-reviewed, scholarly journals, with specific focus on research published within the past 5 years, though some research and other references were beyond the past 5 years. For literature about the job strain model, a seminal work by Karasek (1979) was used for this study. Search terms for the current study consisted of the following: *police, police officers, stress, family relationships, mmpi-2-rf, m-pulse, pre-employment, negative emotions, interpersonal, marital relationships, depression, anxiety, ptsd, use of force, community policing, suicide, community relations, community, critical incident, occupational stress, compassion fatigue, sleep quality, fatigue, shift work, attitudes*

toward police, police misconduct, police officer health, job stress, family stress, shoot no shoot, and *job strain model*. Individual searches and combinations of these search terms yielded current and relevant research for this study. In addition, PDF files containing information related to preemployment testing of police officer candidates, the M-PULSE, and the MMPI-2-RF were also utilized as references for this study.

Theoretical Foundation

The job strain model served as the theoretical foundation of the current study. This model was developed and tested using national survey data from the United States and Sweden (Karasek, 1979). According to the job strain model, mental strain is due to the interaction between job demands and job decision latitude (Karasek, 1979). Job demands are stressors in the work environment such as workload, and job decision latitude refers to an individual's freedom in making decisions (Karasek, 1979). When job demands are high and job decision latitude is low, this results in psychological strain and indicates a high strain job (Karasek, 1979). But the combination of high job demands and high job decision latitude indicates an active job (Karasek, 1979). For example, policing has been considered to be a highly stressful occupation (Lambert et al., 2017). Police officers have the responsibilities of maintaining law and order yet are exposed to various stressors that can adversely affect their lives (Bano & Talib, 2017). These stressors can also affect how police officers interact with their family and citizens of their community (Lambert et al., 2017). Therefore, the job strain model served as a suitable theoretical framework for this study.

The job strain model has been applied as a theoretical framework for previous research on police officers. For instance, Garbarino et al. (2011) used the job strain model (notated as the demand-control-support model) and the effort-reward imbalance model to explore the relationship between work context of special force police officers and psychological measures of job strain and effort-reward imbalance. Using these two models, the authors found that routine work may be significantly more stressful than a single critical event in special force police officers. Next, Noblet, Maharee-Lawler, and Rodwell (2012) used the job strain model along with the organizational justice model to predict employee performance behaviors among Australian police officers. The authors found that stressful working conditions affected the officers' well-being and their ability to perform important work roles (Noblet et al., 2012). Lastly, Lambert et al. (2017) used the job strain model for their study on the relationship between work-family conflict and job stress in Indian police officers. They found that three forms of work-family conflict had a significant association with job stress: strain-based conflict, behavior-based conflict, and family-based conflict (Lambert et al., 2017). Thus, these studies demonstrate the application of the job strain model to police officers. The stresses of working in law enforcement have adverse effects on a police officer's career, personal well-being, and home life.

The theoretical tenets of the job strain model and its usage in previous research on police officers made it a viable framework for research on this population. Little research exists on how scales on the M-PULSE can predict scales on the MMPI-2-RF during the process of preemployment testing of police officer candidates. But these two instruments

play a role in determining who gets hired as a police officer, so it is important to conduct research that examines the relationship between the M-PULSE and the MMPI-2-RF. Such research can aid psychologists in working with individuals who struggle with issues detected on the M-PULSE and the MMPI-2-RF. As such, the current study sought to fill this gap in the literature while using the job strain model as the theoretical framework.

Literature Review Related to Key Concepts and Variables

General Information About Policing

Police officers are responsible for preventing crime and maintaining law and order (Bano & Talib, 2017). To accomplish this objective, police officers often have to engage in shift work, whether it is early in the morning or late at night, which has been associated with poor sleep quality, fatigue, the need for recovery, and poor work–life balance (Lammers-van der Holst & Kerkhof, 2015). For example, some officers who work night shifts only sleep approximately 2 hours (Taylor, Merat, & Jamson, 2019). Further, police officers who worked between 13- to 20-hour shifts have experienced significant decreases in hours of sleep, overall quality of sleep, concentration, reaction time, cognitive processing, and quality of life (Bell, Virden, Lewis, & Cassidy, 2015). In addition, there can also be differences in the amount of stressors reported between police officers who work day, afternoon, and night shifts. Police officers who work afternoon and night shifts have reported more total stress, administrative/professional pressure, and physical/psychological danger than police officers who worked day shifts (Ma et al., 2015). Thus, police officers work long, challenging shifts to serve their communities, which has led to adverse effects on the health and functioning of police officers.

In addition to preventing crime and maintaining law and order, police officers are also needed in times of danger, crisis, and difficulty (Bano & Talib, 2017). This exposes them to violence, confrontation, and traumatic incidents where they may witness death and be at risk for personal injury or death (Price, 2017). They also may be responsible for using deadly force against people who are determined as threats to their personal safety and the safety of the community they serve. Though killing someone in the line of duty or witnessing a fellow officer being killed was rated as an infrequent stressor, this type of situation has still ranked as a high stressor (Violanti et al., 2016). When police officers encounter armed assailants, they have less than a second to choose whether to shoot (Sharps & Hess, 2008). But shoot/no shoot decisions have come under scrutiny (Liao, Price-Sharps, & Sharps, 2018), especially over police killings of African American men (Weitzer, 2015).

Police officers also respond to a variety of distress calls during their work shift such as working with survivors of rape, responding to deaths by suicide, conducting crowd control, and responding to domestic violence calls. From these incidents, police officers can experience compassion fatigue, secondary traumatic stress, burnout, moral distress, and moral injury. Long-serving specialist police officers who work with survivors of rape were found to have higher compassion fatigue, secondary traumatic stress, and burnout (Turgoose, Glover, Barker, & Maddox, 2017). For responding to deaths by suicide, police officers must create a crime scene, keep family members away from the body, take any suicide notes for the investigation, return personal items of the deceased, and recommend family members to seek professional help for the loss of their

loved one (Norton, 2017). For police officers who have experienced loss in their own lives, this can be a difficult call to respond to (Norton, 2017). Regarding crowd control, police officers may have to use force on protestors (such as teenagers), which may conflict with personal beliefs and cause moral distress (Papazoglou & Chopko, 2017). Lastly, police officers may respond to domestic violence calls. From these incidents, responding to family disputes has been reported as the most frequent stressor and exposure to battered children has been reported as the highest rated stressor (Violanti et al., 2016). By the time the police officer arrives, they may find that one of the parties is severely injured, which causes guilt over whether anything could have been done to prevent the incident from happening (Papazoglou & Chopko, 2017).

With all these types of calls and situations, police work is highly demanding and entails a myriad of responsibilities (Papazoglou, Koskelainen, & Stuewe, 2018). Throughout their careers, police officers may also experience effort–reward imbalance, which has been associated with two components of burnout: cynicism and exhaustion (Violanti et al., 2018). Furthermore, cumulative exposure to work-related traumatic events has been associated with post-traumatic stress disorder (PTSD; Geronazzo-Alman et al., 2017). To fulfill these responsibilities to their departments and communities, police officers may encounter several traumatic events in a short amount of time. Thus, in the name of protecting and serving, they may experience several negative outcomes such as compassion fatigue, PTSD, secondary traumatic stress, and burnout.

Working as a police officer has been established as a stressful occupation that is also associated with adverse health problems (Habersaat, Geiger, Abdellaoui, & Wolf,

2015). Compared to firefighters, police officers have been found to report lower levels of mental toughness and higher levels of perceived stress (Ward, St. Clair-Thompson, & Postlethwaite, 2018). For police officers, work has been associated with an increased risk of cardiovascular and sleep disorders (Elliot & Lal, 2016). In addition, police officers experience higher rates of long-term health morbidity and mortality than other occupations and the general population (Mumford, Taylor, & Kubu, 2015). Police officers have screened for higher rates of PTSD, common mental health disorders, and alcohol misuse than the general population (Mumford et al., 2015). Though police officers may need help for their mental health, they may encounter stigmatization for their mental health problems (Bullock & Garland, 2018). But if agencies could better assist police officers with accessing mental health services, police officers can be more capable of performing the responsibilities that keep their communities safe. With all the presented research about policing, a goal of the current study was to contribute to the body of knowledge about police officers.

Overview of Preemployment Testing for Police Officer Candidates

Becoming a police officer involves preemployment testing, which is done to determine whether applicants are psychologically suitable for the career of a police officer in accordance with jurisdictional statutes and regulations and other criteria of the hiring agency (The International Association of Chiefs of Police, 2014). The goal is to hire candidates who possess the character traits and social skills that cultivate effective policing and positive community relationships (President's Task Force on 21st Century Policing, 2015). Characteristics desired in prospective police officers include integrity,

empathy, problem-solving skills, self-control, service orientation, team orientation, and communication and human relations skills (Morrison, 2017). Preemployment testing of police officer candidates allows agencies to find the right individuals who possess these traits, so the departments are less likely to face liability issues because they can hire police officers who share the values and vision of the department and the community they serve (Morison, 2017). The community is also protected because the police officers can fulfill the goals of effective policing and positive community relations. Testing also allows agencies to reject individuals who do not possess desired characteristics (Morison, 2017), so individuals with existing serious mental health problems do not have their issues exacerbated by the nature of police work. Additionally, this is an opportunity for psychologists to work with them on any issues flagged by preemployment testing.

Preemployment testing is conducted by licensed psychologists or other mental health professionals where permitted by law (The International Association of Chiefs of Police, 2014), but agencies across the United States differ in how they conduct preemployment testing of police officer candidates. For example, the Dallas Police Department asks candidates how they would hypothetically handle situations encountered by police officers (Morison, 2017). Another example is in Kalamzoo, Michigan, where candidates are given scenario-based questions that represent a variety of human experiences instead of focusing solely on the roles of police officers (Morison, 2017). Depending on the agency, educational milestones may also be required of police officer candidates. The Miami Beach Police Department requires candidates to have a bachelor's degree, and the New Orleans Police Department requires candidates to have a

high school diploma at minimum (Morison, 2017). Despite the differences in execution, preemployment testing is conducted by police agencies to find individuals who will be effective in policing and positive community relations.

During preemployment testing of police officer candidates, individuals may also undergo a polygraph, complete psychological assessments, and are interviewed (Morison, 2017; International Association of Chiefs of Police, 2014). But the usage of a polygraph is mixed, with some states prohibiting its usage and other states mandating its usage (Morison, 2017). There has been a debate on whether this tool is an accurate predictor of integrity and honesty; however, there has been consensus that the polygraph could be used for identifying issues that background investigators can follow up on (Morison, 2017). As such, the usage of the polygraph depends on the state and agency the preemployment evaluation is taking place.

Psychological assessments are another component of preemployment testing. It is important that the selected psychological assessments are reliable, valid, normed for police officer candidates, and administered by qualified psychologists (Morison, 2017). Two assessments that have been used for preemployment testing are the MMPI-2-RF and the M-PULSE. These two assessments are used together to help make hiring decisions of police officer candidates. These two instruments will be discussed later in this chapter.

Another important component of preemployment testing is the face-to-face interview. This is the final step before the decision is made of whether to hire the candidate (International Association of Chiefs of Police, 2014). The purpose of the interview is to provide relevant interpersonal and mental status information about the

candidate and to confirm and/or clarify previously collected information during the preemployment process (International Association of Chiefs of Police, 2014). All of the information collected through the background check, polygraph (if required by the state or agency), psychological assessments, and the interview determine whether or not the candidate is suitable to take on the life and work of a police officer. The current study will focus on building knowledge about pre-employment testing of police officer candidates. Specifically, this study focused on the relationship of two instruments utilized in this process: the M-PULSE and the MMPI-2-RF. These two instruments were discussed in further detail in the following subsections.

M-PULSE. The M-PULSE is a 455-item, self-report liability measure that assesses the future job performance of police officer candidates (Davis & Rostow, 2008). It measures a police officer candidate's attitudes, values, beliefs, and behaviors related to the law enforcement profession and culture (Davis & Rostow, 2008). The goals of using the M-PULSE are to hire suitable police officer candidates and to minimize the hiring of individuals who will become a liability (MHS, n.d.). The M-PULSE consists of two validity scales, eighteen liability scales, sixteen empirical scales, ten California POST scales, and and one supplementary scale that serves as an indicator for potential substance abuse issues (MHS, n.d.). Each of these scales were found to have adequate to strong reliability (MHS, n.d.). The goals of using the M-PULSE are to assist agencies in hiring suitable individuals as police officers and minimize the chances of hiring individuals who will prove to be a liability (MHS, n.d.).

Unlike the MMPI-2-RF, there is little research on the usage of the M-PULSE in pre-employment testing of police officer candidates. Most research on the M-PULSE has been explored in dissertations, while the first peer-reviewed published study on the M-PULSE was by Ellingwood et al. (2018). In this study, the authors compared mean differences in M-PULSE scores between the normative sample and their study's sample of 1,202 police officer candidates from Western United States of America (Ellingwood, et al., 2018). The authors found that the scores on the M-PULSE between these two samples had small or no differences, which may indicate consistency with the normative sample (Ellingwood et al., 2018). In addition, the scores of the study's sample had no gender or ethnic bias and were uncorrelated with age and educational background (Ellingwood et al., 2018). Furthermore, the results of the study demonstrated good to excellent inter-item reliability, making the study's sample comparable to the normative sample (Ellingwood et al., 2018). With these findings, the authors concluded the M-PULSE was psychometrically sound instrument for pre-employment testing of police officer candidates (Ellingwood et al., 2018).

Previously published dissertations have also explored the utility of the M-PULSE in pre-employment testing of police officer candidates. One such dissertation was conducted by Adam (2013), who found that the M-PULSE Inventory Scales were significant predictors of officer misconduct. Another dissertation by McMahon (2012) found divergent validity between the M-PULSE and the MMPI-2, such that the M-PULSE was capable of detecting liability issues as intended instead of issues of pathology that are intended to be detected by the MMPI-2. Despite the lack of peer-

reviewed research on using the M-PULSE in pre-employment testing, previous scholars have discussed the usage of the M-PULSE for this purpose in their dissertations. Taken together, the information from available peer-reviewed research and published dissertations show that the M-PULSE is used for the purpose of finding suitable police officer candidates. A goal of the current study was to build on the utility of the M-PULSE (along with its usage in conjunction with the MMPI-2-RF) in the process of pre-employment testing of police officer candidates.

MMPI-2-RF. The MMPI-2-RF is a revised form of the MMPI-2, consisting of 338 items instead of 567 items (Ben-Porath & Tellegen, 2008). It is intended to test people ages eighteen and older and can be administered via computer, CD, or paper and pencil (University of Minnesota Press, 2011). The MMPI-2-RF consists of fifty-one total scales: nine validity scales, three higher-order scales, nine restructured clinical scales, twenty-three specific problems scales, two interest scales, and five PSY-5 scales (Wygant, 2017). This revised self-report measure has been used in mental health, medical, forensic, and public health settings (Wygant, 2017). One such usage of the MMPI-2-RF is for pre-employment testing of police officer candidates.

Previous research has ensured the MMPI-2-RF is empirically based and validated for police and other public safety personnel (Morison, 2017). Tarescavage, Corey, and Ben-Porath (2015) found the MMPI-2-RF showed predictive validity of problem behaviors in police officer candidates, such as emotional control and stress problems, negative interpersonal interactions with citizens, failure to control conflict, and failure to engage subjects. The MMPI-2-RF was also found to have criterion validity such that

substantive scale scores from each domain were moderately to largely correlated with performance criteria (Tarescavage, Corey, Gupton, & Ben-Porath (2015). A specific example of this relationship was studied by Tarescavage, Brewster, Corey, and Ben-Porath (2015). Scales from the MMPI-2-RF that measured emotional dysfunction and interpersonal functioning were associated with issues regarding routine task performance, decision making, assertiveness, conscientiousness, and social competence (Tarescavage et al., 2015). Lastly, Corey, Sellbom, and Ben-Porath (2018) found that MMPI-2-RF scores and personal history predicted poor performance outcomes due to over controlled behavior among hired police officers. Together, these studies have shown the utility of the MMPI-2-RF in the process of pre-employment testing of police officer candidates. Because of this previous research, the current study involved the usage of the MMPI-2-RF and hoped to build on the knowledge of the its usage in pre-employment testing of police officer candidates.

Police Officer Stress

In the midst of their work, police officers encounter many forms of stress. Such stressors can be job-related/occupational, family-related, and administrative/organizational. Wherever the stressors come from, these can all have an influence on a police officer's personal life and job performance (Bano & Talib, 2017). Each of these types of stressors were discussed in the following subsections.

Job-related/occupational stress. One of the sources of stress for police officers is job-related/occupational stress. In fact, previous research has shown that police officers are exposed to more stressful events than other workers in other occupations,

which affects their psychosocial well-being and physical health (Acquadro Maran, Varetto, & Ieraci, 2015). Job stress is associated with several harmful outcomes in police officers (Frank, Lambert, & Qureshi, 2017). Certain job demands such as role ambiguity, role conflict, and role overload were found to be associated with higher levels of stress in police officers (Frank et al., 2017). Regarding role overload, five factors were identified as antecedents for work-role overload in policing: competing demands, the court system, pressures to perform outside of one's mandate, understaffing, and a non-supportive organizational culture (Duxbury, Higgins, & Halinski, 2015). Based on this study, these five factors could be the reasons police officers experience job-related/occupational stress in the form of work-role overload.

Furthermore, research has also shown gender differences in job-related/occupational stressors experienced between male and female police officers. Violanti et al. (2016) found a difference in highly rated and frequent job-related/occupational stressors between male and female police officers. Male police officers reported more stressors that took them away from their job, such as court appearances and working second jobs than female police officers (Violanti et al., 2016). On the other hand, female police officers reported more feelings of a lack of support from their supervisor than male police officers (Violanti et al., 2016). A study by Duxbury and Halinski (2018) found a difference between male and female police officers on the relationship between work-role overload and stress. In this study, the authors found that this relationship was stronger for male police officers than female police officers (Duxbury & Halinski, 2018). In addition, competing work demands was found to be a

stronger predictor of work-role overload for male police officers than female police officers (Duxbury & Halinski, 2018). Based on this study, it is important to consider gender differences regarding job-related/occupational stress. Other factors associated with increased job stress include increased usage of avoidance-focused coping strategies and decreased sleeping, physical exercise, and support of family and friends (Galanis, Fragkou, Kaitelidou, Kalokairinou, & Katsoulas, 2018). Taken together, these studies showed that job-related/occupational stress is related to a myriad of factors that affect a police officer's professional and personal life.

Job-related/occupational stress can also have an effect on the physical health of police officers. After a twelve-hour shift, police officers were found to have poor sleep quality and severe fatigue (Elliot & Lal, 2016). In addition, there was a significant increase in systolic blood pressure in female police officers compared to male police officers after a twelve-hour shift (Elliot & Lal, 2016). Police officers also experience effort-reward imbalance, where stress is due to the interaction between high effort and low rewards at work (Siegrist, 1996). Violanti et al. (2018) found that effort-reward imbalance was associated with significantly less cortisol secretion in police officers when they woke up, which served as indicators of dysregulated hypothalamus-pituitary-adrenal axis activity and possible disease states (Violanti et al., 2018). Furthermore, Magnavita, Capitanelli, Garbarino, and Pira (2018) conducted a systematic review and found that work-related stress was positively associated with cardiovascular risk factors in police officers. Based on these studies, police work has been found to have an effect on the physical health of police officers. All the previous research discussed in this subsection

have found the types of occupational/job-related stress affects, gender differences in occupational/job-related stress, and the effects of occupational/job-related stress on the physical health of police officers.

Family-related stress. Another source of stress for police officers is family-related stress. One such form of family-related stress is work-family conflict. Work-family conflict is a form of strain-based conflict that occurs when workplace problems negatively impact the quality of home life (Lambert, Qureshi, & Frank, 2016). Lambert, Qureshi, Keena, Frank, and Hogan (2019) outlined four forms of work-family conflict: time-based, behavior-based, strain-based, and family-based. All four of these forms of work-family conflict were found to be positively related to emotional burnout (Lambert et al., 2019). Also, time-based conflict, behavior-based conflict, and family-based conflict were found to be positively associated with depersonalization and a reduced sense of personal accomplishment (Lambert et al., 2019). In addition, Griffin and Sun (2018) found that work-family conflict was also positively related to burnout, as well as stress. Furthermore, Li, Cheung, and Sun (2019) found that work-family conflict affected work stress and work engagement. Work-family conflict was also found to affect the job satisfaction of police officers. Research by Singh and Nayak (2015) and Ahmad and Islam (2019) found a direct negative relationship between work-family conflict and job satisfaction. Police officers may also experience family-role overload in their careers, although there may be gender differences on this factor. For example, Duxbury and Halinski (2018) found that the relationship between stress and family-role overload was stronger in female police officers than male police officers. Based on this previous

research, work-family conflict is a prevalent phenomenon in the lives of police officers that is associated with stress, burnout, and job satisfaction.

Within family-related stress, previous research has also shown that police officers experience difficulties in their marital relationships. Karaffa et al. (2015) found that police work impacts marital relationships such that spouses voiced concerns about finances, work-family conflict, and law enforcement-specific stressors (such as negative public attitudes towards police officers). A later study by Tuttle et al. (2018) found that career demands of law enforcement were associated with poor marital functioning. Specifically, Tuttle et al. (2018) found that emotional stress spillover from police work was related to negative martial functioning. It is also possible for police officers to go through domestic violence. This is known as officer-involved domestic violence and is a serious problem in police officer families (Cheema, 2016). Cheema (2016) discussed how police officer families have higher rates of domestic violence compared to non-police officer families and that officer-involved domestic violence is an under researched problem. Another study by Porter and Henriksen (2016) examined the lives of spouses of first responders. The authors found that spouses of first responders experienced a range of themes, such as safety concerns, pride in their spouse's work, and stress at home (Porter & Henriksen, 2016). Based on these studies, police officers can go through a range of experiences in their home lives, whether it is having a proud spouse or going through officer-involved domestic violence. Since police officers can bring the stresses of their work home, family-related stress is an important topic of discussion regarding police officers. The previous research discussed in this subsection has found types of

family-related stress, gender differences in family-related stress, and the effects of police work on marriages.

Administrative/organizational stress. A third source of stress for police officers is administrative/organizational stress. This type of stress can manifest from police officers' perceived organizational support. Perceived organizational support is defined as the extent employees believe the organization cares about their well-being and values their contributions (Reynolds & Helfers, 2018). Reynolds and Helfers (2018) found that patrol officers had the lowest perceived organizational support, followed by detectives. This finding is important because most officers are assigned to the roles of patrol and detective in many police departments (Reaves, 2015). In addition, the use of body-worn cameras can also negatively affect perceived organizational support. The purposes of using body-worn cameras are to increase transparency in policing, decrease police use of force, and decrease complaints related to police misbehavior (Adams & Mastracci, 2019). Adams and Mastracci (2019) found that the use of body-worn cameras decreased perceived organizational support and that perceived organizational support also mediated the relationship between body-worn camera use and burnout. However, Adams and Mastracci (2019) also found that greater perceived organizational support can mitigate the relationship between using body-worn cameras and burnout. Based on these studies, it is important for administration to be aware of how police officers perceive them because this can affect officer morale and performance (Reynolds & Helfers, 2018). From there, police departments can implement skill-based trainings, such as emotion-regulation training in order to train their officers in coping with their work environment

(Adams & Mastracci, 2019). Thus, it is important for police departments to be mindful of how their officers perceive them and to implement interventions to increase perceived organizational support. Taking these steps can allow for police officers to have higher morale, be better able to cope with their work environment, and perform at an optimal level (Reynolds & Helfers, 2018; Adams & Mastracci, 2019).

Previous research has also found that administrative/organizational stress can influence police misconduct and negative emotions among officers. Bishopp, Worrall, and Piquero (2016) found that organizational stress influenced police misconduct such that fatigue, participating in court proceedings and internal affairs reviews affected driving misconduct, yelling/cursing at citizens, and using unnecessary force. Specifically, stress from fatigue and internal investigations was related to driving misconduct, and stress from court appearances influenced rates of yelling/cursing at citizens and using unnecessary force (Bishopp et al., 2016). A later study by Bishopp, Piquero, Worrall, and Piquero (2018) found that six forms of organizational stress (working overtime or at a second job, fatigue, receiving negative comments from the public, dealing with supervisors, participating in court proceedings, and being in internal affairs reviews) were all significantly related to three negative emotions: anger, depression, and burnout. The findings from both of these studies showed that police misconduct can be influenced by organizational/administrative stress. Because of this, it would be in the best interest of police departments to help officers manage fatigue and stress and potentially revamp the internal affairs system (Bishopp et al., 2016; Bishopp et al., 2018). Taken together, the research discussed in this subsection has found that stress

in police officers can come from administrative/organizational sources which can affect perceived organizational support and police misconduct.

Influence of Stress on Job Performance

Whatever the source of stressors is for police officers, their job performance can be influenced. One example of this is the cognitive abilities of a police officer can become impaired due to stress. Hope (2016) discussed how stress and fatigue can impair the response and memory performance of police officers due to the additional cognition needed for responding to and resolving incidents. Fatigue from working thirteen-hour shifts has been found to yield higher lapses in concentration and longer reaction times compared to police officers who work ten-hour shifts (Bell et al., 2015). Higher lapses in concentration can lead to issues with attentiveness, and a slower reaction time can put the officer at greater risk for injury or death (Bell et al., 2015). Bell et al. (2015) also found that sleep deprivation impaired cognitive functioning in police officers. In addition, Gutshall, Hampton, Sebetan, Stein, and Broxtermann (2017) studied the effects of occupational stress on cognitive functioning after a two-week work period. The authors found occupational stress decreased levels of important cognitive functions, such as processing information, learning, and working memory after a two-week work period (Gutshall et al., 2017). Based on these studies, the strenuous work of law enforcement can impair cognitive functions that are necessary for performing the responsibilities of a police officer.

Another way stress influences a police officer's job performance is increasing the possibility of injury. Policing has been found to be have one of the highest rates of non-

fatal on-duty injury (Fekedulegn et al., 2017). Injuries to police officers are indicative of several components: the relationship between the public and the police, the way policing services are provided, the experiences of police officers, and the way police departments show care towards their employees (Fielding, Bullock, Fielding, & Hieke, 2018). Factors such as fatigue, job-related risks, and work stress have been found to be associated with injury in police officers. Fekedulegn et al. (2017) found that fatigue was positively associated with on-duty injury for police officers. Specifically, the prevalence of workplace injury significantly increased across total fatigue scores (Fekedulegn et al., 2017). Other factors that were found to be associated with injury were job-related risks and work stress. Perez-Floriano and Gonzalez (2019) found that police officers who had been injured reported higher job-related risks and work stress. In addition, the prevalence of injuries can differ based on individual characteristics of police offices, such as age and rank. Regarding injuries from vehicular crashes, Chu (2016) found that younger police officers were more likely to be injured in vehicular crashes than middle-aged police officers. Furthermore, Fielding et al. (2018) found that police officers and police community support officers experienced similar physical injuries, while police staff reported fewer physical injuries but more psychological injuries in comparison. In addition, lower-ranked police officers reported experiencing more physical injuries thank higher-ranked colleagues, although this finding may be an indicator of how the department deploys their officers (Fielding et al., 2018). Based on these studies, factors such as stress, fatigue, job-related risks, and individual characteristics are associated with

the risk of injury for police officers. Altogether, the research presented in this subsection has shown how the stress of policing can affect the performance of the officers.

Cost of Officer Stress

The life of a police officer is filled with stressors from different sources: occupational, familial, and administrative/organizational. These types of stresses can have negative effects on an officer's job performance. In addition, the cost of officer stress can play out in the forms of use of force, poor community relations, and negative emotions. Each of these factors will be discussed in the upcoming subsections.

Use of force. As previously discussed, police officers may find themselves in life or death situations where they must use force in order to ensure the safety of themselves, their partner, and the community. In fact, police officers have less than a second to decide whether or not to use lethal force (Sharps & Hess, 2008). This is known as System One cognitive processing, meaning police officers must think fast due to having little time to reflect on how to proceed (Mears, Craig, Stewart, & Warren, 2017). This split-second decision can be the difference between whether or not officers are able to go home to their families and loved ones. The decision to use force was also found to be more intuitive than analytical, meaning that police officers use more automatic unconscious decision making, pattern matching, and heuristics (Hine, Porter, Westera, Alpert, & Allen, 2018). In addition, decisions to use force were guided by situational and suspect factors (Hine, Porter, Westera, Alpert, & Allen, 2019). Situational factors that influenced decisions to use force included reported offenses that were considered serious, when there are less officers than suspects at the scene, and when bystanders are present

(Hine et al., 2019). Suspect factors that influenced decisions to use force included being larger than the officer, intoxicated, aggressive, and breaching a safe proximity with the officer (Hine et al., 2019). While the studies by Hine et al. (2018) and Hine et al. (2019) were conducted with police officer recruits, the findings still provided insight into police use of force decisions. After using force, the officer will have to make a report over what happened. Debate has arisen over whether or not police officers should immediately view available body-camera footage and when to interview officers after a shooting. Both of these serve as challenges as viewing the body-camera footage may invite distortions of parts not captured on camera and memory naturally decays over time (Grady, Butler, & Loftus, 2016). Together, the research has shown that police use of force decisions are intuitive, require less than a second to make, are influenced by situational and suspect factors, and bring up memory issues regarding reporting and interviewing officers after the incident.

Although use of force can serve the purpose of protecting and serving the community, this action has still come under scrutiny from the public. In recent years, shoot/no-shoot decisions have been met with controversy and social unrest (Liao et al., 2018). Among college students, females and non-white students were significantly less likely to view police use of force as justified compared to males and white students (Girgenti-Malone, Khoder, Vega, & Castillo, 2017). Additional research has shown that factors such as gender, race, ethnicity, and socioeconomic status can influence police use of force. Khan, Steele, McMahon, and Stewart (2017) discussed how suspect race affected police use of force during interactions with an officer. For cases involving Black

and Latino suspects, the authors found higher levels of police use of force earlier in interactions (Khan et al., 2017). In cases involving White suspects, there was a higher rate of escalation of police use of force compared to cases involving Black and Latino suspects (Khan et al., 2017). Motley and Joe (2018) discussed the chances of police use of force among Black and White citizens by gender and income level. For Black citizens, being male and having an income under $20,000 significantly increased the chances of police use of force during a street stop (Motley & Joe, 2018). For White citizens, being male and having an income under $20,000, and being age thirty-five or older significantly increased the chances of police use of force during a street stop (Motley & Joe, 2018). The discussed research has shown perceptions of police use of force and how factors such as gender, race, ethnicity, and socioeconomic status can influence police use of force. Altogether, the research discussed in this subsection has shown the nature of and factors that affect police use of force.

Poor community relations. Police officers take an oath to protect and serve their communities and the citizens who reside in them. However, there are times when police officers find themselves at odds with the communities they swore to serve. One such way officers can remedy this issue is through community-oriented policing. Community-oriented policing is an organizational philosophy that emphasizes collaboration between law enforcement and the community in order to identify and resolve issues related to crime and disorder (Crowl, 2017). McCarthy, Porter, Townsley, and Alpert (2019) found that community-oriented policing (measured as formal and informal consultation with the community) was associated with lower rates of police use of force in communities with

high violent crime rates, which improved relationships between police officers and communities and reduced the use of coercive policing tactics. However, the acceptance of community-oriented policing can depend on certain factors. Lee, Kim, Woo, and Reyns (2019) found that citizen support for community policing depends on citizen characteristics, perceptions of law enforcement, and community characteristics. Citizens who were female and who had a higher education level were found to be more supportive of community-oriented policing than male citizens and citizens who had a lower education level (Lee et al., 2019). In addition, higher perceptions of disorder and social cohesion were associated with a lower level of support for community-oriented policing (Lee et al., 2019). There can also be a disparity on how law enforcement and the community view certain issues. Bathelemey, Chaney, Maccio, and Church (2016) found that police officers and the community clashed on who is responsible for and how to resolve problems such as parenting and gang activity. While community-oriented policing has been shown to be an effective direction for departments to take, there appears to be more work to be done in order to move forward with this organizational philosophy as a means of improving community relations.

As previously discussed, police officers may need to use force to and have less than a second to do so. Even so, the use of force can negatively affect an officers' relationships with the very communities they swore to protect and serve. This can come in the form of negative contact with citizens, which can affect an officer's personal well-being. In fact, contact with police has been found to be a stronger predictor of attitudes towards police than race (Alberton & Gorey, 2018). In addition, Gordjin et al. (2017)

found that negative contact with citizens and expectations of being negatively stereotyped by citizens predicted negative well-being in police officers. Furthermore, Terrill et al. (2018) found that police officers involved in more use of force incidents generated more citizen complaints. They also found that police officer who received more complaints faced more resistance from citizens (Terrill et al., 2018). The negative perceptions of police officers is further exacerbated by the media, which can sensationalize their stories and paint them in an unfavorable light (Levan & Stevenson, 2019). Gauthier and Graziano (2018) found that consumption of Internet news was related to negative attitudes about the police and exposure to negative news about police officers impacts perceptions if coverage is considered fair. As such, the availability and spread of news about police officers through the Internet and social media can create negative attitudes of law enforcement officers and affect their relationships with their communities. Taken together, the research in this subsection showed the positives and challenges of community-oriented policing and the struggles they face with citizen perceptions and media coverage.

Negative emotions. Police officers encounter a myriad of stressors from different sources, may have to use force to finish dangerous encounters, and may come under scrutiny from their own communities. A final cost of stress from policing can come in the form of negative emotions. These negative emotions can be tied to different mental health disorders that can have adverse effects on an officer's professional and personal life. One prevalent mental health disorder experienced by police officers is PTSD. PTSD results from "exposure to one or more traumatic events" (American Psychiatric

Association, 2013). Symptoms of PTSD include nightmares, day intrusions, flashbacks, avoidance of stimuli associated with traumatic events, negative alterations in cognition and mood, and problems with arousal and reactivity (American Psychiatric Association, 2013). Because of this, PTSD can be considered as a mixture of other mental health disorders, such as anxiety, depression, and dissociation (American Psychiatric Association, 2013). Within this one mental health disorder, police officers can face numerous emotional and cognitive issues.

For police officers (and other first responders such as firefighters and emergency dispatchers), PTSD can develop after exposure to an event where death, severe physical harm, or violence occurred or was threatened (Klimley, Hasselt, & Stripling, 2018). Cumulative exposure to these traumatic events has been found to be associated with PTSD (Geronazzo-Alman et al., 2017). Regarding police officers, encountering traumatic events in a continuous manner, has been found to increase their vulnerability to PTSD symptomatology by way of experiencing moral distress, moral injury, and compassion fatigue (Papazoglou & Chopko, 2017). Predictive risk factors of PTSD in police officers include the use of emotional coping strategies, the number of acute stress disorder symptoms, the intensity of depressive symptoms, and the presence of dissociative, emotional, and physical reactions (Marchand, Nadeau, Beaulieu-Prévost, Boyer, & Martin, 2015). Another risk factor associated with higher PTSD is work stress such that higher work stress is associated with higher reported PTSD symptoms (Violanti et al., 2018). In addition, the type of coping styles used also play a role in the level of PTSD symptoms. Violanti et al. (2018) also found that the use of both lower active

coping styles and higher passive coping styles exacerbated PTSD symptoms. For example, utilizing higher passive coping styles in response to work stress was found to worsen PTSD symptoms (Violanti et al., 2018). If left unchecked, police officers suffering with PTSD may resort to suicidal thoughts and behaviors. Police officers (as well as firefighters, EMTs, and paramedics) have been found to be at higher risk for suicidal thoughts and behaviors (Stanley, Hom, & Joiner, 2016). One such path to suicidal thoughts and behaviors may be through feelings of hopelessness. Violanti et al. (2016) found that higher feelings of hopelessness was a risk factor for suicide and can manifest in officers who are unable to adequately cope with work stress interacting with their PTSD symptoms (Violanti et al., 2016). Based on the research discussed, PTSD is a major problem in police officers and can potentially escalate to suicide if not treated.

As discussed before, police officers and other first responders may be stigmatized for seeking mental health care. Haugen, McCrillis, Smid, and Nijdam (2017) found that first responders feared that mental health services would not maintain confidentiality and have a negative impact on their careers. First responders may also encounter barriers for seeking mental health care such as scheduling concerns and not knowing where to get help (Haugen et al., 2017). Even with stigma and barriers to mental health care, police officers may not even acknowledge the trauma they go through nor attempt to deal with it on their own (Heffren & Hausdorf, 2016). Among police officers who did acknowledge their trauma and sought help, Heffren and Hausdorf (2016) found that they sought help from friends and family outside of work instead of professional services. Even so, police officers only sought help from these sources when they felt comfortable with sharing

distressful information with others (Heffren & Hausdorf, 2016). Mental health services can help police officers, but some officers may become stigmatized, encounter barriers, and may not even be aware they have been traumatized. As such, it is important for police departments to destigmatize mental illness and help their officers gain easier access to mental health services.

As debilitating as PTSD can be for police officers, research has been conducted on how police officers can overcome their symptoms. Previous research has also explored the construct of post-traumatic growth, which is a set of positive changes after the experience of a traumatic event (Chopko, Palmieri, & Adams, 2018). These positive changes can include a greater appreciation of life, improved relationships, and renewed purpose in life (Chopko et al., 2018). One such way is through the way an officer copes with their trauma. Arble, Daugherty, and Arnetz (2018) found that approach-based coping, physical exercise, and social support led to positive outcomes in police officers, such as more post-traumatic growth and greater well-being. Other factors that can help post-traumatic growth are gratitude and satisfaction with life (Leppma et al., 2018). In addition to treating officers, it is recommended for clinicians to include family members in treatment planning through educating them about police stress and trauma and referring them to psychological services if needed (Papazoglou & Tuttle, 2018). Thus, it is possible for police officers to positively grow from their traumatic experiences, and it is important to treat family systems as well as individual officers. Taken together, the research in this subsection discussed the nature of PTSD, predictive factors of PTSD,

help seeking behaviors in police officers, and how police officers can overcome and grow from their trauma.

Summary

In this chapter, relevant research was discussed to create better understanding of the occupation of policing, pre-employment testing, the various types of stressors police officers face, and the cost of stressors on the lives of police officers. By establishing this framework, readers can develop a better understanding of what police officers go through and how it affects them on an emotional and interpersonal basis. Understanding the nature of policing, the history of pre-employment testing, stress/worry, family problems, negative emotions, and interpersonal difficulties will assist in presenting information and data collection in the current study and future research conducted on pre-employment testing of police officer candidates.

Chapter 3: Research Method

Introduction

Because the M-PULSE and the MMPI-2-RF are used to make decisions about whether candidates will be hired as police officers, it is important to conduct research on the statistical relationship between these two instruments. Any elevations on these instruments increase the likelihood of police officers suffering problems throughout their careers. Detecting any of these problems during pre-employment testing can allow departments to make informed decisions about which candidates to hire or grant a conditional offer of employment. Thus, the goal of the current study was to contribute to the literature about pre-employment testing of police officer candidates.

This study followed a nonexperimental, quantitative research design to focus on scores from two scales on assessments utilized for pre-employment testing of police officer candidates: the M-PULSE and the MMPI-2-RF. The purpose of this study was to examine whether scores from the Negative Emotions and Interpersonal Difficulties scales from the M-PULSE adequately predicted scores on the STW and FML from the MMPI-2-RF. Archival data of police officer candidates were provided by a corporation that conducts pre-employment assessments for local law enforcement agencies in Central California. To analyze the archival data and answer the research questions, multiple linear regressions were conducted. This chapter outlines the research design and rationale, the methodology, the plans for data collection and analysis, and threats to validity for this quantitative study.

Research Design and Rationale

The current study involved archival data analyzed with a nonexperimental, quantitative design. The objective was to determine whether scores from the Negative Emotions and Interpersonal Difficulties scales from the M-PULSE can predict scores on the STW and FML from the MMPI-2-RF. The predictor variables were scores on the Negative Emotions and Interpersonal Difficulties scales from the M-PULSE. The criterion variables were scores on the STW and FML scales from the MMPI-2-RF. A quantitative research design was selected for this study because it is used to test theories by examining relationships between variables (Creswell, 2014). Furthermore, the current study followed a nonexperimental design because there was no manipulation of variables nor random assignment (Warner, 2013). Instead, the identified variables were measured to determine whether they were meaningfully related (Warner, 2013). As such, using a nonexperimental, quantitative research design was appropriate for the current study.

Methodology

Population

The target population was police officer candidates who undergo pre-employment screening. Participants were police officer candidates from different cities in the state of California. All participants were over the age of 18.

Sampling and Sampling Procedures

For this study, the participant sample was drawn from archival data that were provided by a corporation that conducts pre-employment testing of police officer candidates. A systematic random sampling method was used to collect the sample. The

initial case was chosen at random and then every other case was chosen until the needed sample size was achieved. To be included in the current study, participants must have taken the M-PULSE and the MMPI-2-RF as part of their pre-employment testing. Data files of participants who took the MMPI-2 for their pre-employment testing were not included in this study. This sample size was determined using the G*Power software developed by Faul, Erdfelder, Lang, and Buchner (2009).

G*Power. G*Power software can assist researchers with determining the minimum sample size of their study to detect population effect sizes at specified alpha and power levels. This minimum sample size is based on statistical criteria and is not necessarily a representative sample for the study. Because this study involved multiple regression analysis, a sample size of 107 (via an a priori power analysis calculation in G*Power) with useable paired data of the predictor and criterion variables in each selected participant file was needed. This sample of size of 107 cases was needed to detect a medium-sized population predictor effect ($f^2 = 0.15$) with two predictors for each research question at alpha = .05 and power = .95. This potential target sample size took into consideration the data available from the organization at the time of data collection.

Procedures for Recruitment, Participation, and Data Collection

This study included archival data, which were provided by a corporation that conducts pre-employment testing of police officer candidates. As such, there were no recruitment procedures such as obtaining informed consent from any participants for this study. Further, when police officer candidates completed pre-employment testing, they signed an informed consent form at the time that detailed that their information can be

used for future research; therefore, informed consent was not be needed for the current study. There was also no need for debriefing or any follow-up procedures for any participants. The archival data came from stored files of police officer candidates who underwent pre-employment testing at the corporation. Written permission to collect the data from these stored files for the current study was obtained from the licensed psychologist (who is also the clinical director) of the corporation. In accordance with the American Psychological Association (2010), the data were collected by and placed into an Excel data file, protected by a password, imported into SPSS, and stored safely at the corporation after use, and after 5 years I will destroy the data. The original data will remain at the corporation and handled in accordance with their policies.

Instrumentation and Operationalization of Constructs

The instruments that were used for this study were the M-PULSE and the MMPI-2-RF. Only specific scores from four total scales across these two instruments were utilized for this study. The scores were collected from archival data and not a result of direct administration. The M-PULSE and the MMPI-2-RF are discussed in the following sections regarding reliability, validity, and delivery methods.

M-PULSE. The M-PULSE is a 455-item, self-report instrument designed to measure the future job performance of police officer candidates (Davis & Rostow, 2008). The M-PULSE can be administered online or by paper-and-pencil and takes between 50 and 90 minutes to complete (Davis & Rostow, 2008). The response set of the M-PULSE consists of the following four choices: *strongly agree*, *agree*, *disagree*, and *strongly disagree* (Davis & Rostow, 2008). These choices were selected to avoid neutral

responses from participants (Davis & Rostow, 2008). The M-PULSE consists of four components: two validity scales, 18 liability scales, 16 empirical scales (four primary scales and 12 secondary scales), 10 California POST scales, and one supplemental scale (MHS, n.d.). The mean standard score of all the scales of the M-PULSE is 50, and the standard deviation is 10 (Davis & Rostow, 2008). For all the scales of the M-PULSE, standard scores below 40 are associated with more desirable predispositions, attitudes, and behaviors for law enforcement work (Davis & Rostow, 2008). Meanwhile, standard scores above 60 are associated with less desirable predispositions, attitudes, and behaviors for law enforcement (Davis & Rostow, 2008). The validity, empirical, and POST scales were found to have adequate reliability, while the empirical scales and liability scales were respectively found to have adequate factorial validity and predictive validity (MHS, n.d.). Only the selected factors of negative emotions and interpersonal difficulties were used in this study and are not meant to represent a full evaluation of police officer candidates based on the M-PULSE. These factors will be discussed in the following subsections.

Negative emotions. This is a subscale that falls under the primary empirical Negative Self-Issues scale (Davis & Rostow, 2008). *Negative emotions* are defined by the M-PULSE as having a poor frame of mind, low self-confidence, and feelings of unhappiness (Davis & Rostow, 2008). Sample items of this subscale include statements such as “I worry a lot” and “I worry about job stress getting to me” (Davis & Rostow, 2008). High scores on the Negative Emotions subscale are associated with shyness and a tendency to withdraw from social activities (Davis & Rostow, 2008). Scores on this

empirical subscale were not affected by gender and ethnicity in the normative sample (Davis & Rostow, 2008). This subscale was found to have a Cronbach's Alpha of 0.94 (Davis & Rostow, 2008).

Interpersonal difficulties. This scale is one of the liability scales of the M-PULSE (Davis & Rostow, 2008). This purpose of this liability scale is to predict candidates who may have difficulty with interpersonal skills (Davis & Rostow, 2008). Interpersonal Difficulties is defined by the M-PULSE as being at-risk for problems in personal relationships, whether it is on-duty (with fellow police officers, supervisors, and citizens) or off-duty (with family members, spouses, and children) (MHS, n.d.). This liability scale suggests that the candidate lacks the ability to interact with and relate to people, such as colleagues, supervisors, and citizens in the community (Davis & Rostow, 2008). Since a component of policing is interacting with different types of people, interpersonal difficulties can predict a negative impact on job performance (Davis & Rostow, 2008). Police officer candidates who score high on this liability scale are believed to have significant family stress or relationship problems (Davis & Rostow, 2008). Scores on this liability scale were not affected by gender or ethnicity in the normative sample (Davis & Rostow, 2008). This liability scale has the following regression statistics: $F(27, 2{,}893) = 17.7$, $R^2 = 0.26$, $p < .0001$.

MMPI-2-RF. The MMPI-2-RF was published in 2008 and is a revised edition of the MMPI-2 with 338 items instead of 567 (Ben-Porath & Tellegen, 2008). The purpose of the MMPI-2-RF is to serve as a general measure of personality and psychological illness (Williams, Davis, & Rostow, 2011). It consists of fifty-one total scales made of

the following components: nine validity scales, three higher-order scales, nine restructured clinical (RC) scales, twenty-three specific problems (SP) scales, two interest scales, and five PSY-5 scales (Wygant, 2017). The MMPI-2-RF is able to be administered via paper and pencil or electronically, and the administration time of this instrument takes between thirty-five to fifty minutes (University of Minnesota Press, 2019). The minimum reading level for the MMPI-2-RF is fifth grade and is intended to assess participants who are eighteen years and older (University of Minnesota, 2019). The MMPI-2-RF has been used in forensic, mental health, medical, and public safety settings and has been backed up by previous research as a suitable instrument for pre-employment testing of police officer candidates (Wygant, 2017; Morison, 2017). The selected scales of STW and FML will be used in this study and are not meant to represent a completed evaluation of police officer candidates based on the MMPI-2-RF. These aforementioned factors will be discussed in more detail in the following subsections.

Stress/worry. This scale falls under Restructured Clinical Scale Seven (RC7) of the MMPI-2-RF, which is known as Dysfunctional Negative Emotions (Wygant, 2017). RC7 encompasses issues associated with irritability, anger, and maladaptive (Ben-Porath & Tellegen, 2008). The STW scale falls under RC7 as one of the internalizing facets and is defined as being preoccupied with disappointments and having difficulties with time pressures (Wygant, 2017). There are seven items under this scale (Ben-Porath, 2012). T scores that are greater than or equal to sixty-five ($\geq$ 65T) indicates the score is clinically significant (Ben-Porath & Tellegen, 2008). Internal consistency reliability did not significantly differ between males and females in the normative sample of the MMPI-2-

RF (Tellegen & Ben-Porath, 2011). Empirical correlates of this scale include being stress-reactive, worry-prone, and engaging in obsessive rumination (Ben-Porath, 2012).

Family problems. This scale falls under the Interpersonal domain of Specific Problems on the MMPI-2-RF (Wygant, 2017). The FML scale is defined as having conflictual relationships with family members (Wygant, 2017). There are ten items under this scale (Ben-Porath, 2012). As with the STW scale, T scores that are greater than or equal to sixty-five indicates the score is clinically significant (Ben-Porath & Tellegen, 2008). Internal consistency reliability did not significantly differ between males and females in the normative sample of the MMPI-2-RF (Tellegen & Ben-Porath, 2011). Empirical correlates of this scale include having family conflicts, poor family functioning, having strong negative feelings about family members, and blaming family members for his or her difficulties (Ben-Porath, 2012).

Data Analysis Plan

Data was analyzed using the statistical software, Statistical Package for the Social Sciences (SPSS), version 25. To analyze the data, multiple regression was used to answer the research questions of this study. Multiple regression is used when researchers desire to predict scores on a criterion variable by using the scores of two or more predictor variables (Warner, 2013). This statistical test has three assumptions: independence of observations between the participants, multivariate normal distribution in the population, and homoscedasticity (Yockey, 2011). The archival data was tested to ensure that it meets the aforementioned assumptions such that scores of participants do not influence each other, each variable is normally distributed, and variances on the

criterion variables are equal in the population for the combination of the predictor variables (Yockey, 2011).

The data that was collected was archival in nature and was gathered from individuals seeking employment in law enforcement. The data was originally collected during the pre-employment testing process, and selected variables were collected into a Microsoft Excel data file and then imported into SPSS for analysis. The predictor variables were scores on the Negative Emotions and the Interpersonal Difficulties scales from the M-PULSE, and the criterion variables were scores on the STW and FML scales from the MMPI-2-RF. The aforementioned predictor and criterion variables are continuous and were suitable to be analyzed by multiple regression. The research questions and hypotheses for this study are listed below:

RQ1: To what extent do the M-PULSE scale scores of Negative Emotions and Interpersonal Difficulties predict scores on the Stress/Worry scale on the MMPI-2-RF?

$H_0$1: Scores on the two M-PULSE scales, Negative Emotions and Interpersonal Difficulties, do not predict scores on the Stress/Worry scale from the MMPI-2-RF.

$H_1$1: Scores on the two M-PULSE scales, Negative Emotions and Interpersonal Difficulties, predict scores on the Stress/Worry scale from the MMPI-2-RF.

RQ2: To what extent do the M-PULSE scale scores of Negative Emotions and Interpersonal Difficulties predict scores on the Family Problems scale from the MMPI-2-RF?

$H_0$2: Scores on the two M-PULSE scales, Negative Emotions and Interpersonal Difficulties, do not predict scores on the Family Problems scale from the MMPI-2-RF.

$H_1$2: Scores on the two M-PULSE scales, Negative Emotions and Interpersonal Difficulties, predict scores on the Family Problems scale from the MMPI-2-RF.

Threats to Validity

Creswell (2014) discussed threats to validity and defined this term as one that raises questions about about a researcher's ability to conclude that the variables of interest affect the expected outcome and not some other factor. Creswell (2014) recommended that researchers must identify threats to validity and design their studies in order to minimize such threats. There are two types of threats to validity: internal and external (Creswell, 2014). First, internal validity threats threaten the researcher's ability to draw correct inferences from the data about the population of interest (Creswell, 2014). Since data will be archival, there were no internal validity threats, such as issues regarding attrition, testing, or instrumentation.

Second, external validity threats are when researchers draw incorrect from sample data to other persons, settings, and past or future situations (Creswell, 2014). For this study, one external validity threat will be the interaction of setting and treatment. This external validity threat will arise due to the characteristics of the setting of participants in this study (Creswell, 2014). Data for this study will primarily be based on police officer candidates who reside in the central California area. Because of this, it will be difficult for the results of this study to be generalized to other settings (Creswell, 2014). As such, the results of this study may not be generalizable to police officers in other parts of the world. This threat to external validity was acknowledged in chapter five (discussion) of this study.

Ethical Procedures

When police officer candidates went through pre-employment testing, they signed a release that explained that their information was being collected for pre-employment testing and filled out an informed consent form that the data would be used for future research. The participants were aware of their ability to withdraw their consent if they did not wish to grant permission for their information to be used for future research. The consent form is on file and available for viewing at the corporation. Permission to gain access to the data will be granted by the corporation that houses the needed data for this study. Permission to go through with this study as planned will be gained from Walden University's Institutional Review Board (IRB) by using the necessary documents. Data will be kept anonymous and confidential and no identifying information that can be traced back to participants will be presented in the current study. The Excel data file that will be created for this study will be stored at the corporation and destroyed by the researcher after five years in accordance with procedures outlined by the American Psychological Association (2010). The original data will stay with the corporation and be handled in accordance with their regulations.

Summary

This chapter outlined the methodology, instruments, research questions and hypotheses, data collection and analysis plan, and ethical considerations of the current study. This study followed a quantitative, non-experimental design and use archival data collected by a private corporation. Data was analyzed using simple regression within the statistical program SPSS. The goal of this study was to add to the research literature on

pre-employment testing of police officer candidates. Results of this study will be presented in Chapter 4.

Chapter 4: Results

Introduction

This chapter will present an analysis and explanation of the results of this study, where scores of identified scales from the M-PULSE (negative emotions and interpersonal difficulties) were used to predict scores on scales from the MMPI-2-RF (stress/worry and family problems). The purpose of this quantitative study was to determine the extent that scores on the selected M-PULSE scales predict scores on the selected MMPI-2-RF scales. The goal of this research is to build on current knowledge and inform future practices of pre-employment testing of police officer candidates. The following are the research questions and hypotheses of this study:

RQ1: To what extent do the M-PULSE scale scores of Negative Emotions and Interpersonal Difficulties predict scores on the Stress/Worry scale on the MMPI-2-RF?

$H_0$1: Scores on the two M-PULSE scales, Negative Emotions and Interpersonal Difficulties, do not predict scores on the Stress/Worry scale from the MMPI-2-RF.

$H_1$1: Scores on the two M-PULSE scales, Negative Emotions and Interpersonal Difficulties, predict scores on the Stress/Worry scale from the MMPI-2-RF.

RQ2: To what extent do the M-PULSE scale scores of Negative Emotions and Interpersonal Difficulties predict scores on the Family Problems scale from the MMPI-2-RF?

$H_0$2: Scores on the two M-PULSE scales, Negative Emotions and Interpersonal Difficulties, do not predict scores on the Family Problems scale from the MMPI-2-RF.

$H_1$2: Scores on the two M-PULSE scales, Negative Emotions and Interpersonal Difficulties, predict scores on the Family Problems scale from the MMPI-2-RF.

Data Collection

The data utilized for this study were archival and provided by a corporation that conducts pre-employment testing of police officer candidates. As such, there were no recruitment procedures and the data provided had a 100% response rate. There were no discrepancies from the data collection plan in Chapter 3. Archival data of 107 participants with scores on the four scales across the M-PULSE and MMPI-2-RF were successfully acquired, which maintained the G*Power calculation of a final sample size of 107 in order to obtain a medium effect size ($f^2 = 0.15$) with an alpha level of .05 and a power level of .95.

The archival data for this study were collected from the files of police officer candidates who applied for a position in law enforcement and completed the pre-employment process. *T* scores from the identified scales on the M-PULSE (Negative Emotions and Interpersonal Difficulties scale) and the MMPI-2-RF (Stress/Worry and Family Problems scale) served as the data for this study. The archival data were first input into an Excel spreadsheet and then imported into SPSS for multiple regression analysis. No data on individual demographics were collected, so information such as sex and age were unknown for this study. The final sample of this study consisted of police officers who completed pre-employment testing to apply for law enforcement positions in California. Because of this, the final sample of this study only captures a small portion of

the full population of police officers. Therefore, the results of this study may have limited generalizability.

Results of Multiple Regression

The statistical test used for this study was multiple regression. Multiple regression is when scores on two or more predictor variables are used to predict scores on a criterion variable (Warner, 2013). The predictor variables of this study were negative emotions (M = 44.98, SD = 10.674) and interpersonal difficulties (M = 48.57, SD = 11.567). The criterion variables of this study were stress/worry (M = 42.43, SD = 6.389) and family problems (M = 42.86, SD = 6.759). The archival data used for this study met the assumptions of multiple regression analysis. The scores for each of the participants were independent of each other, the variables were all normally distributed, and the variances on the criterion variables were equal in the population for all possible combinations of the predictor variables (Yockey, 2011). Multiple regression analysis was used for both research questions, which will be detailed in the following sections.

Multiple Regression of Research Question 1

RQ1: To what extent do the M-PULSE scale scores of negative emotions and interpersonal difficulties predict scores on the Stress/Worry scale on the MMPI-2-RF?

$H_0$1: Scores on the two M-PULSE scales, Negative Emotions and Interpersonal Difficulties, do not predict scores on the Stress/Worry scale from the MMPI-2-RF.

$H_1$1: Scores on the two M-PULSE scales, Negative Emotions and Interpersonal Difficulties, predict scores on the Stress/Worry scale from the MMPI-2-RF.

A multiple regression was conducted predicting Stress/Worry from the variables negative emotions and interpersonal difficulties. Overall, the regression was significant, $F(2, 104) = 6.687$, $p < .05$, $R^2 = 0.114$. Of the predictors investigated, negative emotions ($\beta = 0.353$, $t(104) = 3.585$, $p < .05$) was significant. But interpersonal difficulties was not a significant predictor of stress/worry, $\beta = 0.057$, $t(104) = 0.581$, $p > .05$.

Based on the results of this multiple regression, the null hypohesis can be rejected. Together, negative emotions and interpersonal difficulties significantly predicted stress/worry. Additionally, the effect size of this multiple regression was 0.114, which was close to a medium effect size. This meant that the predictors accounted for approximately 11% of the variance in stress/worry. Individually, negative emotions was a significant predictor of stress/worry, whereas interpersonal difficulties was not a significant predictor of stress/worry.

Multiple Regression of Research Question 2

RQ2: To what extent do the M-PULSE scale scores of negative emotions and interpersonal difficulties predict scores on the Family Problems scale from the MMPI-2-RF?

$H_0$2: Scores on the two M-PULSE scales, Negative Emotions and Interpersonal Difficulties, do not predict scores on the Family Problems scale from the MMPI-2-RF.

$H_1$2: Scores on the two M-PULSE scales, Negative Emotions and Interpersonal Difficulties, predict scores on the Family Problems scale from the MMPI-2-RF.

A multiple regression was conducted predicting family problems from the variables negative emotions and interpersonal difficulties. Overall, the regression was

significant, $F(2, 104) = 6.497$, $p < .05$, $R^2 = 0.111$. Of the predictors investigated, negative emotions ($\beta = 0.348$, $t(104) = 3.527$, $p < .05$) was significant. But interpersonal difficulties was not a significant predictor of family problems, $\beta = 0.053$, $t(104) = 0.541$, $p > .05$.

Based on the results of this multiple regression, the null hypothesis can be rejected. Together, negative emotions and interpersonal difficulties significantly predicted family problems. Additionally, the effect size of this multiple regression was 0.111, which was close to a medium effect size. This meant that the predictors accounted for approximately 11% of the variance in family problems. Like with RQ1, individually, negative emotions was a significant predictor of family problems, whereas interpersonal difficulties was not a significant predictor of family problems.

Summary

This chapter presented the data collection plan and results of the current study. The statistical test used to answer the two research questions of this study was multiple regression. Based on the multiple regression analyses, both tests were statistically significant. The variable Negative emotions was a significant predictor for both stress/worry and family problems. In contrast, interpersonal difficulties was not a significant predictor for both stress/worry and family problems. The next chapter will present an interpretation of these findings, the limitations of this study, recommendations for future research, and the implications of the current study's results.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this quantitative, nonexperimental study was to determine the extent that scores on the Negative Emotions and Interpersonal Difficulties scales from the M-PULSE predict scores on the Stress/Worry and Family Problems scales from the MMPI-2-RF. This study was conducted to build on current research and inform future practices of pre-employment testing of police officer candidates. Archival data were collected from a corporation in California that conducts pre-employment testing of police officer candidates. Multiple regression was used to analyze the archival data, which showed that negative emotions and interpersonal difficulties significantly predicted stress/worry and family problems. However, when the predictors were examined individually, negative emotions was found to be a significant predictor of stress/worry and family problems, whereas interpersonal difficulties alone was not a significant predictor of stress/worry and family problems. Thus, the results of this study indicated that scores on the Negative Emotions and Interpersonal Difficulties scales from the M-PULSE significantly predicted scores on the Stress/Worry and Family Problems scales from the MMPI-2-RF.

Interpretation of the Findings

The findings of this study revealed a statistical relationship between selected scales on the M-PULSE and the MMPI-2-RF. Therefore, this study adds to the findings of Ellingwood et al. (2018) and Tarescavage et al. (2015) of how the M-PULSE and MMPI-2-RF are psychometrically sound instruments for use in pre-employment testing

of police officer candidates. In this study, the Negative Emotions and Interpersonal Difficulties scales from the M-PULSE were both found to be significant predictors of Stress/Worry and Family Problems from the MMPI-2-RF. However results also indicated that individually interpersonal difficulties was not a significant predictor of both stress/worry and family problems. This could mean that feelings of happiness, low self-confidence, and a poor frame of mind (Rostow, 2008) could be associated with preoccupation with worrying and conflictual family relationships (Wygant, 2017). Whether officers are unaware of trauma or other negative feelings or experience barriers when seeking mental health treatment (Heffren & Hausdorf, 2016; Haugen et al., 2017), the presence of negative emotions may affect their stress levels and familial relationships.

Although one of the selected scales on the M-PULSE was a significant predictor for the criterion variables on an individual level, the findings of this study still highlight the importance of using multiple measures for pre-employment testing. This allows for evaluators to gain a better understanding of candidates and make more informed decisions on who is psychologically suitable to become a police officer (The International Association of Chiefs of Police, 2014). The findings of this study may be expanded upon by future research that can further explore statistical relationships between scales and sub scales on the M-PULSE and the MMPI-2-RF. Future research can also replicate or conduct this type of study in different parts of the world to account for different locations, environments, and contexts where police officers may work.

Further, this study used the job strain model by Karasek (1979) as the theoretical framework. The job strain model addressed how psychological strain is due to the

interaction between job demands and the individual's ability to make decisions (Karasek, 1979). Given the current study focused on the extent the selected scales on the M-PULSE (Negative Emotions and Interpersonal Difficulties) predicted the selected scales on the MMPI-2-RF (Stress/Worry and Family Problems), the chances of psychological strain could be increased in candidates with higher scores on Negative Emotions and Interpersonal Difficulties. Since both Negative Emotions and Interpersonal Difficulties were both significant predictors of Stress/Worry, this psychological strain from the demands of police work could manifest form of emotional exhaustion, anxiety, and depression as discussed by Santa Maria et al. (2018). In addition, both Negative Emotions and Interpersonal Difficulties together were found to be significant predictors of Family Problems. If higher scale scores on Negative Emotions and Interpersonal Difficulties are associated with higher psychological strain, then it could also increase the chances of family problems. Family problems could manifest in the form of concern from spouses and poor marital functioning, which have both been associated with the job demands of law enforcement (Karaffa et al., 2015; Tuttle et al. 2018). This would mean that evaluators would need to be aware of elevations on the Negative Emotions and Interpersonal Difficulties scales from the M-PULSE during the pre-employment process.

Limitations of the Study

One limitation of this study was the usage of archival data. Archival data can be incomplete, erroneously collected, or tainted by researcher bias. For this study, the archival data was complete, free of errors, and free of researcher bias. Another limitation for this study was the question of whether or not candidates answered truthfully on the

M-PULSE and MMPI-2-RF when they went through pre-employment testing. To account for this, both the M-PULSE and MMPI-2-RF have scales that measure test-taking behavior. The final limitation for this study was generalizability. Since this study featured archived scores of police officers who resided in California, the results could have limited generalizability to police officers in different parts of the world.

Recommendations

This study utilized two scales from the M-PULSE and two scales from the MMPI-2-RF. Future research on this topic could examine relationships between other scales and sub scales from the M-PULSE and the MMPI-2-RF. Such research could supplement more information about statistical relationships between the M-PULSE and the MMPI-2-RF. A second recommendation would be for these instruments to be studied in conjunction with other assessments, such as the California Psychological Inventory (Roberts et al., 2019). A third recommendation for future research is to replicate or conduct similar studies in different parts of the world. Research conducted in this way can take into account different contexts and environments, such as police officers who work in larger urban areas or in remote rural areas. The current study established a statistical relationship between scales on the M-PULSE and the MMPI-2-RF. The given recommendations for future research can expand on the findings of this study and contribute to the research literature on pre-employment testing of police officer candidates.

Implications

The results of this study showed a statistical relationship between selected scales on the M-PULSE (Negative Emotions and Interpersonal Difficulties) and the MMPI-2-RF (Stress/Worry and Family Problems). As such, the results of this study can inform police psychologists and other evaluators to become more aware of elevations on scales on the M-PULSE and MMPI-2-RF in order to make more informed decisions on which candidates pass the pre-employment process. The findings of this study can open the door for future research on the topic of pre-employment testing of police officer candidates. Future research can explore statistical relationships between different scales and sub scales across the M-PULSE and MMPI-2-RF. Such research can deepen understanding of statistical relationships between the M-PULSE and MMPI-2-RF.

Positive Social Change

Police officer candidates who have high elevations on instruments such as the M-PULSE and MMPI-2-RF are likely to have problems in their professional and personal lives. Pre-employment testing allows for police psychologists to catch potential problematic behaviors in candidates and to make more informed decisions on who does or does not pass pre-employment testing. When the results of pre-employment screening are presented to police departments, the administrations can also make more informed decisions on who to ultimately hire as police officers. This can lead to the hiring of the best possible candidates who are capable of performing the responsibilities of police officers and who are mentally centered. Furthermore, police officer candidates who may have some degree of struggle with mental health can be referred to psychological

services, which can help both them and their families. The career of policing is highly stressful and comes with important responsibilities (Frank, Lambert, & Qureshi, 2017; Bano & Talib, 2017). Because of this, it is imperative that the right people are hired for this career, and a way to discover suitable people is through pre-employment testing.

Conclusion

The current study contributed to the research literature on pre-employment testing of police officer candidates. In order to better understand prospective candidates applying for positions in law enforcement, this study showed the necessity of utilizing multiple measurements during the pre-employment process. This study established the presence of a statistical relationship between selected measures across the M-PULSE and MMPI-2-RF. In order to understand the bigger picture, more research must be conducted on the process of pre-employment testing of police officer candidates. More research could hopefully lead to a better understanding of pre-employment testing and what type of person is needed to become an effective police officer.

Police officers arguably have one of the most stressful occupations (Frank, Lambert, & Qureshi, 2017). They are counted on to protect and serve their communities and uphold law and order (Bano & Talib, 2017). When they come against threats, they have less than a second to decide whether or not to use deadly force (Sharps & Hess, 2008). Even if they use deadly force in order to defend their communities, they can become vilified and scrutinized by the very people they promised to protect and serve (Tuttle et al., 2018). Therefore, it is important to identify and hire psychologically suitable candidates for positions in law enforcement during pre-employment testing (The

International Association of Chiefs of Police, 2014). This study hoped to increase understanding about the pre-employment process and the type of person it takes to become a police officer. Furthermore, the results of this study can help police psychologists and police departments make more informed decisions of which candidates to hire as police officers. Thus, it is important police psychologists and police departments to collaborate and refine pre-employment processes in order to ensure that the best possible candidates are hired to protect and serve their communities.

References

Adam, B. J. (2013). Comparative analysis of select scales on the M-PULSE inventory and MMPI-2: Predicting police officer performance from pre-employment psychological evaluations . Retrieved from ProQuest Dissertations & Theses Global. (Order No. 3541628)

Adams, I., & Mastracci, S. (2019). Police body-worn cameras: Effects on officers' burnout and perceived organizational support. *Police Quarterly*, *22*(1), 5–30. https://doi-org.ezp.waldenulibrary.org/10.1177/1098611118783987

Alberton, A. M., & Gorey, K. M. (2018). Contact is a stronger predictor of attitudes toward police than race: A state-of-the-art review. *Policing-An International Journal of Police Strategies & Management*, *41*(1), 2–23. https://doi-org.ezp.waldenulibrary.org/10.1108/PIJPSM-06-2017-0070

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.

American Psychological Association. (2010). *Ethical principles of psychologists and code of conduct*. Retrieved from https://www.apa.org/ethics/code/

Arble, E., Daugherty, A. M., & Arnetz, B. B. (2018). Models of first responder coping: Police officers as a unique population. *Stress and Health: Journal of the International Society for the Investigation of Stress*. https://doi-org.ezp.waldenulibrary.org/10.1002/smi.2821

Bano, B., & Talib, P. (2017). Understanding police stress towards a secure and sustainable society. *International Journal of Police Science &*

Management, *19*(3), 159–170. https://doi-org.ezp.waldenulibrary.org/10.1177/1461355717713999

Barthelemy, J. J., Chaney, C., Maccio, E. M., & Church, W. T., II. (2016). Law enforcement perceptions of their relationship with community: Law enforcement surveys and community focus groups. *Journal of Human Behavior in the Social Environment*, *26*(3–4), 413–429. https://doi-org.ezp.waldenulibrary.org/10.1080/10911359.2016.1139992

Baughman, P., Mnatsakanova, A., Gu, J. K., Violanti, J. M., & Andrew, M. E. (2017). Association of work organization stressors with psychosocial outcomes in police officers. *Association of Work Organization Stressors with Psychosocial Outcomes in Police Officers*, 1. https://doi-org.ezp.waldenulibrary.org/10.1037/e506642017-001

Bell, L. B., Virden, T. B., Lewis, D. J., & Cassidy, B. A. (2015). Effects of 13-hour 20-minute work shifts on law enforcement officers' sleep, cognitive abilities, health, quality of life, and work performance: The Phoenix study. *Police Quarterly*, *18*(3), 293–337. https://doi-org.ezp.waldenulibrary.org/10.1177/1098611115584910

Ben-Porath, Y. S. (2012). *Interpreting the MMPI-2-RF*. University of Minnesota Press.

Ben Porath, Y. S., & Tellegen, A. (2008). *MMPI-2-RF (Minnesota multiphasic personality inventory) manual for administration, scoring, and interpretation*. Minneapolis, MN: Pearson.

Bergman, A. L., Christopher, M. S., & Bowen, S. (2016). Changes in facets of

mindfulness predict stress and anger outcomes for police officers. *Mindfulness*, *7*(4), 851–858. https://doi.org/10.1007/s12671-016-0522-z

Bishopp, S. A., Piquero, N. L., Worrall, J. L., & Piquero, A. R. (2019). Negative affective responses to stress among urban police officers: A general strain theory approach. *Deviant Behavior*, *40*(6), 635–654. https://doi-org.ezp.waldenulibrary.org/10.1080/01639625.2018.1436568

Bishopp, S. A., Worrall, J., & Piquero, N. L. (2016). General strain and police misconduct: the role of organizational influence. *Policing-An International Journal of Police Strategies & Management*, *39*(4), 635–651. https://doi-org.ezp.waldenulibrary.org/10.1108/PIJPSM-10-2015-0122

Bullock, K., & Garland, J. (2018). Police officers, mental (ill-)health and spoiled identity. *Criminology & Criminal Justice*, *18*(2), 173–189. https://doi-org.ezp.waldenulibrary.org/10.1177/1748895817695856

Carr, J. D., & Maxwell, S. R. (2018). Police officers' perceptions of organizational justice and their trust in the public. *Police Practice & Research: An International Journal*, *19*(4), 365–379. https://doi-org.ezp.waldenulibrary.org/10.1080/15614263.2017.1387784

Cheema, R. (2016). Black and blue bloods: Protecting police officer families from domestic violence. *Family Court Review*, *54*(3), 487–500. https://doi-org.ezp.waldenulibrary.org/10.1111/fcre.12226

Chopko, B. A., Palmieri, P. A., & Adams, R. E. (2018). Relationships among traumatic experiences, PTSD, and posttraumatic growth for police officers: A path

analysis. *Psychological Trauma: Theory, Research, Practice, and Policy*, *10*(2), 183–189. https://doi-org.ezp.waldenulibrary.org/10.1037/tra0000261.supp

Chu, H.-C. (2016). Risk factors for the severity of injury incurred in crashes involving on-duty police cars. *Traffic Injury Prevention*, *17*(5), 495–501. https://doi-org.ezp.waldenulibrary.org/10.1080/15389588.2015.1109082

Corey, D. M., Sellbom, M., & Ben-Porath, Y. S. (2018). Risks associated with overcontrolled behavior in police officer recruits. *Psychological Assessment*, *30*(12), 1691–1702. https://doi-org.ezp.waldenulibrary.org/10.1037/pas0000607

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods* (5th ed.). Thousand Oaks, CA: Sage.

Crowl, J. N. (2017). The effect of community policing on fear and crime reduction, police legitimacy and job satisfaction: An empirical review of the evidence. *Police Practice & Research*, *18*(5), 449–462. https://doi-org.ezp.waldenulibrary.org/10.1080/15614263.2017.1303771

Davis, R. D., & Rostow, C. D. (2008). *Matrix-Predictive uniform law enforcement selection evaluation inventory*. Multi-Health Systems, Inc.: Toronto.

Duxbury, L., & Halinski, M. (2018). It's not all about guns and gangs: role overload as a source of stress for male and female police officers. *Policing & Society*, *28*(8), 930–946. https://doi-org.ezp.waldenulibrary.org/10.1080/10439463.2017.1342644

Duxbury, L., Higgins, C., & Halinski, M. (2015). Identifying the antecedents of work-

role overload in police organizations. *Criminal Justice and Behavior*, *42*(4), 361–381. https://doi-org.ezp.waldenulibrary.org/10.1177/0093854814551017

Ellingwood, H., Williams, K. M., Sitarenios, G., & Solomon, J. (2018). Psychometric properties of a contextualized, actuarially informed assessment for law enforcement personnel selection: The m-pulse inventory. *Journal of Police and Criminal Psychology*. https://doi-org.ezp.waldenulibrary.org/10.1007/s11896-018-9290-0

Elliott, J. L., & Lal, S. (2016). Blood pressure, sleep quality and fatigue in shift working police officers: Effects of a twelve hour roster system on cardiovascular and sleep health. *International Journal of Environmental Research and Public Health*, *13*(2), 172. https://doi-org.ezp.waldenulibrary.org/10.3390/ijerph13020172

Ellrich, K., & Baier, D. (2017). Post-traumatic stress symptoms in police officers following violent assaults: A study on general and police-specific risk and protective factors. *Journal of Interpersonal Violence*, *32*(3), 331–356. https://doi-org.ezp.waldenulibrary.org/10.1177/0886260515586358

Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G*Power 3.1: Tests for correlation and regression analyses. *Behavior Research Methods*, *41*, 1149–1160. https://doi.org/10.3758/brm.41.4.1149

Fekedulegn, D., Burchfiel, C. M., Ma, C. C., Andrew, M. E., Hartley, T. A., Charles, L. E., Violanti, J. M. (2017). Fatigue and on-duty injury among police officers: The BCOPS study. *Journal of Safety Research*, *60*, 43–51. https://doi-

org.ezp.waldenulibrary.org/10.1016/j.jsr.2016.11.006

Fielding, N. G., Bullock, K., Fielding, J. L., & Hieke, G. (2018). Patterns of injury on duty and perceptions of support amongst serving police personnel in England and Wales. *POLICING & SOCIETY*, *28*(9), 1005–1024. https://doi-org.ezp.waldenulibrary.org/10.1080/10439463.2017.1374386

Fischer, F. M., Silva-Costa, A., Griep, R. H., Smolensky, M. H., Bohle, P., & Rotenberg, L. (2019). Working time society consensus statements: Psychosocial stressors relevant to the health and wellbeing of night and shift workers. *Industrial Health*, *57*(2), 175. Retrieved from https://search-ebscohost-com.ezp.waldenulibrary.org/login.aspx?direct=true&db=edo&AN=135729026&site=eds-live&scope=site

Frank, J., Lambert, E. G., & Qureshi, H. (2017). Examining police officer work stress using the job demands–resources model. *Journal of Contemporary Criminal Justice*, *33*(4), 348–367. https://doi-org.ezp.waldenulibrary.org/10.1177/1043986217724248

Galanis, P., Fragkou, D., Kaitelidou, D., Kalokairinou, A., & Katsoulas, T. A. (2019). Risk factors for occupational stress among Greek police officers. *Policing: An International Journal*, (4), 506-519. https://doi-org.ezp.waldenulibrary.org/10.1108/PIJPSM-09-2018-0131

Garbarino, S., Magnavita, N., Elovainio, M., Heponiemi, T., Ciprani, F., Cuomo, G., & Bergamaschi, A. (2011). Police job strain during routine activities and a major event. *OCCUPATIONAL MEDICINE-OXFORD*, *61*(6), 395–399. https://doi-

org.ezp.waldenulibrary.org/10.1093/occmed/kqr058

Gauthier, J. F., & Graziano, L. M. (2018). News media consumption and attitudes about police: In search of theoretical orientation and advancement. *Journal of Crime & Justice*, *41*(5), 504. Retrieved from https://search-ebscohost-com.ezp.waldenulibrary.org/login.aspx?direct=true&db=edo&AN=133399561&site=eds-live&scope=site

Geronazzo-Alman, L., Eisenberg, R., Shen, S., Duarte, C. S., Musa, G. J., Wicks, J., … Hoven, C. W. (2017). Cumulative exposure to work-related traumatic events and current post-traumatic stress disorder in New York City's first responders. *Comprehensive Psychiatry*, *74*, 134–143. https://doi-org.ezp.waldenulibrary.org/10.1016/j.comppsych.2016.12.003

Girgenti-Malone, A. A., Khoder, C., Vega, G., & Castillo, D. (2017). College students' perceptions of police use of force: do suspect race and ethnicity matter? *Police Practice & Research*, *18*(5), 492–506. https://doi-org.ezp.waldenulibrary.org/10.1080/15614263.2017.1295244

Gordijn, E. H., Vacher, L., & Kuppens, T. (2017). "To serve and protect" when expecting to be seen negatively: The relation between police officers' contact with citizens, meta-stereotyping, and work-related well-being. *Journal of Community & Applied Social Psychology*, *27*(3), 253–268. https://doi-org.ezp.waldenulibrary.org/10.1002/casp.2310

Grady, R. H., Butler, B. J., & Loftus, E. F. (2016). What should happen after an officer-involved shooting? Memory concerns in police reporting procedures. *JOURNAL*

OF APPLIED RESEARCH IN MEMORY AND COGNITION, *5*(3), 246–251. Retrieved from https://search-ebscohost-com.ezp.waldenulibrary.org/login.aspx?direct=true&db=edswss&AN=000385609000004&site=eds-live&scope=site

Gramagila, J. A., & Phillips, S. W. (2018). Police officers' perceptions of body-worn cameras in Buffalo and Rochester. *American Journal of Criminal Justice*, (2), 313. https://doi-org.ezp.waldenulibrary.org/10.1007/s12103-017-9403-9

Grant, H. B., Lavery, C. F., & Decarlo, J. (2019). An exploratory study of police officers: Low compassion satisfaction and compassion fatigue. *Frontiers in Psychology*, *9*. https://doi-org.ezp.waldenulibrary.org/10.3389/fpsyg.2018.02793

Griffin, J. D., & Sun, I. Y. (2017). Do work-family conflict and resiliency mediate police stress and burnout: A study of state police officers. *American Journal of Criminal Justice*, (2), 354. https://doi-org.ezp.waldenulibrary.org/10.1007/s12103-017-9401-y

Gutshall, C. L., Hampton, D. P., Sebetan, I. M., Stein, P. C., & Broxtermann, T. J. (2017). The effects of occupational stress on cognitive performance in police officers. *Police Practice & Research*, *18*(5), 463–477. https://doi-org.ezp.waldenulibrary.org/10.1080/15614263.2017.1288120

Habersaat, S. A., Geiger, A. M., Abdellaoui, S., & Wolf, J. M. (2015). Health in police officers: Role of risk factor clusters and police divisions. *Social Science & Medicine*, *143*, 213–222. https://doi-org.ezp.waldenulibrary.org/10.1016/j.socscimed.2015.08.043

Haugen, P. T., McCrillis, A. M., Smid, G. E., & Nijdam, M. J. (2017). Mental health stigma and barriers to mental health care for first responders: A systematic review and meta-analysis. *Journal of Psychiatric Research*, *94*, 218–229. https://doi-org.ezp.waldenulibrary.org/10.1016/j.jpsychires.2017.08.001

Hine, K. A., Porter, L. E., Westera, N. J., Alpert, G. P., & Allen, A. (2018). Exploring police use of force decision-making processes and impairments using a naturalistic decision-making approach. *CRIMINAL JUSTICE AND BEHAVIOR*, *45*(11), 1782–1801. https://doi-org.ezp.waldenulibrary.org/10.1177/0093854818789726

Hope, L. (2016). Evaluating the effects of stress and fatigue on police officer response and recall: A challenge for research, training, practice and policy. *Journal of Applied Research in Memory and Cognition*, *5*(3), 239–245. https://doi-org.ezp.waldenulibrary.org/10.1016/j.jarmac.2016.07.008

Johnson, R. R. (2017). Show me your hands! Police and public perceptions of violent interpersonal cues. *Journal of Police and Criminal Psychology*, *32*(4), 289–299. https://doi-org.ezp.waldenulibrary.org/10.1007/s11896-016-9221-x

Karaffa, K. M., & Koch, J. M. (2016). Stigma, pluralistic ignorance, and attitudes toward seeking mental health services among police officers. *CRIMINAL JUSTICE AND BEHAVIOR*, *43*(6), 759–777. Retrieved from https://search-ebscohost-com.ezp.waldenulibrary.org/login.aspx?direct=true&db=edswss&AN=000374795300004&site=eds-live&scope=site

Karaffa, K., Openshaw, L., Koch, J., Clark, H., Harr, C., & Stewart, C. (2015). Perceived

impact of police work on marital relationships. *Family Journal*, *23*(2), 120–131. https://doi-org.ezp.waldenulibrary.org/10.1177/1066480714564381

Karasek, R. A. (1979). Job demands, job decision latitude, and mental strain: Implications for job redesign. *Administrative Science Quarterly*, *24*(2), 285–308. https://doi-org.ezp.waldenulibrary.org/10.2307/2392498

Kahn, K. B., Steele, J. S., McMahon, J. M., & Stewart, G. (2017). How suspect race affects police use of force in an interaction over time. *LAW AND HUMAN BEHAVIOR*, *41*(2), 117–126. https://doi-org.ezp.waldenulibrary.org/10.1037/lhb0000218

Khan Nisar, S., Rasheed, M. I., & Wang Q. (2018). They can't safeguard you when they are under stress: An exploratory study on issues and problems of job stress in police. *International Journal of Police Science & Management*, *20*(2), 124–133. https://doi-org.ezp.waldenulibrary.org/10.1177/1461355718763467

Klimley, K. E., Van Hasselt, V. B., & Stripling, A. M. (2018). Posttraumatic stress disorder in police, firefighters, and emergency dispatchers. *Aggression and Violent Behavior*, *43*, 33–44. https://doi-org.ezp.waldenulibrary.org/10.1016/j.avb.2018.08.005

Knowles, G. J. (2016). Social psychological dynamics of hostage negotiation: forensic psychology, suicide intervention, police intelligence/counterintelligence, and tactical entry. *Journal of Criminal Psychology*, (1), 16. https://doi-org.ezp.waldenulibrary.org/10.1108/JCP-01-2016-0001

Kruger, D. J., Köster, M., Nedelec, J. L., & Murphy, S. F. (2018). A life history

framework advances the understanding of intentions for police cooperation. *Evolutionary Behavioral Sciences*, *12*(2), 87–98. https://doi-org.ezp.waldenulibrary.org/10.1037/ebs0000109

Kumar Agrahari, S., & Kotnala, A. (2018). A comparative study on life satisfaction and job anxiety of policeman and teachers. *Indian Journal of Health & Wellbeing*, *9*(5), 793–795. Retrieved from https://search-ebscohost-com.ezp.waldenulibrary.org/login.aspx?direct=true&db=a9h&AN=130685949&site=eds-live&scope=site

Lambert, E. G., Qureshi, H., & Frank, J. (2016). Spilling over. *International Journal of Police Science & Management*, *18*(2), 87–103. https://doi-org.ezp.waldenulibrary.org/10.1177/1461355716641972

Lambert, E. G., Qureshi, H., Frank, J., Klahm, C., & Smith, B. (2018). Job stress, job involvement, job satisfaction, and organizational commitment and their associations with job burnout among Indian police officers: A research note. *Journal of Police and Criminal Psychology*, (2), 85. https://doi-org.ezp.waldenulibrary.org/10.1007/s11896-017-9236-y

Lambert, E. G., Qureshi, H., Frank, J., Keena, L. D., & Hogan, N. L. (2017). The relationship of work-family conflict with job stress among Indian police officers: A research note. *Police Practice & Research*, *18*(1), 37–48. https://doi-org.ezp.waldenulibrary.org/10.1080/15614263.2016.1210010

Lambert, E. G., Qureshi, H., Keena, L. D., Frank, J., & Hogan, N. L. (2019). Exploring the link between work-family conflict and job burnout among Indian police

officers. *Police Journal*, *92*(1), 35–55. https://doi-org.ezp.waldenulibrary.org/10.1177/0032258X18761285

Lammers-van der Holst, H. M., & Kerkhof, G. A. (2015). Shift work tolerance and the importance of sleep quality: a study of police officers. *BIOLOGICAL RHYTHM RESEARCH*, *46*(2), 257–264. https://doi-org.ezp.waldenulibrary.org/10.1080/09291016.2014.985002

Lee, J., Choi, H. Kim, J., Nam, J., Kang, H., Koh, S., & Oh, S. (2016). Self-resilience as a protective factor against development of post-traumatic stress disorder symptoms in police officers. *Annals of Occupational & Environmental Medicine*, *28*, 1–7. https://doi-org.ezp.waldenulibrary.org/10.1186/s40557-016-0145-9

Lee, H. D., Kim, D., Woo, Y., & Reyns, B. W. (2019). Determinants of citizen support for community-oriented policing. *Police Practice & Research*, *20*(1), 34–47. https://doi-org.ezp.waldenulibrary.org/10.1080/15614263.2017.1396459

Leppma, M., Mnatsakanova, A., Sarkisian, K., Scott, O., Adjeroh, L., Andrew, M. E., … McCanlies, E. C. (2018). Stressful life events and posttraumatic growth among police officers: A cross-sectional study. *STRESS AND HEALTH*, *34*(1), 175–186. https://doi-org.ezp.waldenulibrary.org/10.1002/smi.2772

Levan, K., & Stevenson, K. (2019). "There's gonna be bad apples": Police-community relations through the lens of media exposure among university students. *International Journal for Crime, Justice & Social Democracy*, *8*(2), 83. Retrieved from https://search-ebscohost-com.ezp.waldenulibrary.org/login.aspx?direct=true&db=edb&AN=136780000&s

ite=eds-live&scope=site

Li, J., Cheung, J., & Sun, I. (2019). The impact of job and family factors on work stress and engagement among Hong Kong police officers. *Policing: An International Journal*, (2), 284. https://doi-org.ezp.waldenulibrary.org/10.1108/PIJPSM-01-2018-0015

Liao, S. W., Price-Sharps, J. L., & Sharps, M. J. (2018). Shoot/No-Shoot decisions: Dissociation, judgment, and assailant/weapon characteristics. *Journal of Police & Criminal Psychology*, *33*(3), 209. Retrieved from https://search-ebscohost-com.ezp.waldenulibrary.org/login.aspx?direct=true&db=edb&AN=131115349&site=eds-live&scope=site

Ma, C. C., Andrew, M. E., Fekedulegn, D., Gu, J. K., Hartley, T. A., Charles, L. E., … Burchfiel, C. M. (2015). Shift work and occupational stress in police officers. *Safety and Health at Work*, *6*(1), 25–29. https://doi-org.ezp.waldenulibrary.org/10.1016/j.shaw.2014.10.001

Ma, C. C., Hartley, T. A., Sarkisian, K., Fekedulegn, D., Mnatsakanova, A., Owens, S., … Andrew, M. E. (2019). Influence of work characteristics on the association between police stress and sleep quality. *Safety and Health at Work*, *10*(1), 30–38. https://doi-org.ezp.waldenulibrary.org/10.1016/j.shaw.2018.07.004

Magnavita, N., Capitanelli, I., Garbarino, S., & Pira, E. (2018). Work-related stress as a cardiovascular risk factor in police officers: a systematic review of evidence. *INTERNATIONAL ARCHIVES OF OCCUPATIONAL AND ENVIRONMENTAL HEALTH*, *91*(4), 377–389. https://doi-

org.ezp.waldenulibrary.org/10.1007/s00420-018-1290-y

Maran, D. A., Varetto, A., Zedda, M., & Ieraci, V. (n.d.). Occupational stress, anxiety and coping strategies in police officers. *OCCUPATIONAL MEDICINE-OXFORD*, *65*(6), 466–473. https://doi-org.ezp.waldenulibrary.org/10.1093/occmed/kqv060

Marchand, A., Nadeau, C., Beaulieu-Prévost, D., Boyer, R., & Martin, M. (2015). Predictors of posttraumatic stress disorder among police officers: A prospective study. *Psychological Trauma: Theory, Research, Practice, and Policy*, *7*(3), 212–221. https://doi-org.ezp.waldenulibrary.org/10.1037/a0038780.supp (Supplemental)

McCarthy, M. M., Porter, L. E., Townsley, M., & Alpert, G. P. (2019). The effect of community-oriented policing on police use of force: Does community matter? *Policing: An International Journal*, (4), 556. https://doi-org.ezp.waldenulibrary.org/10.1108/PIJPSM-10-2018-0148

McMahon, H. A. (2012). *An exploration of the construct validity of the empirical scales on the M-PULSE inventory using the MMPI-2 clinical scales* (Order No. 3517809). Available from ProQuest Dissertations & Theses Global. (1033330037). Retrieved from https://ezp.waldenulibrary.org/login?qurl=https%3A%2F%2Fsearch.proquest.com%2Fdocview%2F1033330037%3Faccountid%3D14872

Mears, D. P., Craig, M. O., Stewart, E. A., & Warren, P. Y. (2017). Thinking fast, not slow: How cognitive biases may contribute to racial disparities in the use of force

in police-citizen encounters. *Journal of Criminal Justice*, *53*, 12-24.

Multi-Health Systems. (n.d.). *Matrix-Predictive Uniform Law Enforcement Evaluation (M-PULSE) inventory*. Retrieved from http://lib.post.ca.gov/Publications/PsycScreeningManual/M-PULSE.pdf

Morison, Kevin P. (2017). Hiring for the 21st Century law enforcement officer: Challenges, opportunities, and strategies for success. Washington, DC: Office of Community Oriented Policing Services. Retrieved from https://ric-zai-inc.com/Publications/cops-w0831-pub.pdf

Motley, R. O., Jr., & Joe, S. (2018). Police use of force by ethnicity, sex, and socioeconomic class. *JOURNAL OF THE SOCIETY FOR SOCIAL WORK AND RESEARCH*, *9*(1), 49–67. https://doi-org.ezp.waldenulibrary.org/10.1086/696355

Mumford, E. A., Taylor, B. G., & Kubu, B. (2015). Law enforcement officer safety and wellness. *Police Quarterly*, *18*(2), 111–133. https://doi-org.ezp.waldenulibrary.org/10.1177/1098611114559037

Nix, J., Wolfe, S. E., & Campbell, B. A. (2017). Command-level police officers' perceptions of the "war on cops" and de-policing. *JUSTICE QUARTERLY*, *35*(1), 33–54. https://doi-org.ezp.waldenulibrary.org/10.1080/07418825.2017.1338743

Noblet, A., Maharee-Lawler, S., & Rodwell, J. (2012). Using job strain and organizational justice models to predict multiple forms of employee performance behaviours among Australian policing personnel. *The International Journal of Human Resource Management*, *23*(14), 3009–3026. https://doi-org.ezp.waldenulibrary.org/10.1080/09585192.2012.656989

Norton, K. (2017). Responding to a suicide death: The role of first responders. *Death Studies*, *41*(10), 639–647. https://doi-org.ezp.waldenulibrary.org/10.1080/07481187.2017.1335550

Padyab, M., Backteman-Erlanson, S., & Brulin, C. (2016). Burnout, coping, stress of conscience and psychosocial work environment among patrolling police officers. *Journal of Police and Criminal Psychology*, *31*(4), 229–237. https://doi-org.ezp.waldenulibrary.org/10.1007/s11896-015-9189-y

Papazoglou, K., & Chopko, B. (2017). The role of moral suffering (moral distress and moral injury) in police compassion fatigue and PTSD: An unexplored topic. *Frontiers in Psychology*, *8*. https://doi-org.ezp.waldenulibrary.org/10.3389/fpsyg.2017.01999

Papazoglou, K., Koskelainen, M., & Stuewe, N. (2018). Exploring the role of compassion satisfaction and compassion fatigue in predicting burnout among police officers. *Open Journal of Psychiatry & Allied Sciences*, *9*(2), 107–112. https://doi-org.ezp.waldenulibrary.org/10.5958/2394-2061.2018.00020.4

Papazoglou, K., & Tuttle, B. M. (2018). Fighting police trauma: Practical approaches to addressing psychological needs of officers. *SAGE OPEN*, *8*(3). https://doi-org.ezp.waldenulibrary.org/10.1177/2158244018794794

Perez-Floriano, L. R. & Gonzalez, J. A. (2019). When the going gets tough: A moderated mediated model of injury, job-related risks, stress, and police performance. *International Journal of Organizational Analysis*, (4), 1239. https://doi-org.ezp.waldenulibrary.org/10.1108/IJOA-05-2018-1423

Porter, K. L. & Henriksen, R. C. (2016). The phenomenological experience of first responder spouses. Family Journal, 24(1), 44–51. https://doi-org.ezp.waldenulibrary.org/10.1177/1066480715615651

President's Task Force on 21st Century Policing (2015). Final report of the President's Task Force on 21st century policing. Washington, DC: Office of Community Oriented Policing Services. Retrieved from https://cops.usdoj.gov/pdf/taskforce/taskforce_finalreport.pdf

Price, M. (2017). Psychiatric disability in law enforcement officers. *Behavioral Sciences & the Law*, *35*(2), 113–123. https://doi-org.ezp.waldenulibrary.org/10.1002/bsl.2278

Price-Sharps, J. (2017). Psych 127 lecture. Psych 127, California State University, Fresno.

Reaves, B. A. (2015). Local police departments, 2013: Personnel, policies, and practices (NCJ 248677). Retrieved from Bureau of Justice Statistics website: https://www.bjs.gov/content/pub/pdf/lpd13ppp.pdf

Reavley, N. J., Milner, A. J., Martin, A., Too, L. S., Papas, A., Witt, K., … LaMontagne, A. D. (2018). Depression literacy and help-seeking in Australian police. *Australian & New Zealand Journal of Psychiatry*, *52*(11), 1063–1074. https://doi-org.ezp.waldenulibrary.org/10.1177/0004867417753550

Regambal, M. J., Alden, L. E., Wagner, S. L., Harder, H. G., Koch, W. J., Fung, K., & Parsons, C. (2015). Characteristics of the traumatic stressors experienced by rural first responders. *Journal of Anxiety Disorders*, *34*, 86–93. https://doi-

org.ezp.waldenulibrary.org/10.1016/j.janxdis.2015.06.006

Reynolds, P. D., & Helfers, R. C. (2018). Differences in perceptions of organizational fairness based on job characteristics among police officers. *American Journal of Criminal Justice*, (2), 371-388. https://doi-org.ezp.waldenulibrary.org/10.1007/s12103-017-9404-8

Reynolds, P. D., & Helfers, R. C. (2018). Job characteristics and perceived organizational support among police officers. *Criminology, Crim. Just. L & Soc'y*, *19*, 46.

Roberts, R. M., Tarescavage, A. M., Ben-Porath, Y. S., & Roberts, M. D. (2019). Predicting postprobationary job performance of police officers using CPI and MMPI–2–RF test data obtained during preemployment psychological screening. *Journal of Personality Assessment*, *101*(5), 544–555. https://doi-org.ezp.waldenulibrary.org/10.1080/00223891.2018.1423990

Santa Maria, A., Wörfel, F., Wolter, C., Gusy, B., Rotter, M., Stark, S., … Renneberg, B. (2018). The role of job demands and job resources in the development of emotional exhaustion, depression, and anxiety among police officers. *Police Quarterly*, *21*(1), 109. Retrieved from https://search-ebscohost-com.ezp.waldenulibrary.org/login.aspx?direct=true&db=edb&AN=127736179&site=eds-live&scope=site

Sharps, M. J., & Hess, A. B. (2008). To shoot or not to shoot: Response and interpretation of response to armed assailants. *Forensic Examiner*, *17*(4), 54–64. Retrieved from https://search-ebscohost-com.ezp.waldenulibrary.org/login.aspx?direct=true&db=tsh&AN=36156973&site

=eds-live&scope=site

Siegrist, J. (1996). Adverse health effects of high-effort/low-reward conditions. *Journal of Occupational Health Psychology*, *1*(1), 27.

Singh, R. & Nayak, J. (2015). Mediating role of stress between work-family conflict and job satisfaction among the police officials: Moderating role of social support. *Policing: An International Journal of Police Strategies & Management*, (4), 738. https://doi-org.ezp.waldenulibrary.org/10.1108/PIJPSM-03-2015-0040

Stanley, I. H., Hom, M. A., & Joiner, T. E. (2016). A systematic review of suicidal thoughts and behaviors among police officers, firefighters, EMTs, and paramedics. *Clinical Psychology Review*, *44*, 25–44. https://doi-org.ezp.waldenulibrary.org/10.1016/j.cpr.2015.12.002

Stuart, H. (2017). Mental illness stigma expressed by police to police. *ISRAEL JOURNAL OF PSYCHIATRY AND RELATED SCIENCES*, *54*(1), 18–23. Retrieved from https://search-ebscohost-com.ezp.waldenulibrary.org/login.aspx?direct=true&db=edswsc&AN=000415836000003&site=eds-live&scope=site

Tarescavage, A. M., Brewster, J., Corey, D. M., & Ben-Porath, Y. S. (2015). Use of prehire Minnesota Multiphasic Personality Inventory-2–Restructured Form (MMPI-2-RF) police candidate scores to predict supervisor ratings of posthire performance. *Assessment*, *22*(4), 411–428. https://doi-org.ezp.waldenulibrary.org/10.1177/1073191114548445

Tarescavage, A. M., Corey, D. M., & Ben-Porath, Y. S. (2015). Minnesota Multiphasic

Personality Inventory–2–Restructured Form (MMPI-2-RF) predictors of police officer problem behavior. *Assessment*, *22*(1), 116–132. https://doi-org.ezp.waldenulibrary.org/10.1177/1073191114534885

Tarescavage, A. M., Corey, D. M., Gupton, H. M., & Ben-Porath, Y. S. (2015). Criterion validity and practical utility of the Minnesota Multiphasic Personality Inventory-2-Restructured Form (MMPI-2-RF) in assessments of police officer candidates. *Journal Of Personality Assessment*, *97*(4), 382–394. https://doi-org.ezp.waldenulibrary.org/10.1080/00223891.2014.995800

Tarescavage, A. M., Fischler, G. L., Cappo, B. M., Hill, D. O., Corey, D. M., & Ben-Porath, Y. S. (2015). Minnesota Multiphasic Personality Inventory-2-Restructured Form (MMPI-2-RF) predictors of police officer problem behavior and collateral self-report test scores. *Psychological Assessment*, *27*(1), 125–137. https://doi-org.ezp.waldenulibrary.org/10.1037/pas0000041.supp

Taylor, Y., Merat, N., & Jamson, S. (2019). The effects of fatigue on cognitive performance in police officers and staff during a forward rotating shift pattern. *Safety and Health at Work*, *10*(1), 67–74. https://doi-org.ezp.waldenulibrary.org/10.1016/j.shaw.2018.08.003

Tellegen, A. & Ben-Porath, Y. S. (2011). *MMPI-2-RF (Minnesota multiphasic personality inventory-2-restructured form technical manual.* University of Minnesota Press.

Terrill, W., Ingram, J. R., Somers, L. J., & Paoline III, E. A. (2018). Examining police use of force and citizen complaints. *Policing: An International Journal*, *41*(4),

496-509. https://doi-org.ezp.waldenulibrary.org/10.1108/PIJPSM-01-2018-0024

The International Association of Chiefs of Police. (2014). *Preemployment psychological evaluation guidelines*. Retrieved from https://www.theiacp.org/sites/default/files/all/p-r/Psych-PreemploymentPsychEval.pdf

Trinkner, R., Kerrison, E. M., & Goff, P. A. (2019). The force of fear: Police stereotype threat, self-legitimacy, and support for excessive force. *Law and Human Behavior*. https://doi-org.ezp.waldenulibrary.org/10.1037/lhb0000339.supp

Tsai, L. C.-F., Nolasco, C. A. R. I., & Vaughn, M. S. (2018). Modeling job stress among police officers: interplay of work environment, counseling support, and family discussion with co-workers. *Police Practice & Research*, *19*(3), 253–269. https://doi-org.ezp.waldenulibrary.org/10.1080/15614263.2017.1342091

Tucker, J. M. (2015). Police officer willingness to use stress intervention services: The role of perceived organizational support (POS), confidentiality and stigma. *International Journal of Emergency Mental Health*, *17*, 304–314.

Turgoose, D., Glover, N., Barker, C., & Maddox, L. (2017). Empathy, compassion fatigue, and burnout in police officers working with rape victims. *Traumatology*, *23*(2), 205–213. https://doi-org.ezp.waldenulibrary.org/10.1037/trm0000118

Tuttle, B. M., Giano, Z., & Merten, M. J. (2018). Stress spillover in policing and negative relationship functioning for law enforcement marriages. *Family Journal*, *26*(2), 246. Retrieved from https://search-ebscohost-

com.ezp.waldenulibrary.org/login.aspx?direct=true&db=edb&AN=130815587&site=eds-live&scope=site

Violanti, J. M., Andrew, M. E., Mnatsakanova, A., Hartley, T. A., Fekedulegn, D., & Burchfiel, C. M. (2016). Correlates of hopelessness in the high suicide risk police occupation. *Police Practice & Research*, *17*(5), 408–419. https://doi-org.ezp.waldenulibrary.org/10.1080/15614263.2015.1015125

Violanti, J. M., Fekedulegn, D., Andrew, M. E., Hartley, T. A., Charles, L. E., Miller, D. B., & Burchfield, C. M. (2017). The impact of perceived intensity and frequency of police work occupational stressors on the cortisol awakening response (CAR): Findings from the BCOPS study. *Psychoneuroendocrinology*, *75*, 124-131. http://dx.doi.org/doi:10.1016/j.psyneuen.2016.10.017

Violanti, J. M., Fekedulegn, D., Gu, J. K., Allison, P., Mnatsakanova, A., Tinney-Zara, C., & Andrew, M. E. (2018). Effort-reward imbalance in police work: Associations with the cortisol awakening response. *INTERNATIONAL ARCHIVES OF OCCUPATIONAL AND ENVIRONMENTAL HEALTH*, *91*(5), 513–522. https://doi-org.ezp.waldenulibrary.org/10.1007/s00420-018-1300-0

Violanti, J. M., Fekedulegn, D., Hartley, T. A., Charles, L. E., Andrew, M. E., Ma, C. C., & Burchfiel, C. M. (2016). Highly rated and most frequent stressors among police officers: Gender differences. *American Journal of Criminal Justice*, (4), 645. https://doi-org.ezp.waldenulibrary.org/10.1007/s12103-016-9342-x

Violanti, J. M., Ma, C. C., Mnatsakanova, A., Fekedulegn, D., Hartley, T. A., Gu, J. K., & Andrew, M. E. (2018). Associations between police work stressors and

posttraumatic stress disorder symptoms: Examining the moderating effects of coping. *Journal of Police and Criminal Psychology*. https://doi-org.ezp.waldenulibrary.org/10.1007/s11896-018-9276-y

Violanti, J. M., Mnatsakanova, A., Andrew, M. E., Allison, P., Gu, J. K., & Fekedulegn, D. (2018). Effort-reward imbalance and overcommitment at work: Associations with police burnout. *POLICE QUARTERLY*, *21*(4), 440–460. https://doi-org.ezp.waldenulibrary.org/10.1177/1098611118774764

Violanti, J. M., Owens, S. L., Fekedulegn, D., Ma, C. C., Charles, L. E., & Andrew, M. E. (2018). An exploration of shift work, fatigue, and gender among police officers: The BCOPS study. *Workplace Health & Safety*, *66*(11), 530–537. https://doi-org.ezp.waldenulibrary.org/10.1177/2165079918754586

Violanti, J. M., Owens, S. L., McCanlies, E., Fekedulegn, D., & Andrew, M. E. (2019). Law enforcement suicide: A review. Policing: An International Journal, 42(2), 141-164. https://doi-org.ezp.waldenulibrary.org/10.1108/PIJPSM-05-2017-0061

Ward, F., St. Clair-Thompson, H., & Postlethwaite, A. (2018). Mental toughness and perceived stress in police and fire officers. *POLICING-AN INTERNATIONAL JOURNAL OF POLICE STRATEGIES & MANAGEMENT*, *41*(6), 674–686. Retrieved from https://search-ebscohost-com.ezp.waldenulibrary.org/login.aspx?direct=true&db=edswss&AN=000447559900001&site=eds-live&scope=site

Warner, R. M. (2013). *Applied statistics: From bivariate through multivariate techniques* (2nd ed.). Thousand Oaks, CA: SAGE Publications.

Weitzer, R. (n.d.). American policing under fire: Misconduct and reform. *SOCIETY*, *52*(5), 475–480. https://doi-org.ezp.waldenulibrary.org/10.1007/s12115-015-9931-1

Williams, K. M., Davis, R. D., & Rostow, C. D. (2011). Comparing the M-PULSE inventory and MMPI-2: Empirical overlap and the prediction of liability outcomes in 7,161 law enforcement officers. https://doi-org.ezp.waldenulibrary.org/10.1037/e698412011-001

Wirth, M. D., Andrew, M. E., Burchfiel, C. M., Burch, J. B., Fekedulegn, D., Hartley, T. A., … Violanti, J. M. (2017). Association of shiftwork and immune cells among police officers from the Buffalo Cardio-Metabolic Occupational Police Stress study. *Chronobiology International: The Journal of Biological & Medical Rhythm Research*, *34*(6), 721–731. https://doi-org.ezp.waldenulibrary.org/10.1080/07420528.2017.1316732

Wygant (2017). *Introducing the MMPI-2-RF* [PDF document]. Retrieved from http://downloads.pearsonclinical.com/videos/051717-MMPI-2-RF-Overview/MMPI-2-RF-Overview-Webinar-Handout-051717.pdf

Yockey (2011). *SPSS demystified*. Boston, MA: Pearson Education.