Spring 2024

Understanding the Role of Adverse Childhood Experiences on Resilience in Police Officers

Wayne F. Handley
Old Dominion University, wfhandley@live.com

UNDERSTANDING THE ROLE OF ADVERSE CHILDHOOD EXPERIENCES ON RESILIENCE IN POLICE OFFICERS

By

Wayne F. Handley
B.S. August 2010, Old Dominion University
M.S. May 2018, Old Dominion University

A Dissertation Submitted to the Faculty
of Old Dominion University in Partial Fulfillment of the
Requirements of the Degree of

DOCTOR OF PHILOSOPHY

EDUCATION - COUNSELING

May 2024

Approved by:

Gülşah Kemer (Chair and Methodologist)

Randy Gainey (Member)

Alan Schwitzer (Member)

ABSTRACT

UNDERSTANDING THE ROLE OF ADVERSE CHILDHOOD EXPERIENCES ON RESILIENCE IN POLICE OFFICERS

Wayne Handley
Old Dominion University, 2024
Chair: Dr. Gülşah Kemer

Police officers are subject to a variety of stressors not only from job-related events resulting from direct or vicarious trauma exposure (Andersen & Papazoglou, 2014; Brown et al., 1999; Iversen et al., 2008) but also from family and personal concerns (Burke, 1998; Page & Jacobs, 2011), and administrative pressures originating from within their own agencies (Violanti et al., 2018; White et al., 2016). Prior to their careers as police officers, individuals may also be exposed to traumatic events early in life. Adverse Childhood Experiences (ACEs) are described as negative events related to emotional, physical, or sexual abuse or neglect, exposure to domestic violence or substance abuse, or environments where mental health problems, or incarceration are part of every-day life (McRae et al., 2021; Molina & Whittaker, 2022; Montgomery et al., 2013). ACEs exposure, combined with the exposure to stressors from police work, may lead to negative consequences for police officers in their professional careers and personal lives. Recently, researchers have started to shift the focus from detrimental factors that influence police officer behaviors or wellbeing to a more positive focus on how to improve overall wellbeing of police officers (Phythian et al., 2022) including the concept of resilience and how it impacts officer's wellness (Romosiou et al., 2019). Current literature focuses on resilience as a process or function (Bonanno, 2012) but there is a gap in the literature about the individual components that comprise resilience. The purpose of this study was to investigate the components of resilience and explore the role of ACEs on resilience in police officers. A non-

experimental, correlational approach, hierarchical regression analysis (Creswell & Creswell, 2018) yielded statistically significant results. More specifically, consisting of demographic data of age, race identity, gender identity, and education level, Block 1 did not show any statistical significance (R^2 change = .038, p = .321). Similarly, Block 2, including veteran status and years of police service, did not show any significant change in the dependent variable (R^2 change = .017, p = .345), either. Of the three blocks, only Block 3 with the ACEs scores showed statistical significance (R^2 change = .067, p = .004). The findings of this study inform and influence police agency policy and improve police officer training to increase wellness in officers while providing directions to counselor education programs and practicing counselors working with police officers

This dissertation is dedicated to my mother who was a champion for life-long learning and who lived a life filled with intentional generosity and selfless care for all those around her.

ACKNOWLEDGEMENTS

This dissertation process has been a great learning opportunity for me that would not have been possible without the contributions of many people. I would first like to thank my dissertation committee members Dr. Gülşah Kemer, Dr. Alan Schwitzer, and Dr. Randy Gainey for the investment of time, support, and guidance. I wish to thank all the faculty and staff at Old Dominion University that encouraged and motivated me throughout my time at Old Dominion University. I would particularly like to thank my dissertation chair Dr. Gülşah Kemer who essentially adopted me and became my advisor and guided me through this process with patience, caring, and understanding. I would like to thank the many public safety professionals who work selflessly each day and who are the motivation for this study and the future research that will come from it. Finally, I would like to thank my family that endured this process alongside me and showed grace and support, and especially to my mother who was not able to see me finish.

TABLE OF CONTENTS

Page

LIST OF TABLES

Table Page

LIST OF FIGURES

Figure Page

CHAPTER ONE

Introduction

In this chapter, I will explain the background of the problem, the purpose of the current study, and its significance. Next, there will be a brief overview of the research design to include research questions. Finally, I will conclude this chapter with the operational definitions for the terms used in this research.

Background of the Problem

Public safety personnel (PSPs) are at the forefront of community safety and regularly tasked with responsibility of managing critical incidents (Anderson et al., 2020; Di Nota et al., 2021). PSPs include firefighters, paramedics, police officers, and emergency dispatchers (Anderson et al., 2020; Di Nota et al., 2021; D. P. Gross et al., 2021). PSPs can also include Frontline Healthcare Professionals (FHP) such as doctors, nurses, social workers, and counselors. The responsibility taken on by PSPs can expose them to situations of physical violence against themselves, witnessing of violence against others, fatal accidents, or other traumatic events (Anderson et al., 2020). These potentially psychologically traumatic events (PPTEs) can increase risk for development of post-traumatic stress injuries (PTSIs) that potentially lead to higher levels of anxiety and depression in PSPs than are seen in the general population (Stelnicki et al., 2021). Anderson et al (2022) suggest that PSP show greater levels of suicidal ideation and attempts, higher levels of anxiety and depression, and greater reliance on maladaptive coping skills than the general population. Research suggests that PSPs and FHPs that suffer from PTSIs during the course of their employment have a higher risk of not being able to return to pre-injury levels (Jones et al., 2020, 2022) and that symptoms associated with PTSIs can negatively impact daily function and work ability in PSPs (D. P. Gross et al., 2021).

As a subset of PSPs, police officers are subject to a variety of stressors not only from job-related events resulting in direct or vicarious trauma exposure (Andersen & Papazoglou, 2014; Brown et al., 1999; Iversen et al., 2008) but also from family and personal concerns (Burke, 1998; Page & Jacobs, 2011), and administrative pressures originating from within their own agencies (Violantiet al., 2018; White et al., 2016). These types of stressors are divided into two groups, operational stressors, and organizational stressors (Queirós et al., 2020). Operational stressors, salient to almost all police departments, include poor community relations, equipment and manpower issues, shift changes or ambiguity of roles (McCreary & Thompson, 2006). Organizational stressors can include poor perceived support from supervisors, burdensome policies and administrative functions, top-down leadership, and lack of consistency in operations between police commands (Birze et al., 2021; Queirós et al., 2020). These organizational stressors are linked to physical health concerns (fatigue, illness, and injury) similar to operational stressors (McCreary & Thompson, 2006) and performance issues including use of excessive force, poor decision making (Queirós et al., 2020).

According to Gagnon and Fox (2021), the changing social landscape has also created different beliefs about the expectations of law enforcement for which many officers are not adequately prepared. This concept, however, is not new to academic research. Butler (1998) stated that in the 1980s and 1990s that the autocratic style of police management and changes in social expectations of police officer's duties were not practical thereby potentially decreasing officer effectiveness. Correia and Jenks (2011) and Hoover (2010) suggested that the incongruence between social expectations and police department's capabilities caused such a strain on law enforcement resources, that no change was possible until the appropriate intersection of expectations and resources could be found. Additionally, this incongruence and

constant call for restructuring police departments and how police officers carry out their duties is an important element effecting officer's beliefs and attitudes toward their work (Correia & Jenks, 2011). Added to this consistent drive for reform combined and lack of congruency is the current trend of critical attitudes toward police officers leading to dramatic increases in voluntary separation of officers from departments (Mourtgos et al., 2022). These critical attitudes are also associated with dramatic increases in social protest against police officers since the death of Michael Brown in Ferguson, Missouri in 2014 and especially since the death of George Floyd in 2020 (Reny & Newman, 2021).

Police Use of Force and the Perceptions of Excessive Police Force

According to Pate and Fridell (1995), the legal and legitimate use of coercive force is the crucial factor that sets police work apart from all other occupations. Police officers are required to make critical decisions about using force, usually in the midst of stressful, uncertain, and chaotic situations although research testing those relationships has been limited (Manzoni & Eisner, 2006). Police use of force crosses over from a legitimate function of public safety into what can be considered police brutality when officers use force excessive for the situation or when they use force that was unnecessary at all (Ariel et al., 2015). This is a current and critical issue in law enforcement because police officers derive their authority to use force from the very community on which the force is used in the performance of police duties. This can lead to mistrust between police departments and communities (Ouellet et al., 2019) causing decay of police community relationships. According to Peeples (2020), one of the primary reasons that police use of force has been difficult to study is due to poor data collection from police departments; however, studies of medical records show that use of force by police officers rarely involves firearms and more often involves unarmed physical force (Bozeman et al., 2018). What

is suggested by literature, and commonly understood anecdotally, is that race plays a major part in the use of force in encounters between police officers and the communities they serve (Alang et al., 2017; Hoekstra & Sloan, 2022; Ouellet et al., 2019; Peeples, 2020). Research has focused on some of the origins of excessive or unnecessary uses of force by police such as racial bias, hypermasculinity in police work, or organizational culture (Tawa, 2022) yet there is limited research on what qualities a police officer possesses that motivate them to use force over other tactics during encounters with persons in the community. According to Alang et al (2017), police brutality does not stop at physical violence but can also include verbal abuse and psychological intimidation. On the other hand, Ariel et al (2015) suggest that officers with certain personality traits such as professional efficacy and greater ability to endure stressful situations are more likely to use social skills to solve conflict rather than use of force.

The 2014 death of Michael Brown in Ferguson, Missouri, during a controversial police-involved shooting has been considered a turning point in the discussions of police interactions with communities where officer-involved uses of force were looked at as a pattern of behavior rather than individual incidents (Engel et al., 2020). It was during this time, that changes to police training, to include de-escalation training, became a part of the national discussion regarding police reforms (Andersen & Gustafsberg, 2016; Wood et al., 2020).

Police Training to Reduce Uses of Force

Expectations of how police departments carry out their duties has generated discussions about changes to police recruiting and training (Engel et al., 2022). There is limited research on the efficacy of de-escalation training in reducing use of force events due to lack of rigorous investigation and testing (Engel et al., 2020, 2022; Wolfe et al., 2020; Wood et al., 2020). Previous research by Lee et al (2010) attempted to focus on contextual factors in communities

such as race, socio-economic status, and crime rates as predictors of use of force but were unsuccessful in making any determinations based on contextual factors. Wolfe et al (2020) suggest that the implementation of social interaction training, where officers are trained and re-trained in strategies to develop trust and communication with citizens, has a positive effect in reducing uses of force and increasing legitimacy in police departments. Additional training programs that are focused on reducing use of force in police encounters include procedural justice training (Wood et al., 2020) and implicit bias training (Fridell, 2016), both of which are motivated by creating positive interactions between police and citizens during encounters. There is limited research on the use of department policies as a deterrent for unnecessary use of force; however, there is a current trend on studying the impact of proper policy creation and training as a method of addressing excessive use of force (Rockwell et al., 2021). There is currently a gap in research that looks at changes in recruitment as a method of reducing use of force incidents by hiring persons that are mentally and emotionally equipped to handle the rigors of police work.

Police and Mental Health Interventions

The stressors that are experienced by police officers as a condition of their employment are unique to their population and have become a basis for police culture that has historically avoided mental health treatment (van Gelderen et al., 2011). Constant exposure to trauma has been shown to have a negative impact on the physiological and psychological wellbeing of police officers (Violanti et al., 2018). Additionally, police officers have a higher risk for experiencing substance use disorder, anxiety, depression, and post-traumatic stress disorder (PTSD) than the general population (Bell & Eski, 2016; Lane et al., 2022; White et al., 2016). Still, research that focuses specifically on police officers receiving mental health services is somewhat scarce compared to the volumes of research conducted about how police officers can

better interact with those suffering from mental health crises (White et al., 2016). According to Lane et al (2022), the reasons why police officers fail to seek mental health treatment are embedded in the culture of police work as well as the overall societal stigma still associated with seeking mental health services. Policing culture is one of engrained suspicion of those not "on the job" a term commonly used by police officers to identify how long they have been actively employed as police officers (White et al., 2016, p.142). This suspicion is part of a larger culture where officers are expected to maintain physical and mental strength in the face of constant challenges of police work such as threat of assaults, exposure to violence and death, or the violent deaths of co-workers, which translates to a close-knit and closed off cultural group (Lane et al., 2022). Bell and Eski (2016) suggest that lack of understanding of the function of mental health services and lack of knowledge about confidentiality can also play a part in why police officers do not seek treatment.

Additionally, the need for mental health training and resource availability has not been prioritized by law enforcement leadership which can then perpetuate a problem that can grow within police organizations (Blumberg et al., 2019; Papazoglou et al., 2019) without dedication of adequate resources. Interventions such as professional counseling, peer-counseling, and education have shown increases in overall wellness for police officers (Page & Jacobs, 2011); however, resources dedicated to these interventions have not been historically allocated by the leadership in law enforcement agencies. This lack of resources has been associated with greater levels of suicide and other stress effects of police work (Weltman et al., 2014). The combination of these factors can lead to higher-than-average rates of unhealthy behaviors such as alcohol abuse or domestic assaults (McCormack & Riley, 2016) and higher rates of suicide (Mishara & Fortin, 2022). Previous studies of officer wellness have primarily focused on the negative aspects

of officer behavior and detrimental impacts of chronic exposure to stress and trauma (Kaplan et al., 2017).

Recently, researchers have started to shift the focus from detrimental factors that influence police officer behaviors or wellbeing to a more positive focus on how to improve overall wellbeing of police officers (Phythian et al., 2022). These studies include investigations into the concept of resilience and how it impacts officer's wellness (Romosiou et al., 2019) and how resilience development can increase officer performance (Arnetz et al., 2008). According to Southwick et al. (2014), resilience can be defined in several ways but is commonly understood to mean adaptive, positive functioning over time after experiencing a trauma. Kim-Cohen (2007) describes resilience as the positive adaptation of a person after exposure to adversity and even suggests that it is not static but rather a dynamic construct. Previous research focused on resilience has included sources of resilience including biological, social, or psychological elements (Kim-Cohen, 2007) or behaviors associated with resilient individuals particularly focusing on groups other than police officers such as children from troubled families (Pooley & Cohen, 2012) or persons working in the medical field (Grafton et al., 2010). Police officers who display behaviors that are associated with resilience (e.g., recognizing that bad things sometimes happen, or maintaining an optimistic attitude) have greater levels of wellbeing and resistance to the constant trauma and stress associated with policework (Violanti, 2006) while the etiology of resilience in police officers still has not been thoroughly examined (Galatzer-Levy et al., 2013). Currently, there is a shortage of knowledge and understanding of the variables that comprise resilience specifically focusing on police officers.

Adverse Childhood Experiences as a Component of Resilience

Resilience has been described as a process, an interactive system, and a set of biological responses (Southwick et al., 2014). Rutter (1987) stated in his *challenge model* of resilience that previous exposure to adversity produced better outcomes for physical and mental wellbeing than no exposure at all. Several types of adversity or trauma fall into the categories measured as part of the seminal study of Adverse Childhood Experiences (ACEs) by Felitti et al (1998). Research on ACEs has shown to have profound negative impacts on mental and physical wellbeing (Anda et al., 2006; Felitti et al., 1998; Petruccelli et al., 2019; Violanti et al., 2021). ACEs are potentially traumatic events that an individual may be exposed to during childhood (Parnes & Schwartz, 2022) and can include emotional, sexual, and physical abuse, emotional and physical neglect, and other household dysfunction such as substance use disorders, incarceration, and family separation (Augsburger et al., 2015; Bellis et al., 2014; Petruccelli et al., 2019). Exposure to ACEs has shown to have deleterious health-related effects including higher rates of cardiovascular disease, diabetes, liver disease, and other serious medical conditions (Anda et al., 2006; Dong et al., 2003; Felitti et al., 1998; Korotana et al., 2016). Additionally, ACEs exposure has been connected to higher rates of mental health disorders in adults such as anxiety, depression, substance use disorder, schizophrenia, and higher rates of suicide attempts (Belfry et al., 2022; Liu et al., 2021; Nagata et al., 2023; Parnes & Schwartz, 2022). Returning to Rutter's *challenge model* of resilience, if certain levels of exposure to trauma and adversity are associated with higher levels of resilience and ACEs are considered early forms of trauma and adversity, then there is a potential that exposure to ACEs may result in increased levels of resilience in adults who become police officers.

In the current study, I will seek to address the gap in the literature that focuses on the components of wellness in officers rather than the individual deleterious effects of police work; not the mere presence of wellness and associated behaviors, but rather, the variables that constitute an officer who is considered "resilient."

Purpose of the Study

The purpose of this study is to investigate the relationship among factors that contribute to resilience. In this study, I will explore how exposure to Adverse Childhood Experiences (ACEs) may predict levels of resilience in police officers. The influence of some of the other demographic factors could not be ignored as the relationship between ACEs and resilience among police officers is examined. Therefore, the effects of demographic variables will be examined and controlled in the current study. In brief, the specific purpose of the current study is to examine the relationship between levels of resilience, the dependent variable, and ACEs, the independent variable, in controlling the effects of age, race, gender, education level, veteran status, and years of service as a police officer as demographic variables.

Significance of the Study

The findings of the current study will offer an opportunity to construct a baseline model of the individual components that contribute to overall resilience in police officers. Current literature on police officers focuses on behaviors associated with resilience but does not delve into the essential elements that construct resilience. This study could further the efforts of police training and policy by gaining a better understanding of those elements. Such an understanding can lead to early identification of police officers in need of additional services and training that can help prevent detrimental effects of trauma and chronic stress exposure, can aide in suitability

of assignments for police officers, and can lead to improved decision making and responses by officers in stressful situations.

By gaining a better understanding of the individual factors that comprise overall resilience in police officers, with this study, I intend to inform and influence police agency policy, improve police officer training, and increase awareness of the benefits of counseling and psychoeducation in the training of police officers. The identification of factors that may predict resilience in police officers is important for understanding how to inform training programs and policies that can protect police officers from the negative impact of trauma and stress that are encountered every day as a condition of their occupations. This study will be an exploration for the development of evidenced-based practices that can be incorporated in police agencies with the expectation that improved officer wellness can translate into safer, more effective police officers. Such an understanding may also offer changes to counselor training programs.

Counselor educators could use the results of the current study to improve cultural competence of counselors and counselor trainees in working with police officers as a population and provide additional understanding of the concept of resilience as it applies to police officers and, possibly, to other individuals in the general population. Additionally, understanding the impact of ACEs on levels of resilience in police officers can inform counselors, counselor educators, and counselors in training how to approach this unique population when conducting educational programs or counseling services.

By informing counselor educators in alternate methods of working with police officers, counselor trainees may be better prepared to serve this population when working in the field at the completion of their programs through improved understanding of police officers as a sub-culture of the general population. Furthermore, findings can inform counselors and counselor

educators on factors related to resilience that can be expanded into practice when working with other public safety personnel such as paramedics, firefighters, and emergency dispatchers. Understanding the essential elements of resilience may improve our understanding of how resilient individuals are able to be resistant to the harmful effects of trauma exposure thereby offering opportunities to replicate those conditions in mental health training and counselor practice.

Research Question and Hypothesis

Based on the primary aim of the current study, I propose to address the following research question:

Q1. What is the role of personal exposure to adverse childhood experiences in predicting resilience levels in police officers when controlling for age, gender, race, veteran status, education level, and years of active police service?

$H1_a$. There will be a negative relationship between levels of resilience and personal exposure to adverse childhood experiences in police officers when controlling for age, gender, race, veteran status, education level, and years of active police service.

Definitions of Terms Used

Adverse Childhood Experiences (ACEs)

Adverse Childhood Experiences (ACEs) are psychosocial factors with significant negative impact on health outcomes (Petruccelli et al., 2019). Categories of ACEs include physical, sexual, and emotional abuse, physical and emotional neglect, and household dysfunction including a family history of mental illness, substance abuse, parental incarceration, domestic violence, and divorce (Felitti et al., 1998).

Education Level

The highest level of formal education achieved by the participant at the time of the study based on category. In this study, education level will be measured in total credit years completed to keep the variable continuous rather than categorical. For example, a high school graduate has 12 credit years of education. Participants will add 1 for each *credit year completed.* This will account for students who achieve higher levels of education but may not have traditional timelines to complete them such as part-time students.

Gender Identity

One's self-identification as male or female. Although the dominant approach in psychology for many years had been to regard gender identity as residing in individuals, the important influence of societal structures, cultural expectations, and personal interactions in its development is now recognized as well. Significant evidence now exists to support the conceptualization of gender identity as influenced by both environmental and biological factors (APA, n.d.).

Police Officer

The term Police Officer means any officer, agent, or employee of a State, unit of local government, or an Indian tribe authorized by law or by a government agency to engage in or supervise the prevention, detection, or investigation of any violation of criminal law, or authorized by law to supervise sentenced criminal offenders. This includes full, part-time, and auxiliary personnel, whether paid or volunteer (U.S. Dept. of Justice, n.d.). A police officer is one who holds a warrant or appointment authorizing them to enforce laws, investigate crimes, and make arrests. The position generally requires a certification from a government agency following a period of training with an accredited organization where established competency levels are achieved prior to going into active service (Virginia Dept. of Criminal Justice, n.d.).

Race

A socially defined concept sometimes used to designate a portion, or “subdivision,” of the human population with common physical characteristics, ancestry, or language (APA, n.d.).

Resilience

Resilience is the process of, capacity for, or outcome of successful adaptation despite challenges or threatening circumstances (Masten et al., 1990). It is also described as the ability to bounce back to pre-exposure levels of functioning after exposure to trauma (Pooley & Cohen, 2012).

Veteran Status

The term "veteran" means a person who served in the active military, naval, or air service, and who was discharged or released therefrom under conditions other than dishonorable. In the present study, participants will either be a veteran or non-veteran (Veteran’s Benefits, Title 38 C.F.R. Sect. 101, 2022)

Years of Service

The total number of years a person has served as a police officer regardless of professional, auxiliary, or volunteer status.

CHAPTER TWO

Literature Review

In the previous chapter, I introduced police officer behaviors, resilience, adverse childhood experiences and the connection between them. In this chapter, I will expand on these concepts to show their interrelated nature and the importance of understanding the components of resilience specifically adverse childhood experiences. I will first present a review of the literature on adverse childhood experiences (ACEs) including the origins of understanding about ACEs, impacts of ACEs on brain development and function, behaviors associated with persons exposed to ACEs, and lasting impact of ACEs on individuals. I will then transition to a review of police officer culture and conduct focusing on present on historic police officer culture, past and current expectations of conduct, and the impact of social changes on police officer responsibilities and expectations. Next, I will discuss resilience including current definitions of resilience, behaviors associated with resilience, and currently understood sources or origins of resilience in adults. This will include a review of literature on the importance of resilience in police officer behavior and decision making. Lastly, I will conclude with informing on the current study and research questions.

Adverse Childhood Experiences

Adverse Childhood Experiences (ACEs) are described as negative events related to emotional, physical, or sexual abuse or neglect, exposure to domestic violence or substance abuse, or environments where mental health, or incarceration are part of every-day life (McRae et al., 2021; Molina & Whittaker, 2022; Montgomery et al., 2013) ACEs have been the subject of many studies since the publication of the initial report by Felitti et al in 1998 regarding the correlation between ACEs exposure and long-term health problems in victimized adults. In the

context of the current study, ACEs literature is reviewed to illustrate the deleterious effects typically observed by persons exposed to such negative events.

Felitti et al. (1998) conducted initial studies on ACEs as they related to health outcomes in adults who were exposed to various childhood traumas. Initially, Felitti et al. (1998) attempted to explain the impact various childhood traumas had on adult health outcomes. The first study included seven categories of childhood trauma exposure that were directly correlated to long-term adverse health outcomes and were associated with greater rates of mortality than those not exposed to childhood trauma (Felitti et al., 1998). This initial study concluded that certain health outcomes including heart disease, obesity, alcohol-related medical problems, and propensity for suicidality may be attributed to combinations of exposures to ACEs versus exposure to a single category of events. The complex nature of the relationship between the various categories of ACEs and their impacts on physical health in adults was still uncertain at the time of the original study. Additionally, it was concluded that the long-term nature of the impact of such exposures was underestimated at the time of the original study owing to the limited nature of research conducted on the topic (Felitti et al., 1998).

Researchers expanded on Felitti et al.'s seminal research and explored ACEs' impact on more than just physical health outcomes such as mental health (McRae et al., 2021; Molina & Whittaker, 2022), consumption of health resources (Bellis et al., 2014) and other psychosocial-related concerns (e.g. substance use disorders, hypersexuality, and unplanned pregnancies; Baldwin et al., 1993; Morris et al., 2020). Additional studies have been conducted to determine the nature and impact of ACEs on brain development and function (Oshri et al., 2019; Somaini et al., 2011; Turecki & Meaney, 2016). Researchers have begun to question not only the various impacts of exposure to childhood trauma but also the influence of the specific types of traumas

that were more detrimental or the combination of traumas that had deleterious impact. Subsequent studies suggested that the actual number of types of exposure (1 exposure versus ≥4 exposures) were more impactful than the specific type of exposure (physical versus emotional; Molina & Whittaker, 2022; Salmon et al., 2023; Xue et al., 2017). Oshri et al. (2019) suggested that exposure to ACEs should be viewed through the lens of a complex series of experiences and not measured as numbers of exposures to discreet categories.

As a limitation of their initial study, Felitti et al (1998) stated that exposure to multiple traumas had not been studied and there may even have been erroneous attribution of negative health-related outcomes to a single type of exposure. Subsequent studies suggest that children with exposure to 4 or more of the measured ACEs are significantly more likely to engage in behaviors including smoking, consumption of alcohol, use of illegal drugs (Mersky et al., 2013), or other risky behaviors such as excessive gambling or hypersexual behaviors (≥50 sexual partners over a lifetime; McRae et al., 2021). Additionally, research suggests that adults with exposure to ≥4 ACE categories have higher rates of major depressive disorder, attachment-related disorders, and suicide attempts (Bellis et al., 2014).

Brain Structure and Function and ACEs

Current research suggests that childhood exposure to trauma is associated with changes in brain and neurobiological development (Marsman et al., 2019; Shahab & Taklavi, 2019; Xue et al., 2017; M. Yuan et al., 2022). Additionally, according to Bellis et al (2017), early life trauma is linked to functional changes in the brain and accompanying self-regulation systems found in the central nervous system. Researchers suggest that exposure to ACEs is associated with dysfunction in the hippocampus, amygdala, and prefrontal cortex (Navalta et al., 2018) which are all vital areas for emotional regulation and responses to stress in humans. Additionally, Turecki

and Meany (2016) reported the hypothalamus-pituitary-adrenal (HPA) axis, which is vital in emotional responses in humans, is impacted by early exposure to ACEs. Substantial research has shown that the interruption of the development of the HPA axis as a result of early exposure to stress associated with ACEs disrupts the neural pathways between the HPA axis and other vital structures of the brain such as the hippocampus, amygdala, and pre-frontal cortex (Anda et al., 2006). This developmental disruption in humans is linked to psychotic and mood disorders and blunted reactivity to cortisol levels during stress responses consistent with PTSD (Quidé et al., 2021).

Such change in brain function and nervous system regulation has also been linked to other behaviors (Buimer et al., 2022; McRae et al., 2021; Navalta et al., 2018). Higher levels of aggression, both proactive and reactive have been observed in children and adults with exposure to ACEs that is also associated with changes in the prefrontal cortex of the brain and the hypothalamic-pituitary-adrenal axis (Xue et al., 2017). According to Buimer et al (2022), the impact of change on neurobiological function can be reliant on not only the exposure to ACEs, but *when* the exposure happens and even the *specific type* of exposure. Attachment disorders seen in non-human primate research suggests that the separation of children from a caring parent (specifically the mother) has a lasting impact on self-regulation and cortical development within the brain (Somaini et al., 2011). Lack of proper development and dysregulation of areas of the brain are also consistent with brain function seen in adults with post-traumatic stress disorder (Buimer et al., 2022; Navalta et al., 2018; Salmon et al., 2023). According to Somaini et al (2011), the acute stress related to ACEs can induce a variety of neurobiological events that are associated with the onset of bipolar disorder, anxiety, depression, and other serious mental illnesses. Research further suggests that developmental impairment of these vital structures of

the brain can lead to cognitive dysfunction, disruption of executive function, and memory issues in older adults with exposure to ACEs (Yuan et al., 2022).

Behaviors and Coping Skills Associated with ACEs

As suggested by researchers, several detrimental behaviors have been associated with ACEs exposure. Alcohol and illegal drug use (Loudermilk et al., 2018), risky sexual behaviors (Lee & Chen, 2017), violence and aggression (Grest et al., 2022) , suicidality (Isohookana et al., 2013), and other deleterious health-related behaviors (Garrido et al., 2018) have all been associated with exposure to ACEs.

Alcohol use

According to Loudermilk et al (2018), the adverse effects of exposure to childhood abuse or neglect is strongly associated with many dysfunctional coping mechanisms to include alcoholism. In particular, children who experienced two or more ACEs were more likely to experience alcoholism as adults than those that only experienced zero or one ACE (Loudermilk et al., 2018) and those that experienced ≥4 ACEs were even more likely to experience alcoholism starting at adolescence and continuing into adulthood (Wallace et al., 2020). Lee and Chen (2017) reported that not only the number of ACEs exposure is important, but also the type of exposure as well as the gender and race/ethnicity of the victim. Males were more likely than females to engage in heavy drinking or binge drinking resulting from exposure across all categories of ACEs; however, there was an even greater increase in Hispanic, and non-Hispanic Black males than among non-Hispanic white males suggesting that race and gender may play a role in alcohol use among ACEs survivors (Lee & Chen, 2017).

Bellis et al (2014) suggested that problematic alcohol use was associated across all categories of ACEs; however, 24.6% of those who experienced alcoholic adults living in the

home experienced alcohol use disorder themselves as adults as compared to 6.6% of their respondents who did not witness alcoholism growing up. Additionally, in a study across eight different Eastern European countries, there was no significant difference noted between countries where children were exposed to ACEs. Support for higher ACEs scores being associated with more health-harming behaviors including heavy and binge drinking was supported by the same study (Bellis et al., 2014). Lee et al (2022) suggest that exposure to multiple ACEs may be associated with alcohol abuse as a coping mechanism to offset the damaging effects of the exposure to childhood adversity and the negative impact on brain development caused by early childhood exposure.

Risky sexual behaviors

Adolescents who reported exposure to ACEs were more likely to initiate sexual contact, have multiple sex partners, and engage in unprotected sex, and early/unplanned pregnancy (Ramiro et al., 2010; Schafer, 2021; Song & Qian, 2020). Additionally, according to Schafer (2021) there is an association between engaging in risky sexual behaviors and previously mentioned brain functions that may potentially impair regulation of impulse control. Associations between early initiation of sexual activity and multiple sexual partners has been observed across all categories of ACEs exposure (Hillis et al., 2001; Kaggwa et al., 2022; Song & Qian, 2020). A relationship has also been observed between exposure to higher numbers of ACEs categories (≥4) and greater rates of risky sexual behaviors (Kaggwa et al., 2022) including having 30 or more sexual partners compared to those persons only exposed to only one category of ACEs (Schafer, 2021).

According to Hillis et al (2001), women exposed to multiple categories of ACEs had a 50% greater chance of early, unintended pregnancies than those only exposed to a single

category. Additionally, according to Song and Qian (2020), females aged 15 – 19 years old who give birth are at greater risk of having lower education and socio-economic achievement, poorer overall health outcomes, and early morbidity. This population also accounts for greater than 21% of cases of sexually transmitted diseases in the United States (Song & Qian, 2020) which have been associated with increased likelihood of development of health-related problems such as cancers and HIV (Dyer et al., 2022).

Violent and aggressive behaviors

Violent and/or aggressive behaviors have also been associated with lack of ability to regulate responses to stressful situations (Burke et al., 2023; Connolly, 2020). Emotional regulation has been linked with behaviors seen in those persons diagnosed Antisocial Personality Disorder and associated psychopathy which have positive correlations to persons exposes to ACEs (Moreira et al., 2020). Furthermore, according to Prasad et al (2022), exposure to multiple categories of ACEs is associated with higher incidence of health-risking behaviors such as alcohol/substance abuse, risky sexual behaviors, and other impulsive behaviors as a result of impairment of neurobiological development. Health-risking behaviors and impairment of neurobiological development are commonly associated with aggressive and violent behaviors in adolescents and young adults (Connolly, 2020). Research also suggests that the dose-response relationship seen in exposure to multiple categories of ACEs over time is related to higher rates of criminal behavior and recidivism later in the lives of those persons who were exposed (Burke et al., 2023).

Barra et al (2018) stated that exposure to multiple ACEs was linked with progressively violent sexually offending behaviors at an early age and continuing through adulthood. Exposure to four or more ACEs regardless of combination of categories was found in 45% of juvenile sex

offenders (Meddeb et al., 2022) supporting Skarupski et al.'s (2016) findings on 50% of adult sex offenders had exposure to four or more ACEs. Those persons exposed to multiple categories of ACEs were more likely to engage in sexually aggressive offenses then other types of serious offenses against their victims (Moreira et al., 2020). Prasada et al. (2022) present that the *intensity* of exposures may also play a part in violent and aggressive behaviors in later life as an additional factor of multiple exposure.

Suicidal and non-suicidal self-injurious behaviors

Suicidal behaviors in individuals have been directly associated with exposure to ACEs (Anda et al., 2006; Clements-Nolle et al., 2018; Felitti et al., 1998; Lensch et al., 2021). Isohookana et al. (2013) reported that suicidal ideation as well as non-suicidal self-injurious (NSSI) behaviors were associated with exposure to ACEs, particularly in females who were exposed to sexual abuse and/or physical abuse prior to age 16. This was also associated with the onset of PTSD following the exposure to the abuse (Isohookana et al., 2013). A strong association was observed in a study conducted by Lensch et al (2021) where respondents between 10 and 18 years old were 5 – 8 times more likely to attempt suicide after exposure to 3 or more categories of ACEs than similarly aged students who reported 0 exposures. Wan et al. (2019) suggested that NSSI and suicidal behaviors were more closely associated with ACEs categories of physical abuse, emotional abuse, and emotional neglect; however, Clements-Nolle et al. (2018) suggested that sexual identity as a condition of sexual abuse was more likely the cause of suicidal behaviors. Regardless, researchers suggests that there is a connection between ACEs and an increase in suicidal ideations (Anda et al., 2006), suicide attempts (Felitti et al., 1998), and NSSI in adults and teen-aged survivors of adverse experiences (Wan et al., 2019).

Other Long-term Outcomes Associated with ACEs

The seminal study on the impact of ACEs conducted by Felitti et al. (1998) was the initial research linking adverse childhood experiences to negative health outcomes in adults. Since that time, the relationship between ACEs exposure and negative health outcomes has increased in depth and breadth to include other traits associated with mental health, physical health, and other deleterious outcomes (Olsen, 2018). Across genders, races, and socio-economic traits, exposure to ACEs have been linked to increases in coronary artery disease and stroke (Chang et al., 2019), immune function that can lead to other health-related problems (Parnes & Schwartz, 2022), and emotional regulation and behavioral problems (Bellis et al., 2014). Additionally, adult females who have a history of ACEs exposure are more likely to have problems associated with difficult pregnancies such as gestational diabetes and pre-eclampsia and pre-term births (Stanhope et al., 2020) although some of those conditions cannot be separated from poor health choices that are also associated with ACEs exposure in non-pregnant females such as smoking, alcohol consumption, elevated cortisol levels related to stress response (Olsen, 2018). According to Simon et al (2021), exposure to ACEs, particularly household dysfunction, have a greater likelihood of experiencing dental issues including higher rates of cavities and dental pain which translated into educational deficiencies as a result of missed school days. Furthermore, Stewart-Tufescu et al (2022) state that exposure to even one ACE can increase likelihood for poor educational outcomes which have long been associated with decreases in life expectancy, morbidity, and poor health-related outcomes.

Intergenerational transmission

Recent studies related to ACEs outcomes have focused on intergenerational transmission of physical, psychological, and psychosocial traits associated with ACEs exposure (Doi et al., 2021; Lê-Scherban et al., 2018; Zhang et al., 2022). According to Narayan et al (2021), exposure

to ACEs by parents, and potentially grandparents, can impact the outcomes of offspring making them susceptible to ACEs exposure themselves. Outcomes linked to parental ACEs include poor health outcomes into adulthood, childhood developmental delays, and internal and externalizing behaviors in children (Ishikawa et al., 2022; Schickedanz et al., 2021; L. Zhang et al., 2022) The initial pathways for intergenerational transmission of dysregulating symptoms are believed to be biological from mother to child while still in utero (Doi et al., 2021; Ishikawa et al., 2022). The initial pathway between mother and child is linked with elevated cortisol levels in the mother which can lead to degeneration of the HPA axis in the child prior to birth (Doi et al., 2021; Letourneau et al., 2019; Thomas-Argyriou et al., 2021). This degeneration of the HPA axis in the child exacerbates the stressful uterine-placental environment initiated by the increased cortisol levels in the mother as a result of her prior exposure to ACEs (Ishikawa et al., 2022). While there is increasing interest in the biological source of intergenerational transmission, most studies on intergenerational transmission still focus on psychosocial pathways (N. Zhang et al., 2022). Psychosocial pathways include poor self-regulation by mothers (Lê-Scherban et al., 2018), higher levels of anxiety and depression both pre and post-natal (Doi et al., 2021), and other symptoms of PTSD associated with ACEs exposure (Narayan et al., 2021; Schickedanz et al., 2021).

Police Officer Culture and Conduct

Police officers are exposed to operational and organizational stressors as part of their involvement in their daily work. Exposure to these types of adversity are part of the understanding of resilience. In the current study, I will focus on the role of personal ACEs exposure by police officers and how that exposure impacts their resilience levels. To better

understand those concepts, it may help to begin with knowledge of police officer operations and culture.

Historical State of Policing

England is widely credited with the creation of modern policing and formalized with the London Metropolitan Police Act of 1829 (Bittner, 1967; Williams, 2003). According to Williams (2003), the original framework for policing was developed by Sir Robert Peel and included several criteria that are still in existence in policing today including the use of uniformed officers patrolling in designated areas for the purpose of controlling criminal activity and providing security services. The American adaptation of the policing framework was not done in the image of Peel's model yet a body that implemented social control in areas of crime was one of the compelling reasons to develop police forces during the 1800s (Cockcroft, 2017). From its earliest days, policing in the United States relied on the acceptance of the communities being policed in collaboration with the officers that patrolled communities (Williams, 2003), yet, the civil rights protests of the 1960s saw police forces as more occupational and oppressive in carrying out their duties (Cockcroft, 2017; Rafail et al., 2012). This period of transition created greater interest in policing culture and a heightened awareness of police officer's perspectives (Cockcroft, 2017). According to Reiner (2017), police culture was largely thought to be top-down organizations with a hierarchical structure and adherence to strict rules where strict discipline was observed. However, Marks et al (2017) stated that police organizations were largely left to their own ideas of what organizational structure and discipline looked like and was often a function of what was called canteen culture. The concept of canteen culture emerged in the late 1990s when Waddington (1999) stated that the variance in how police departments operated could be explained by what lower-level police officers learned in the canteen areas of police departments.

It was believed that the canteen was a learning lab where narratives were shared and department culture was developed then reinforced on how police officers should act (Waddington, 1999). Research into police cultures and scandals involving uses of force, unethical behavior, and disparities in policing methods created opportunities for police reforms, yet, the complexity of police work continued to keep policing largely as it had been for centuries (Marks et al., 2017).

Current State of Policing: Post George Floyd and Breonna Taylor

The killings of George Floyd and Breonna Taylor by police officers in 2020 set off protests about police behaviors and accountability in an attempt to achieve systemic change in how police work is conducted (Frantz et al., 2023). Research on police officers in the wake of these national events focused largely on police culture and its impact on police behaviors. Researchers originally described police culture through a monolithic lens stating that police officers across ranks and departments subscribed to a similar culture that informed how all police officers acted (Frantz et al., 2023; Patterson & King, 2023; Willis, 2022). Fenn and Bullock (2022) posited that the question of police legitimacy and attention paid to police department's relationships with communities have become politicized since the protests of 2020. This increased attention to community relationships has sparked greater interest in community policing models which can also be impacted by policing culture which has historically taken on a crime fighter mentality versus a public servant mentality (Fenn & Bullock, 2022).

Sources of Stress in Police Work

Researchers suggest that police officers are susceptible to higher rates of physiological and psychological stress that can lead to increased rates of both medical and mental health problems (Burke, 1998; James et al., 2006; Violanti et al., 2009; Violanti et al., 2018). Stressors found in police work can come from direct exposure to violence directed at officers as well as

the secondary sources of exposure to traumatic events to which officers are required to respond (Parkes et al., 2019; Powell et al., 2013; Violanti et al., 2008). In addition, some of those may also be organizational stressors such as shift work, dealing with difficult command staff, and constantly changing expectations of police work (Gershon et al., 2008; Kula, 2016; Violanti et al., 2012).

Chronic exposure to these stressors is an expected part of being a police officer and the physical and psychological impact that this exposure could have been of particular interest to existing research. For example, McCraty and Atkinson (2012) reported that police officers experienced higher rates of cardiovascular disease, high blood pressure, and chronic pain than those in the general population. Additionally, Volanti et al. (2018) reported that police officers suffer from higher rates of diagnosed post-traumatic stress disorder (PTSD) when compared to non-police officers. Yet, many police officers refuse to seek assistance for mental health concerns as a result of a culture where seeking assistance can be seen as a weakness or can be associated with negative career outcomes (Papazoglou & Andersen, 2014).

Research on organizational stress in police officers has been largely disregarded (Doyle et al., 2021) despite researchers reports on organizational stress having negative impacts on overall wellbeing of officers (Papazoglou & Andersen, 2014). Organizational stressors are considered among the most significant causes of stress for police officers (Domingues & Machado, 2017). According to Chan and Anderson (2020), growing evidence suggests that as one of the leading causes of occupational stress injuries, organizational stress is characterized by anxiety, depression, post-traumatic stress symptoms, and substance abuse. Sources of organizational stress can include non-traditional working hours and shift work (Papazoglou & Andersen, 2014), job assignments such as investigation of crimes against children or other

violent crimes (Sollie et al., 2017), organizational policies and procedures (Andersen et al., 2015), and lack of support from supervisors (Stern & Galietta, 2019). Varker et al (2022) report that while organizational stressors such as staff shortages, inequity in application of policies, and inconsistency in leadership styles were among the most reported types of organizational stressors. , court appearances, conflicting communications between supervisors, and increasing expectations for officers to handle tasks for which they are not trained for and that are better suited for other community based organizations were other prominent organizational stressors (Varker et al., 2022).

Exposure to organizational stress can have the same deleterious effects over time as exposure to occupational stress or acute traumatic events (McCreary & Thompson, 2006). Anderson et al (2022) suggest the potential impact of this exposure can include decreases in an employee's physical and psychological health, decreases in job motivation, and decreases in job performance which can compound operational stress conditions of other colleagues not handling equitable shares of the workload (McCreary & Thompson, 2006). Chan and Anderson (2020) suggest that organizational stressors which are perceived as oppressive and unavoidable are as psychologically hazardous as exposure to critical incidents in the field, again, leading to decreases in employee health and job performance. Perhaps one of the most frustrating aspects of organizational stress is that officers perceive these stressors as completely unnecessary which leads to cynicism, distrust in the organization, and a belief that the organization lacks integrity (Smith et al., 2022).

Another major source of stress for police officers is work-family conflict (Griffin & Sun, 2018). According to Karaffa et al (2015) police work poses considerable challenges for relationships and family functioning that can interfere with the quality of relationships. Several

studies have identified work-family conflict as a source of psychological burnout (He et al., 2002) characterized by physical and mental exhaustion, cynicism, and feelings of low self-efficacy (Karaffa et al., 2015). According to He et al (2002), work-family conflict is especially impactful for female police officers with children due to the increased demands of domestic/parental responsibilities. Work-life conflict is made worse when one family member, usually the police officer, suffers from PTSD symptoms, regardless of etiology, because of the increased potential for secondary traumatic stress experienced by the other partner (Meffert et al., 2014).

Resilience

The concept or idea of what resilience is, and is not, is a topic of debate among scholars that has yet to yield a universal, widely accepted, definition (Aburn et al., 2016). Kaplan et al (1996) define resilience as a capacity to maintain competent functioning in the face of major life stressors where resilience is composed of social, personal, and institutional protective factors. Carver's (1998) simplified definition of resilience was that it was the return to homeostasis after enduring a period of crisis or adversity. Connor and Davidson (2003) defined resilience as the ability to change and employ adaptive coping strategies in the face of hardship while. Pooley and Cohen's (2012) definition was through a constructivist view claiming that it is a potential to exhibit resourcefulness when dealing with contextual and developmental challenges. The American Psychological Association (2014) defined resilience as a successful process and outcome of adaptation to challenging life experiences through the employment of mental, emotional, and behavioral flexibility. Kaplan et al (2017) refocused their definition of resilience stating it was a dynamic and learnable process leading to positive adaptation to trauma or chronic stress. Research has yielded limited agreement about a finite list of resilient characteristics for all

persons (Grafton et al., 2010); however, there are two factors that are commonly accepted as present in a resilient profile: adversity and successful adaptation to adversity (Masten & Barnes, 2018; Masten, 2001). Regardless of dispute about the definitions of resilience, the origins of interest in the study of resilience are not a new concept.

Early Understanding of Resilience

The study of resilience, more specifically, the original interest in researching psychological resilience, can trace its roots back to the work of Freud who studied psychopathology in adults that was traced back to childhood trauma (Garmezy et al., 1984). Early work by Garmezy and Marsten (1986) supported an emphasis on research related to children living in adverse conditions who did not develop psychopathology later as adolescents or adults. Rather, they focused on protective factors and how they mediated the impact of risk factors and vulnerability to stress (Garmezy & Masten, 1986) a relatively new and unresearched concept at the time. Additionally, early research was conducted prior to the advancement of biomedical technology which was then predicted and expected to be an integral part in the study of understanding and predicting mental disorders such as schizophrenia (Cicchetti & Garmezy, 1993). Early literature defined group risk factors such as age, gender, demographic status, genetic history, and exposure to stressful life events but could not readily identify or define individual vulnerabilities for lack of technology identifying biological markers (Garmezy & Masten, 1986; Kaplan et al., 1996). Previous research by Rutter et al (1974) identified other possible risk factors including family dysfunction, parental marital discord, low socioeconomic status, paternal criminality, maternal psychiatric disorders, and placement of a child outside of the family of origin. These were very similar to categories described by Felitti et al (1998) in their seminal study related to Adverse Childhood Experiences. Other statistical risk factors were

later added by Masten et al (1990) including low educational achievement of the mother and low birth weight. Cicchetti and Garmezy (1993) later focused on *protective factors* that had the ability to mediate the deleterious effects of risk factors as an explanation for why some children later developed mental health disorders or had poor long-term outcomes while others did not.

Other early literature on resilience rejected the pathological model that was deficit based and focused on the resilience based, or strength based, model to explain differences in groups of children who had different outcomes regardless of exposure to similar risks (Kaplan et al., 1996). Carver (1998) and Antonovsky (1996) also focused on strength-based approaches to understanding the qualities that were present in persons resistant to stress and trauma. Antonovsky (1996) proposed a change in the medical research models that focused on what he referred to as *salutogenesis* which concentrated on the origins of health rather than the detriments to it. His model took into account mental resilience as well as physical resilience, which he called a *Sense of Coherence,* and was an early promoter of social advocacy to promote overall wellbeing (Braun-Lewensohn, 2021). Carver's (1998) model suggested that exposure to adversity had four possible outcomes: succumbing, survival with impairment, resilience, and thriving with resilience being defined simply as a return to original levels of homeostasis. The levels of response were dependent on environmental and biological processes that were unique to individuals based on their life experience (Carver, 1998). Currently, the strength-based models continue to gain attention in research literature with discussion of protective or promotive factors that may directly counteract the negative outcomes usually linked to exposure to trauma or adversity (Zimmerman, 2013).

Current Understanding of Resilience

There are many current perspectives about what resilience is and how resilience functions as part of human experience (Afifi et al., 2016). Bonanno (2012) states that resilience is a process that occurs after exposure to adversity. A separate focus is that resilience is a capacity that exists within a person that enables one to withstand the negative effects of severe stressors (Britt et al., 2016). Afifi et al (2016) state that resilience has characteristics of both a process and a capacity but leans toward resilience being a process of continuous recalibration of the individual with their surroundings. Pietrzak and Southwick (2011) presented hat resilience is not a binary function of either a process or capacity but is instead exists across a continuum and can be present in differing degrees across a person's lifespan. According to Kim-Cohen and Turkewitz (2012), resilience may change across the lifespan as one grows and develops and interacts with the environment. Bonanno et al (2011) define resilience as a stable path of healthy functioning that occurs in the wake of highly adverse events. This can be referred to as a resilience trajectory that is characterized by brief periods of disequilibrium followed by a return to previous levels of functioning and health (Bonanno et al., 2011).

Yehuda et al (2013) presented that resilience is a decision process where an impacted person reaffirms their decision to keep moving forward in spite of the deleterious effects of trauma exposure. In contrast to Bonanno's (2011) suggestion that resilience is a straight pathway through adversity, Yehuda et al (2013) suggest that reintegration of the person with their environment, even in the presence of negative symptoms associated with trauma exposure, is what makes a person resilient. Masten (2001) described resilience from a systems perspective stating that resilience was the ability of a dynamic system to adapt successfully to disturbances that threaten function of a system. Panter-Brick and Leckman (2013) suggest that resilience is a process where resources are gathered to sustain wellbeing and ward off negative effects of

trauma. They also incorporate cultural perspectives of what it means to be resilient or how resilience is articulated through the lens of cultural norms and expectations (Panter-Brick & Leckman, 2013).

Determinants of resilience may also include a host of variables including biological, psychological, social, and cultural factors that interact with one another to determine one's response to adversity (Southwick et al., 2014). The importance of biological factors in resilience depends on whether resilience is defined as a capacity or a process of interaction with the environment (Yehuda et al., 2013). Masten (2014) suggests that the social determinants of resilience are constantly changing as organisms interact with their environments and continue to learn how to adapt to stressors that may attempt to disrupt stable functioning where Panter-Brick and Leckman (2013) suggested that the determinants of resilience were heavily dependent on the culture from which the person viewed trauma or adversity. Ungar (2012) put forth a social ecological view of resilience suggesting that the environment and availability of resources within it was the primary determinant of resilience in individuals. Ungar added that any individual gain realized by a person who has experienced trauma can be measured in terms of observable behaviors that are associated with adaptive outcomes. Researchers have also investigated the role emotional regulation plays as a determinant of resilience.

Gross (1998) defined emotional regulation as the conscious and non-conscious strategies individuals can use in order to increase, maintain, or decrease an emotion. According to Polizzi and Lynn (2021), emotional regulation bolsters psychological resilience by facilitating adaptive psychosocial processes. Previous research suggests that emotional regulation is associated with overall well-being and can be focused on two strategies: cognitive reappraisal and suppression (Bailly et al., 2023). Koc and Uzun (2023) stated that emotional regulation is associated with

one's beliefs about emotions where the perception of whether emotions are "good" or "bad" can have a direct influence on what emotional regulation strategies a person chooses when faced with emotionally evocative situations. Police officers who face critical incidents in the line of duty are generally expected to suppress any emotional response and ignore or deny any of the resulting emotional consequences (Thornton & Herndon, 2016). Additionally, police officers regularly work in an environment where emotional labor, or managing the emotions experienced at one's job, is considered a low priority and lacks acknowledgement or training in proper methods of emotional regulation (Ashkanasy et al., 2012). This is in spite of the fact that the President's Task Force on 21st Century Policing created action items directly related to development of training tools designed to improve resilience and emotional composure for police officers (Ramey et al., 2016).

Resilience Theories

Researchers have attempted to apply an analytic framework to the understanding of resilience and developed a conceptual framework that considers a strength-based approach intended to inform intervention design (Zimmerman, 2013). The resiliency theory framework focuses attention on positive contextual, social, and individual variables that disrupt the influence of trauma and stress that may inhibit developmental trajectories (Ledesma, 2014; Zimmerman, 2013). Three primary models have emerged in the literature that describe the ability of persons to adapt to stress and trauma exposure: the compensatory model, the challenge model and the protective factor model (Evans et al., 2010; Gomez & McLaren, 2006; Ledesma, 2014; Zimmerman et al., 2013).

In the *compensatory model,* promotive factors such as self-esteem, self-efficacy, family support, and involvement in social programs, could offset the negative effects of risk exposure

(Zimmerman, 2013). According to Reisner et al (2014), in the compensatory model, promotive factors have a direct effect on overall outcomes independent of the direct effects of risk factors such as socio-economic status or gender identity. Risk factors are also described as any characteristic of an individual or environment that may predict negative outcomes, whereas promotive factors is any characteristic that may predict better outcomes among persons facing adverse circumstances (Sterrett-Hong et al., 2020). Werner and Smith (2001) originally identified four central traits that were the precursor to other promotive factors: ability to gain positive attention, problem-solving skills, a positive world view despite exposure to adversity, and a reliance on faith to maintain a positive world view. Ungar (2012) later expanded on Werner and Smith by adding optimism, empathy, insight, self-esteem, and intellectual competence as promotive factors.

Rutter (1987) introduced the *challenge model* of resiliency and stated that inoculation through exposure to stress produced better outcomes than no exposure to stress at all. Unlike the compensatory model where the promotive factors and risk factors operate independently of each other (Ledesma, 2014), the challenge model describes a curvilinear relationship between risk factors and the outcome variable (Evans et al., 2010). According to Gomez and McLaren (2006), the exposure to a risk factor activates protective factors thereby reducing the potential negative impact of the risk. When describing the challenge model, Rutter (1987) was cautious in using variable or factor, instead choosing to use process or mechanism owing to the fact that a risk factor in one situation but not in another, especially after previous exposures. Zimmerman et al (2013) also added the importance of the risk mechanism to be taxing enough to promote the development of coping skills but not so taxing that it overcomes one's ability to cope.

The *protective factor model* states that internal assets and external resources act to modify the relationship between risk and other promotive factors and outcomes (Gomez & McLaren, 2006; Zimmerman, 2013). The protective factor model is subdivided into two categories. The first is the risk-protective model which is the most widely studied model in the literature (Erdem & Slesnick, 2010) and focuses on the reduction of exposure to risk factors and the increase in exposure to protective factors to ensure the best possible outcomes for individuals (Fletcher & Sarkar, 2013). This model presumes there is direct interaction between risk factors and protective factors (Zimmerman et al., 2013). The next is the protective-protective model which proposes that as the number of protective factors increases, the impact of risk and negative outcomes decreases (Christiansen & Evans, 2005). This model relies on the total number of protective factors rather than the promotive value of the factors themselves to protect against the negative outcomes associated with exposure to risk factors (Fergus & Zimmerman, 2005). Resiliency research that does not utilize some type of theory driven model may generate factors associated with resilience and positive outcomes but may fail to identify the mechanism of change (Zimmerman et al., 2013).

Resilience in Police Work

Police officers endure significant amounts of stress (Phythian et al., 2022; Romosiou et al., 2019; van Der Meulen et al., 2018). Exposure to adversity comes in many forms including primary exposures such as physical threats or assaults (Yuan et al., 2011), vicarious exposures such as case work or dealing with victims (Fyhn et al., 2015), organizational stress (Arnetz et al., 2012), and social stressors from media and citizens (Weltman et al., 2014). Continuous exposure to work-related adversity may lead to depression and anxiety, sleep disturbances, alcohol abuse, and other unhealthy coping mechanisms (Karaffa et al., 2015). According to Fyhn et al (2015),

workplace exposure to stress and trauma also contributes to higher levels of psychosomatic complaints including migraines, gastrointestinal issues, and muscle pain. Jacobs and Keegen (2022) suggest that emergency services workers (e.g. police officers) who exhibit low levels of psychological resilience tend to have lower motivation and performance levels. However, Burke and Shakespeare-Finch (2011) stated that exposure to high-risk situations that generate stress responses can be one of the more satisfying aspects of the job. Because adversity (stress and trauma exposure) is common in police work, understanding the impact of resilience in police officers may lead to better outcomes for officers that translate into better service for communities (Gershon et al., 2008; Romosiou et al., 2019).

Researchers have studied the importance of resilience in police officers and shown that higher levels of resilience are associated with improved levels of performance (Galatzer-Levy et al., 2013b; Kaplan et al., 2017; Romosiou et al., 2019). McCraty and Atkinson (2012) state higher levels of resilience in police officers is associated with improved family relationships, effective communication, and improved work performance among teams. Wright and Cropazano (2000) report that psychological wellbeing, as seen in persons who are resilient, is associated with high levels of job performance. Additionally, Andersen et al (2015) suggest that resilience training indicated improvement in stress responses that were correlated with better job performance in police officers. Furthermore, higher levels of resilience in police officers may lead to decreased levels of absenteeism from work in addition to better engagement with work colleagues (Semeijn et al., 2019).

The focus on improved performance can be important because decreased performance levels are associated with increased uses of force, higher rates of injuries among officers and citizens, and increases in litigation leading to financial outlays for cities and departments (Arnetz

et al., 2012). According to Romosiou et al (2019) the impact of resilience training in police officers has shown promising results with increases in personal resilience and work-related wellbeing.

Current Study

Despite previous research on police officers and mental health, there is very little research that identifies connections between mental health in police officers and life events such as ACEs (Violanti et al., 2021). Furthermore, much of the current literature focuses on police mental health through a pathological lens where the deleterious effects of trauma and stress exposure are emphasized rather than a strength-based emphasis (Sigad, 2021). Research on resilience in police officers suggests that officers who display traits associated with being resilient perform better at job tasks, have better health outcomes, and have better decision-making ability (Violanti et al., 2014). There is a gap that exists in understanding the components of resilience, especially in police officers. Through better understanding of the components of resilience in police officers, counselor educators may be informed as to how better prepare counselors in training to provide counseling services with this unique and deserving population. Furthermore, an understanding of the components of resilience in police officers may inform police administrators on best practices for ensuring that resilience training is incorporated into police academies and regular in-service training as well as ensuring services for police officers who succumb to the effects of operational and organizational stress as well as acute traumatic events. In this current study, I intend to examine the components of resilience, specifically ACEs, and its role in predicting resilience in police officers.

CHAPTER THREE

Methodology

In this chapter, I will propose the methodology of this study. First, I will restate the research question for the study. I will then provide the rationale and an overview of the design for this study including the conceptual framework, the use of hierarchical regression, and the procedures for data collection and data analysis. Finally, I will conclude with limitations of the proposed study.

Research Question and Hypothesis

Based on the primary aim of the current study, I propose to address the following research question:

Q1. What is the role of personal exposure to adverse childhood experiences in predicting resilience levels in police officers when controlling for age, gender, race, veteran status, education level, and years of active police service?

$H1_a$. There will be a negative relationship between levels of resilience and personal exposure to adverse childhood experiences in police officers controlling the effects of age, gender, race, veteran status, education level, and years of active police service.

Conceptual Framework of the Current Study

This study is influenced by not only the focus of the research question, but also my own worldview as reiterated by Creswell and Creswell (2018). I approached this study through a postpositivist lens that influences the research design, a non-experimental, quantitative design, as well as the methods used for data collection, analysis, and interpretation. A postpositivist view is rooted in a belief that challenges the absolute truth of knowledge. Postpositivist thought promotes knowledge being shaped by data and evidence; however, it also accepts that research

can be imperfect (Creswell & Creswell, 2018) necessitating the need to question what we believe we understand (Panhwar et al., 2017).

The postpositive nature of this study was also influenced by the framework of Resilience Theory as introduced by Garmezy et al. (1984). Resiliency Theory (RT) originally focused on developmental psychopathology in children and families where adverse conditions were present either through environment or biology. RT is a strength-based conceptual framework that describes how promotive factors protect individuals from the negative trajectories of risk factors encountered during life experience (Zimmerman, 2013). A gap in the literature exists where RT is utilized in the study of police officers indicating a need for further inquiry.

Research Design

In this study, I wanted to gain a better understanding of the individual variables that are contained within the measures of resilience in a specific population – police officers. Following the study's conceptual framework and purpose, I implemented a quantitative, non-experimental research design. More specifically, I utilized a correlational approach which allows for description and measurement of the association between two or more variables and is particularly suited for hierarchical regression (Creswell & Creswell, 2018), using self-report data collection instruments. Hierarchical regression is a technique suited for measuring the effects of two or more independent variables on a single dependent variable (Walliman, 2011). Additionally, hierarchical regression is designed for when researchers are interested in testing theoretical assumptions and the influence of a specific independent variable on the variance of a dependent variable, over and above the influence of other independent variables (Petrocelli, 2003). According to Jeong and Jung (2016), hierarchical multiple regression allows a researcher to enter variables in nested levels based on a theoretical background, unlike standard or multiple

regression which enters all variables into a model at once. This nesting of levels in the hierarchical regression model allows for closer examination of specific independent variables' influence on the variance of a dependent variable while still controlling for other independent variables (Jeong and Jung, 2016). This study was informed by the *challenge model* of resilience theory introduced by Rutter (1987) that described better outcomes for persons that had some exposure to adversity in life compared to persons who did not have exposure to adversity. The structure of a hierarchical multiple regression model combined with the principles of the *challenge model* of resilience theory informed the variables selected for this study and the order in which they were entered into the model. In particular, this allowed for examination of a specific independent variable, ACEs score, on the change of the dependent variable, resilience scores, while still controlling for the effects of the other independent variables.

Participants

Participants in this study included actively serving and formerly serving police officers. In May 2021, there were approximately 665,380 actively serving law enforcement officers (*Occupational Employment and Wages: 33-3051, Police and Sheriff's Patrol Officers*, 2021). It is impractical to survey the entire population of police officers; therefore, a representative sample was recruited through convenience sampling for this study. Despite being the least rigorous of the sampling types (Creswell & Creswell, 2018), this sampling method is the most suitable means of gathering the target participants. Sending email invitations through police agencies and other law enforcement organizations that have access to large numbers of actively serving police officers, I intended to allow police officers to remain anonymous in their responses and remove any coercion to participate from the process. Additionally, potential participants were invited through use of social media platforms. Police officers tend to have a mistrust of their

organizations, and as a population, they are skeptical to reveal accurate information about themselves for fear of it being used against them in an administrative manner (Shane, 2010). Therefore, I tried to minimize this through recruitment on social media platforms. The fact that all participants were actively serving, or formerly serving, police officers infers that all participants are adult (age 18 or over) and able to provide informed consent to participate in the study. A priori power analysis using G*Power determined a minimum number of 107 participants needed for this study.

Data Collection Instruments

In the current study, I used a demographic information form, the Adverse Childhood Experiences Questionnaire (ACE-Q), the Connor-Davidson Resilience Scale 10 (CD-RISC). See Appendices for the data collection instruments used in this study.

Demographic Information Form (Appendix B)

The demographic information form included questions on age, race, gender identity, education level, veteran status, and years of active police service of the participants. Additionally, information of police department size, a categorical variable, were collected in the demographic data for descriptive purposes but not analyzed for the current study. In this study, I attempted to identify specific individual factors that are present in resilient police officers.

Adverse Childhood Experiences Questionnaire (ACE-Q; Appendix C)

Since the original ACEs study in 1998 (Felitti et al., 1998), several instruments have been developed to measure exposure to childhood trauma and adversity; the Childhood Trauma Questionnaire (Bernstein et al., 2003), the Early Trauma Inventory (Bremner et al., 2007), and the Child and Adolescent Trauma Screen (Sachser et al., 2017). As part of their original ACEs research, Felitti et al. (1998) developed the Adverse Childhood Experience Questionnaire (ACE-

Q) as a self-report, brief screening instrument used to assess a patient's exposure to childhood trauma and adversity. The Adverse Childhood Experiences Questionnaire (ACE-Q) is a brief rating scale that has provided epidemiological evidence concerning the link between childhood exposure to trauma and health concerns in adults (Zarse et al., 2019) and has become one of the most used instruments to measure exposure to childhood trauma and abuse (Meinck et al., 2017). Utilizing the Conflict Tactics Scale and the Childhood Trauma Questionnaire, Felitti et al. developed the 10-question ACE-Q with a yes/no response format (Dong et al., 2004). It measures three overall domains including physical, sexual, and emotional abuse, physical and emotional neglect, and household dysfunction (Anda et al., 2009; Dong et al., 2003). The questions on the ACE-Q are related to the respondents first 18 years of life and rely on the memory of the respondent and their willingness to self-report their trauma exposure.

The instrument measures three overall domains including physical, sexual, and emotional abuse, physical and emotional neglect, and household dysfunction (Anda et al., 2003; Dong et al., 2004). According to Mei et al (2022), the use of the three subscales (i.e., abuse, neglect, and household dysfunction) are limited in range, so the total ACE score should be used as an evaluation tool when assessing exposure to ACEs. The ACE-Q has also shown good-to-excellent test-retest validity with Kappa values between .65 and .85 (Dube et al., 2004). Goldenson et al. (2021) reported acceptable psychometric properties of the ACE-Q for test-retest reliability with Kappa values between .66 and .77. However, Zarse et al. (2019), cautioned researchers with the information that the ACE-Q does not measure intensity, frequency, or duration of trauma and therefore cannot be specific about which domains are the most impactful to the individual. Zarse et al. do suggest that the ACE-Q is uniquely productive in revealing a relationship by showing the convergence of high ACEs scores (≥4) with increasingly poor health outcomes. Dong et al

(2004) also suggest that ACE-Q scoring remains strong as a predictive measure of adult mental and physical illness despite the critiques of the instrument's inclusion of multiple trauma criteria within individual domains.

Connor-Davidson Resilience Scale (CD-RISC; Appendix D)

Like the ACE-Q, there are several instruments that currently measure resilience such as the Connor-Davidson Resilience Scale, the Resilience Scale for Adults (Morote et al., 2017; Smith et al., 2020), and the Brief Resilience Scale (Smith et al., 2008; Soer et al., 2019), all psychometrically sound instruments for the measurement of resilience. These are all self-report instruments that ask questions such as one's ability to bounce back, or recover after exposure to adversity, usually a traumatic event (Sánchez et al., 2021). Developed by Connor and Davidson (2003), the CD-RISC is a very widely used scale of psychological resilience with robust psychometric properties (Green et al., 2014; Kuiper et al., 2019; Martinez et al., 2021). The 10-item self-report questionnaire designed to assess overall resilience using a 5-point Likert scale ranging from 0 (Not at all) through 4 (Nearly true all the time). The instrument uses a 0 to 40-point score with higher scores indicating greater levels of resilience (Madewell & Ponce-Garcia, 2016). Factor analysis of the CD-RISC yielded 5 factors described as Personal Competence, High Standards, and Tenacity (Factor 1), Trust in One's Instincts, Tolerance of Negative Affect, and Strengthening Effects of Stress (Factor 2), Postive Acceptance of Change and Secure Relationships (Factor 3), Control (Factor 4), and Spiritual Influences (Factor 5; Connor & Davidson, 2003; Kuiper et al., 2019). Martinez et al. (2021) conducted confirmatory factor analysis and reported, Cronbach's α began to decrease in Factors 4 and 5 as compared with Factors 1 – 3. Additionally, Martinez et al. (2021) reported coefficient of determination values over all 5 factors at $\leq .50$.

Connor and Davidson's (2003) original evaluation of the CD-RISC was conducted using groups from General population (*n*=577), primary care outpatients (*n*=134), psychiatric outpatients (*n*=43), generalized anxiety patients (*n*=24), and PTSD patients (*n*=44). They reported overall internal consistency for the overall scale using Cronbach's α as .89. Test – retest reliability was assessed using the GAD and PTSD group (*n*=68) and reported with an interclass correlation coefficient (ICC) agreement of .87 (Connor & Davidson, 2003) with mean CD-RISC scores at time 1 [57.2(17.9)] and time 2 [52.8 (19.9)]. Additional studies of the CD-RISC have shown Cronbach's α .92 and ICC of .87 (*n*=11,022; Jung et al., 2021), Cronbach's α .90 and ICC of .90 (*n*=74; Kuiper et al., 2019), and Cronbach's α .87 and ICC of .90 (*n*=397; Martinez et al., 2021).

Data Collection Procedures

In this study, prior to any data collection, participants were provided a brief description of the study and an informed consent (Appendix A). Participants who wished to continue were directed to a web-based 2-part questionnaire where their responses were collected anonymously. The first part consisted of a demographics form collecting information, while the second part consisted of 20 questions taken directly from the CD-RISC 10 and the ACE-Q. For the purposes of the survey, the questions were intermingled, and the titles of the original questionnaires did not appear to avoid any potential social bias from the participants. The expected time to complete the entire questionnaire was approximately 20 minutes. The survey questions were then reconstituted in their original order within their respective questionnaires (either the ACE-Q or CD-RISC) and scored. Prior to the start of the study, the Old Dominion University Institutional Review Board approved this study (IRB Protocol Study 2160293-1).

Invitations to participate were electronically mailed to a list of Fraternal Order of Police (FOP) Chapter Presidents. The FOP is a national organization with chapters in many local areas that support the interests of police officers including legislative programs, employee representation, and community involvement. The FOP currently claims membership of 364,000 in 2,200 local chapters. Sending invitations to participate to FOP chapters rather than through the offices of Sheriff's or Police Chiefs further reinforced to police officers the anonymous nature of the current study.

Data Analysis

Hierarchical Regression was conducted using data collected from the questionnaires and analyses completed using the Statistical Package for the Social Sciences (SPSS) Version 29.0.2.0. According to Petrocelli (2003), hierarchical regression is used in testing theoretical assumptions when examining the relationships between criterion and predictor variables. Hierarchical regression is also used when analyzing the amount of variance in a dependent variable when more than one predictor variable is being tested and while entering the predictor variables in multiple blocks to control for their effects during analysis (Ross & Wilson, 2017).

The current study is designed to determine the role of ACEs exposure on resilience in police officers when holding steady for the other predictor variables. I entered eight variables to the analysis; one criterion variable and seven predictor variables; one dichotomous, three categorical, and four continuous. The criterion variable was a continuous measure of resilience using the CD-RISC-10. Predictor variables were age (continuous), race (categorical; Asian/Pacific Islander, Black, Hispanic/Latin X, Multiracial, and White), gender identity (categorical; Female, Male, Non-binary, and Transgender), level of education (categorical; General Equivalence Degree, High School Diploma, Bachelor's Degree, Master's Degree or

higher), veteran status (dichotomous; military service at any time/still serving and no military service at any time), years of active service as a police officer (continuous), and total ACEs score taken from the ACE-Q (continuous).

For predictor variables race, gender identity, and education level, dummy coding was used. Additionally, dummy coding of the ACEs variable was used in a secondary analysis of ACEs scores and is discussed in the results. Veteran status was a dichotomous variable and was not coded. After dummy coding, hierarchical regression was conducted with the seven predictor variables in blocks. I entered resilience as the dependent variable of concern in Block 1, then entered age, the race dummy variables, the gender identity dummy variables, and the education level dummy variables to control for their effects. In Block 2, I entered veteran status and years of active police service. These variables were entered separately into Block 2 due to their potential moderating effects which needed to be controlled during analysis. Finally, in Block 3, I entered participant's ACEs score. Table 1 indicates the order and the name of the variables that will be entered into the regression.

Table 1

Order and Name of the Variables Entered into Regression

	Variables Entered	
Blocks	Number of Variables	Name of Variables
1	5	Resilience score, Age, Race dummy 1, Race dummy 2, Race dummy 3, Race dummy 4, Race dummy 5, Gender dummy 1, Gender dummy 2, Gender dummy 3, Gender dummy 4, Education Level dummy 1, Education Level dummy 2, Education Level

		dummy 3, Education Level dummy 4
2	2	Veteran status, years of active police service
3	1	ACEs score

CHAPTER FOUR

Results

In this study, I wanted to gain a better understanding of the individual variables that are contained within the measures of resilience in a specific population – police officers. For this study, I specifically wanted to focus on adverse childhood experiences and its role in predicting resilience. Following the study's conceptual framework and purpose, I implemented a quantitative, non-experimental research design. More specifically, I utilized a correlational approach which allows for description and measurement of the association between two or more variables and is particularly suited for hierarchical regression (Creswell & Creswell, 2018), using self-report data collection instruments. To address the aim of this study, I pursued the following research question: What is the role of personal exposure to adverse childhood experiences in predicting resilience levels in police officers when controlling for age, gender, race, veteran status, education level, and years of active police service?

Demographic Description of the Participants

The participants in this study included police officers who were actively serving or had previously served as police officers. The sample size was determined through a power analysis to statistically determine an appropriate sample given the study parameters. Using a confidence level of 95% and a 5% margin of error, a sample size of 107 was determined using G*Power software. A total of 130 responses were received in Qualtrics. Of the 130 total responses, 124 were received with complete responses to all demographic and survey instrument questions which were then screened again for any missing and/or erroneous information.

Demographic information collected included gender identity, race, age, and education level. Additional demographic data included veteran status and years of service in police work.

The sample included 101 (81.45%) respondents identifying as male and 23 (18.54%) identifying as female. Despite the inclusion of four additional options for gender identity (non-binary, transgender, prefer not to say, other), none of those options were selected as responses by any of the participants.

Table 2

Participants Gender Identity

Gender Identity	Frequency	Percent
Female	23	18.54
Male	101	81.45
Non-Binary	0	0
Transgender	0	0
Prefer not to say	0	0
Other	0	0

The racial profile of the sample mostly identified as White (86.29%). Respondents of color included eight Black (6.45%), four Hispanic/LatinX (3.22%), four Multiracial (3.22%), and one Asian/Pacific Islander (.80%).

Table 3

Participant Race

Race	Frequency	Percent
Asian/Pacific Islander	1	0.8
Black	8	6.45
Hispanic/Latin X	4	3.22
Multiracial	4	3.22
White	107	86.29

The age of the participants ranged from 22 years of age to 73 years of age with an average age of 48 years old (*SD* = 10.52).

Table 4

Participant Age Range

Age in years	Frequency	Percent
21-24	1	.8
25-34	10	8.06
35-44	36	29.03
45-54	41	33.06
55-64	27	21.77
65 and higher	9	7.25

The reported education levels of the participants ranged from general equivalency degree (*n*=4, 3.22%) through master's degree or higher (*n*=23, 18.54%) with over half of participants having bachelor's degrees (*n*=66, 53.22%).

Table 5

Participant Education Level

Education Level	Frequency	Percent
General equivalency degree	4	3.22
High School Diploma	31	25.00
Bachelor's Degree	66	53.22
Master's Degree or higher	23	18.54

The years of police service reported by participants ranged from one year up to 48 years of service. The average time of service reported by participants was 20 years (*SD* = 9.28).

Table 6

Participant Years of Police Service

Years of Police Service	Frequency	Percent
1-4	4	3.22
5-9	11	8.87
10-14	20	16.12
15-19	20	16.12
20-24	31	25.00
25 and higher	37	30.64

The veteran status of participants was reported as either having served in the military/still serving in the military or no military service at all. Of the 124 participants who responded, 51 (41.13%) reported either having served in the military or still serving the military at the time of their response. The rest of the participants (*n*=73, 58.87%) reported having no military service.

Table 7

Participant Veteran Status

Veteran Status	Frequency	Percent
Previous military experience or still serving in the military	51	41.13
No military service at all	73	58.87

Demographic information on department size was also collected. Although not analyzed for this study, it may prove informative in future studies. Participants reported serving in departments from 1-69 officers (20.96%), 70-99 officers (14.51%), 100-499 officers (20.96%), 500-999 officers (33.87%), and Over 1000 officers (9.67%).

Preliminary Screening of the Data

Prior to analysis, the data were screened for assumptions required for hierarchical regression. Using the Statistical Package for the Social Sciences (SPSS) Version 29.0.2.0, the first assumption tested was for normality which requires normal distribution of the dependent variable. For this assumption, tests for skewness, kurtosis, and the Shapiro-Wilk were examined. Acceptable ranges for skewness are between -1.0 and 1.0, and for kurtosis are between -2.0 and 2.0. As seen in Table 8, the dependent variable was negatively skewed with a value of -.267, while kurtosis was -.326, indicating mesokurtotic distribution of the dependent variable. For the dependent variable, both skewness and kurtosis values were within the acceptable limits, indicating normal distribution of the dependent variable. The dependent variable also had a Shapiro-Wilk value of p=.152, indicating a non-statistically significant value. When Shapiro-Wilk values are *not* statistically significant, the normal distribution of the variable is assumed to be true. The analysis showed skewness in Race (-2.67) and Gender (-1.64) which is expected with this sample which identified overwhelmingly as white (86.29%), and male (81.45%) which is consistent with current literature reporting 85.5% of sworn officers in the United States identifying as male and 73.4% identifying as white (Leatherby & Oppel, 2020). ACES Score showed a skewness of .950. Skewness of the ACEs score is consistent with current literature. Madigan et al (2023) reported that ACEs scores are positively skewed with 84% of responded in their meta-analysis having ACEs scores <=3. In this sample, 75.8% of the participants reported ACEs scores <=3 (n=94) and 24.2% reported ACEs scores >=4 (n=30).

Table 8

Statistical Summary of Variables with CD-RISC and ACEs Scores

	Skewness	Kurtosis

	N	Min.	Max.	Mean	Std. Deviation	Statistic	Std. Error	Statistic	Std. Error
CDRISC Score	124	17	40	30.60	4.886	-.267	.217	-.326	.431
Education Level	124	1	4	2.09	1.236	.432	.217	-1.537	.431
Gender	124	1	2	1.81	.390	-1.638	.217	.695	.431
Race	124	1	5	4.68	.879	-2.672	.217	5.889	.431
Age	124	22	74	48.65	10.523	.095	.217	-.394	.431
Veteran Status	124	1	2	1.59	.494	-.365	.217	-1.898	.431
Years of Service	124	1	48	20.18	9.289	.319	.217	-.073	.431
ACES Score	124	0	8	2.36	2.139	.950	.217	.303	.431

Table 9

Frequency Distribution of Participant's CD-RISC Scores

CD-RISC Score	Frequency	Percent
17	1	0.8%
19	1	0.8%
20	1	0.8%
21	2	1.6%
22	2	1.6%
23	3	2.4%
24	5	4.0%
25	4	3.2%
26	5	4.0%
27	5	4.0%
28	11	8.9%
29	13	10.5%
30	10	8.1%
31	5	4.0%
32	11	8.9%
33	9	7.3%

34	4	3.2%
35	11	8.9%
36	5	4.0%
37	7	5.6%
38	4	3.2%
39	3	2.4%
40	2	1.6%

Figure 1

Distribution of CD-RISC Scores

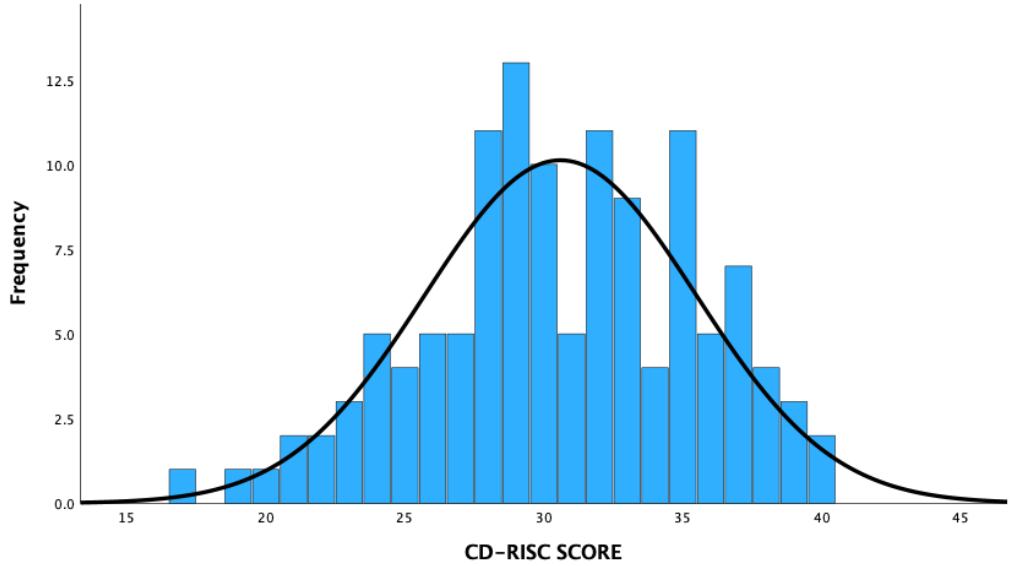


Table 10

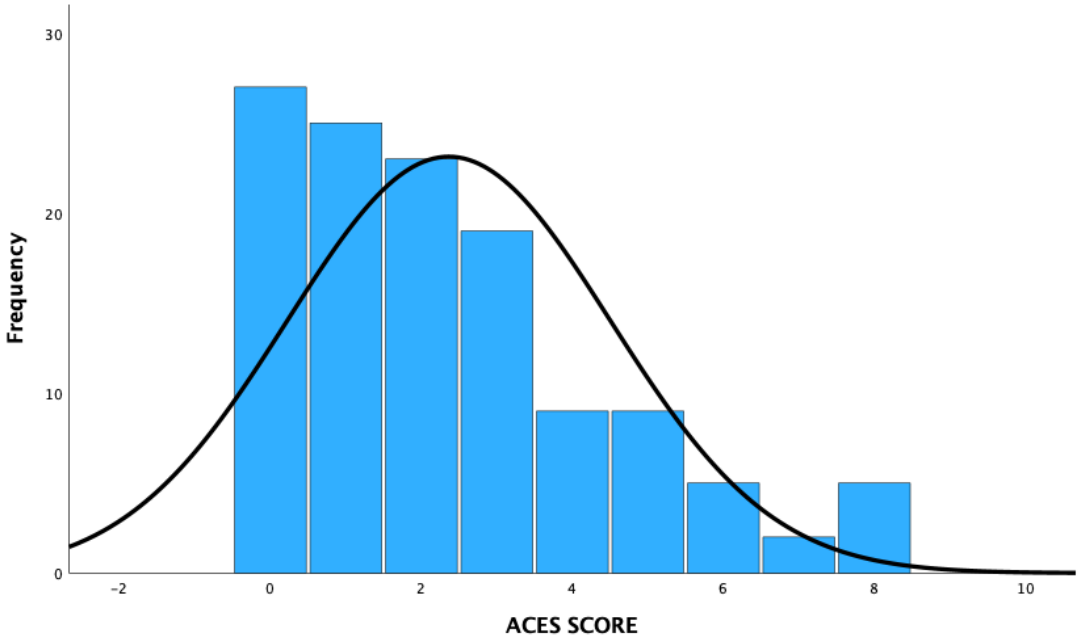
Frequency Distribution of Participant's ACEs Scores

ACEs Score	Frequency	Percent
0	27	21.77
1	25	20.16
2	23	18.54
3	19	15.32

4	9	7.25
5	9	7.25
6	5	4.03
7	2	1.61
8	5	4.03

Figure 2

Distribution of Participant's ACEs Scores



Second, multicollinearity assumption was tested. The results showed that there was no evidence of multicollinearity among the dependent and the predictor variables. As seen in Table 11, all correlation values were under the acceptable value of .7 *except* for Age and Years of Service which showed a value of .761. Still, the observed Variance Inflation Factor for Age and Years of Service never exceeded 2.58 and 2.47, respectively, indicating that the level of collinearity between the variables did not warrant correction for these models.

Table 11

Results of Test of Multicollinearity

		CD-RISC Score	Age	Race	Gender	Educ. Lvl.	Vet Status	Yrs. of Svc.	ACEs Score
Pearson Correlation	CD-RISC Score	1.000	.022	-.138	-.074	.106	.052	.087	-.240
	Age	.022	1.000	-.023	.248	.117	-.209	**.761**	.086
	Race	-.138	-.023	1.000	.037	.079	.010	.087	.007
	Gender	-.074	.248	.037	1.000	.018	-.146	.182	-.084
	Education Level	.106	.117	.079	.018	1.000	.020	.135	.169
	Veteran Status	.052	-.209	.010	-.146	.020	1.000	-.150	-.119
	Years of Service	.087	.761	.087	.182	.135	-.150	1.000	.012
	ACEs Score	-.240	.086	.007	-.084	.169	-.119	.012	1.000
Sig. (1-tailed)	CD-RISC Score	.	.402	.063	.208	.122	.283	.169	.004
	Age	.402	.	.401	.003	.098	.010	.000	.172
	Race	.063	.401	.	.340	.192	.455	.169	.471
	Gender	.208	.003	.340	.	.423	.053	.022	.176
	Education Level	.122	.098	.192	.423	.	.412	.067	.030
	Veteran Status	.283	.010	.455	.053	.412	.	.048	.094
	Years of Service	.169	.000	.169	.022	.067	.048	.	.446
	ACEs Score	.004	.172	.471	.176	.030	.094	.446	.
N	CD-RISC Score	124	124	124	124	124	124	124	124
	Age	124	124	124	124	124	124	124	124
	Race	124	124	124	124	124	124	124	124
	Gender	124	124	124	124	124	124	124	124
	Education Level	124	124	124	124	124	124	124	124
	Veteran Status	124	124	124	124	124	124	124	124
	Years of Service	124	124	124	124	124	124	124	124
	ACEs Score	124	124	124	124	124	124	124	124

Next, homoscedasticity assumption, a measure of the homogeneity of variances in the data, was checked. Figure 3 shows a scatter plot of the of the standard residuals showing most values between plus or minus two standard deviations appearing to be consistent with homoscedasticity. Additionally, the Durbin-Watson value was calculated to test for autocorrelation. The Durbin-Watson values range from values of 0 to 4 with a value of 2 indicating that residuals are uncorrelated. The Durbin-Watson value for this data set was

calculated at 1.84 as seen in Table 11. Using the Durbin-Watson significance table with *n*=124 and seven predictor variables, the lower limit of this value is 1.400 and the upper limit is 1.693. The Durbin-Watson value of this data set is 1.84 which is above the upper limit and indicates that there is no autocollinearity present in the data.

Figure 3

Scatterplot of Standard Residuals

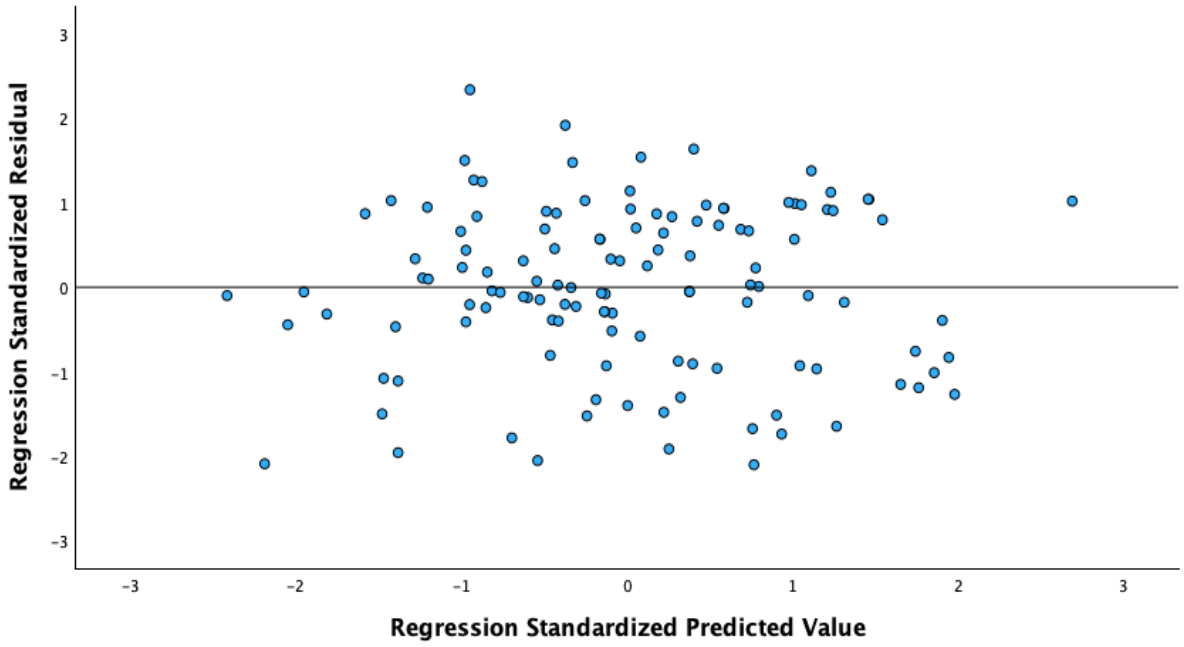


Table 12

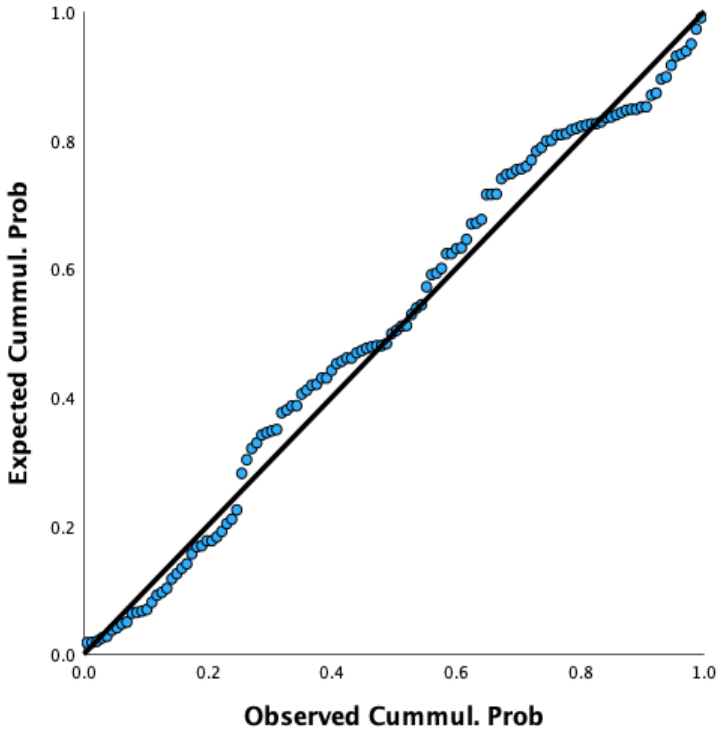
Durbin-Watson Test of Autocorrelation

Block	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.196[a]	.038	.006	4.871	
2	.236[b]	.056	.007	4.868	
3	.350[c]	.122	.069	4.713	**1.844**

Linearity of the data set, a necessary assumption in hierarchical regression describing the relationship between the dependent variable and the independent variables in the model, was examined. Figure 4 shows the linearity of the data set where there is some slight deviation from the expected regression line, but the data generally follow a linear shape. Data were assessed for multivariate outliers using a Mahalanobis Distance test. No multivariate outliers were identified.

Figure 4

Linearity of Data



Results

In addition to demographics questions, two main validated instruments [i.e., the Adverse Childhood Experiences Questionnaire (ACES-Q); the Connor-Davidson Resilience Scale (CD-RISC)] were used to run a Hierarchical Regression utilizing the Statistical Package for the Social Sciences (SPSS) Version 29.0.2.0. The hierarchical regression model using three blocks with the

results are summarized in Table 13. Block 1, consisting of demographic data of age, race identity, gender identity, and education level, did not show any statistical significance (R^2 change = .038, p = .321). Similarly, Block 2, including veteran status and years of police service, did not show any significant change in the dependent variable (R^2 change = .017, p = .345), either. Of the three blocks, only Block 3 with the ACEs scores showed statistical significance (R^2 change = .067, p = .004).

Table 13

Model Summary for Multiple Linear Regression of CD-RISC and ACEs Scores

Block	R	R Square	Adjusted R Square	Std. Error of Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.196[a]	.038	.006	4.871	.038	1.185	4	119	.321
2	.236[b]	.056	.007	4.868	.017	1.073	2	117	.345
3	.350[c]	.122	.069	4.713	**.067**	8.817	1	116	**.004**

a. Predictors: (Constant), Age, Race, Education Level, Gender

b. Predictors: (Constant), Age, Race, Education Level, Gender, Veteran Status, Years of Service

c. Predictors: (Constant), Age, Race, Education Level, Gender, Veteran Status, Years of Service, ACEs Score

Table 14, presenting the unstandardized regression coefficients (b) and the standardized regression coefficients (β), also indicates a negative significant association (-.268) between ACEs and resilience scores. In other words, as police officers' ACEs scores increased, their resilience scores decreased.

Table 14

Multiple Linear Regression Model to Predict Resilience Scores

		B	Std. Error	Beta	t	Sig.
1	(Constant)	34.569	3.509		9.852	<.001
	Education Level	.456	.359	.115	1.271	.206
	Gender	-.956	1.163	-.076	-.822	.413
	Race	-.801	.502	-.144	-1.595	.113
	Age	.011	.043	.025	.263	.793
2	(Constant)	35.347	4.253		8.312	<.001

	Education Level	.419	.360	.106	1.164	.247
	Gender	-.870	1.168	-.070	-.745	.458
	Race	-.911	.508	-.164	-1.794	.075
	Age	-.053	.067	-.113	-.792	.430
	Years of Service	.101	.074	.193	1.371	.173
	Veteran Status	.461	.914	.047	.505	.615
3	(Constant)	36.894	4.150		8.890	<.001
	Education Level	.600	.354	.152	1.696	.093
	Gender	-1.288	1.140	-.103	-1.130	.261
	Race	-.887	.492	-.160	-1.804	.074
	Age	-.030	.065	-.064	-.460	.646
	Years of Service	.081	.072	.153	1.119	.265
	Veteran Status	.131	.892	.013	.147	.883
	ACEs Score	-.611	.206	**-.268**	-2.969	**.004**

At this point in the analysis, the previously observed skewness of the ACEs scores prompted me to do a secondary analysis of the regression model to determine the possible effects of skewness on the model. Prior to conducting the secondary analysis, the ACEs scores were recoded. All values <=3 were recoded as 0, and all values >=4 were recoded as 1. ACEs scores between 3 and 4 were selected as the dividing line because research suggests that the actual number of types of exposure (1 exposure versus ≥4 exposures) were more impactful than the specific type of exposure (physical versus emotional; Molina & Whittaker, 2022; Salmon et al., 2023; Xue et al., 2017). Additionally, individuals with an ACEs score of 4 or higher are at elevated risks for mental, physical, and stress related problems (Crouch et al., 2018). After dummy coding of the ACEs scores was completed, the model was analyzed again in the same order as the original analysis. Table 15 shows the results of the secondary analysis to explore the change in the statistical values when model analyses were conducted using the ACEs scores after recoding (ACEs <=3, and ACEs >=4). As in the original analysis, Blocks 1 and 2 were not statistically significant. Block 3, which included the recoded ACEs score, was also *not*

statistically significant in this model analysis indicating that the original linear presentation of the ACEs scores predicted a statistically significant decrease in resilience scores.

Table 15

Model Summarization Using Recoded ACEs Scores

						Change Statistics			
Block	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
1	.196[a]	.038	.006	4.871	.038	1.185	4	119	.321
2	.236[b]	.056	.007	4.868	.017	1.073	2	117	.345
3	.293[c]	.086	.030	4.810	.030	3.812	1	116	.053

a. Predictors: (Constant), Education Lvl., Gender, Race, Age

b. Predictors: (Constant), Education Lvl., Gender, Race, Age, Vet. Status, Years of Svc.

c. Predictors: (Constant), Education Lvl., Gender, Race, Age, Vet. Status, Years of Svc., ACES Score Recoded

Summary of the Chapter

A hierarchical regression analysis was completed to examine the relationships between ACEs scores and resilience scores when holding for demographic data of age, race, gender identity, education level, veteran status, and years of police service. The survey data collected using the Adverse Childhood Experience Questionnaire and the Connor-Davidson Resilience Scale were analyzed for 124 participants. Conducting the regression analysis yielded a small but significant result that showed a negative correlation between ACEs scores and resilience scores. A subsequent analysis was conducted to determine statistical significance after recoding ACEs scores into groups of <=3 and >=4. There was no statistical significance in the results of the analysis after recoding ACEs scores.

CHAPTER FIVE

Discussion

In this chapter, I intend to discuss the results of the data collection as they apply to the research question presented at the beginning of this study. Additionally, there will be a discussion of the implications of these results for counseling and counselor education as well as the implications for law enforcement agencies. Limitations of the study and recommendations for future research will also be discussed.

This study analyzed data using hierarchical regression to determine the predictive ability of exposure to adverse childhood experiences on resilience in police officers while controlling for the effects of certain demographic variables. The first block in the model included resilience as the dependent variable while age, racial identity, gender identity, and education level were predictor variables. None of these demographic factors appeared to have a significant role in the prediction of resilience scores supporting more current literature than earlier studies of resilience. Early literature in resilience studies referenced age, gender, demographic status, genetic history, and exposure to stressful life events as potential risk factors that impacted resilience (Barmezy & Masten, 1986). Focusing mainly on the deleterious effects to resilience, this information was followed by Masten et al.'s (1990) addition of mother's educational achievement as another potential risk factor to overall psychological resilience. As their focus switched to examination of promotive factors of resilience, researchers rejected many of these demographic factors' influence (Chicchetti & Garmezy, 1993) and more recently have discussed resilience as a concept (Aburn et al., 2016) and not because of the totality of independent variables. Thus, this study's results with demographic factors of age, racial identity, gender identity, and education level of the participants are on par with the current literature's emphasis. More specifically, these

demographic factors' lack of ability to predict resilience in the current study could possibly be related to the constantly changing determinants of resilience as persons interact with their environments (Masten, 2014) as well as their cultural environment's impact on how trauma is viewed, influencing the levels of resilience (Leckman, 2013). For example, police officers often serve in environments where exposure to trauma is just 'part of the job' and may develop protective factors that make them resistant to trauma's negative impact as may be expected by their work environment. On the other hand, while previous literature references some social and biological determinants of resilience (e.g., age, gender, education levels), there was no empirical research dedicated to examining the effects of those determinants on resilience levels. Rather, they were combined as part of a holistic view of how resilience was described in broad terms. Thus, one purpose of including those variables in the current study was to initiate a closer examination of their *potential* impact on resilience scores, which showed no statistical significance for this sample.

Controlling age, racial identity, gender identity, and education level in the first block, the second block of the model examined the predictive ability of police officers' veteran status and years of police service on resilience scores. Yielding *no* statistical significance, veteran status and years of police service did not appear to have a role in the prediction of resilience scores among the current sample of the police officers, either. While veteran status and years of active police service were collected as demographic data and were not the primary focus of the research question, there was an *informed expectation* that the stress inoculation received during these experiences could play a role in resilience scores of the police officers. Resilience theories informs veteran status and years of police service as possible predictors of overall resilience. Rutter (1987) introduced the *challenge model* of resiliency and stated that inoculation through

exposure to stress produced better outcomes than no exposure at all. Additionally, the *challenge model* described relationships between risk factors and outcome variables noting that exposure to risk factors can potentially activate protective factors thereby reducing the impact of risk (Evans et al., 2010).

Police departments historically recruit and hire military veterans because of many parallel qualities between military service and police work (Patterson, 2002). According to Gau et al. (2021), military service can act as a protective factor for those who have served, as ideals promoted in military service (e.g., accountability, discipline, attention to detail) could be a foundation for increased resilience that serves military veterans who transition to police work (Shernock, 2016). The similarity between the police service and military service is also a factor for military veterans to transition to active police work. For example, the initial training experiences are designed to be stressful (military bootcamp or police academies) and expose participants to various stressors thereby expecting to provide some inoculation to their negative impacts. Additionally, the exposure to trauma and stress in both military service and police service have potential parallels as do the environments where both types of service occur (e.g., shift work, physically uncomfortable environments, time away from family, sleep deprivation, high levels of comradery, and exposure to direct physical harm). Chronic exposure may lead to possible burnout in some veterans that could potentially decrease resilience, or it may also act as a protective factor for other veterans potentially mitigating the influence of risk factors such as ACEs exposure. Therefore, despite not being the focus of the study, the lack of associations between veteran status and years of police service were surprising. While the relatively smaller number of veterans in the current sample (n = 41) may be a reason for this outcome, veterans in the current study may have already possessed other protective factors (e.g., self-efficacy,

optimism, a support network) that could be embedded within the veteran experience but were not analyzed in this study. Similarly, police officers' years of active police service may also be related to other protective factors in place that were not analyzed in the current study. For example, a better educated work force of officers with fewer years of service may be coming into police work at a time when there is more discussion about overall wellbeing of officers (although many wellness programs still struggle for acceptance). This may be due to differences in generational perspectives of the importance of individual mental health and wellbeing and the emphasis placed on those qualities of life by younger generations (Generation Z and Millennials compared to Generation X).

While holding steady for all the above-mentioned demographic variables (i.e., age, racial identity, gender identity, education level, veteran status, years of police service), the 3rd and the final block of this model included the examination of the focal predictor variable of participant's adverse childhood experiences (ACEs) on police officers' resilience scores. The statistically significant predictive power carried a negative correlation between ACEs scores and resilience scores, meaning for every unit of increase in ACEs score, there was a decrease in the resilience score. Current literature suggests that the *number* of exposures to ACEs can have more significant impact than the *types* of exposures even though some research suggests that exposure should be viewed through the lens of a complex series of experiences (Oshri et al., 2019). While opinions vary on the importance of number versus type of exposures, researchers report persons with exposure to *four or more* adverse childhood experiences were more likely to have negative outcomes than those who experienced *three or less* adverse childhood experiences (Molina & Whittaker, 2022; Salmon et al., 2023; Xue et al., 2017). Additionally, researchers suggest that those with exposure to four or more categories of ACEs have higher rates of major depressive

disorder and attachment related disorders (Bellis et al., 2014). It is possible that as officer's ACEs increases, it can create situations where resilience levels could decrease or would be limited without the influence of protective factors to offset the negative effects of the adverse experiences. Some of the protective factors found in research include support networks for children as they experience ACEs exposure (Bellis et al., 2017) and positive relationships with parents or caregivers (Woods-Jaeger et al., 2018). None of these factors were part of the focus in this study, so their possible impacts on police officers' resilience scores cannot be determined. With the observed data skewed toward lower ACEs scores, a secondary analysis of the 3rd block with recoded ACEs scores was performed to test the influence of the number of exposures to ACEs in the current dataset. There was no statistical significance observed using the recoded ACEs scores.

The results of this study with a connection between higher ACEs scores and decreasing resilience scores are also in keeping with other research (Bethell et al., 2016; Samson et al. 2019). Rutter (1987) posited that inoculation through exposure to risk mechanisms produced better outcomes than no exposure at all, while Zimmerman et al. (2013) cautioned that the exposure to the risk mechanism be sufficient to promote development of coping skills but not so taxing that it overcame one's ability to cope. On the other hand, researchers reported the role of ACEs scores as a predictor of negative outcomes such as health problems, mental health concerns, or substance abuse problems (Salmon et al., 2023; Xue et al., 2017). Yet, research focus was placed on mitigating the negative, long-term effects of ACEs exposure rather than examining ACEs as a specific variable of resilience scores. In this study of police officers, the observed results between ACEs scores and resilience scores seemed to indicate that regardless of the prior inoculation (veteran status), resilience scores decreased as ACEs scores increased.

There is a scarcity of research on the role of ACEs scores on resilience particularly in public safety workers (to include police officers, firefighters, and paramedics); thus, the current study results fill that gap in the literature briefly. There is also a gap in the literature where the actual *components* of resilience are explored and little, if any, information on the quantitative analysis of the predictors of resilience regardless of promotive factors or risk factors. Research on organizational stress' influence on resilience in police officers has also been largely disregarded (Doyle et al., 2021), despite researchers' reports on organizational stress having negative impacts on overall wellbeing of officers (Papazoglou & Andersen, 2014). According to Chan and Anderson (2020), growing evidence suggests that organizational stress can cause anxiety, depression, post-traumatic stress symptoms, and substance abuse which are like the symptoms in persons exposed to ACEs. The influence of organizational stress on resilience was not part of this study but seems to be critical for future studies.

In brief, this study is intended to be a stepping off point for research into the specific variables that comprise resilience. I believe this study does show that further research can eventually produce a model that can be used to accurately predict resilience in police officers as evidenced by the statistically significant values of the ACEs scores on resilience scores. The main result of the current study, the negative relationship between ACEs scores and resilience scores, provides insight into the beginnings of such a model.

Implications of the Study

Implications for Counselor Education

Several findings within this study have implications for counselor educators and counselors in training. The demographics of the sample were overwhelmingly white, male, in the 35–54-year age group. This present demographic brings into consideration generational

differences from groups that were underrepresented in this study (historically marginalized racial identities or persons between 21 – 34 years of age). These generational differences can be impactful for clients and require counselor educators to reinforce the important nuances of generational differences and how they are woven into the world view of the client. The approach needed for a middle-aged, white, cis-gendered males will be decidedly different from a younger, female person of color regardless of if they are both actively serving police officers. This additional element of treatment planning could be critical for successful outcomes with future clients.

The significance of ACEs scores observed in this study are also an important implication for counselor education. The results of this study indicated a negative relationship between ACEs scores and resilience levels. For counselors in training that may work with police officers in the future, addressing their immediate concerns may require a more intentional approach that starts with holistic assessments that may include administering an ACEs questionnaire. Understanding the influence ACEs can have on resilience levels can allow opportunities to practice counseling skills and use of assessment instruments that have application across racial, gender, and generational distinctions. Exposure to ACEs as a risk factor that may reduce resilience can also inform discussions on the impact of complex trauma in future clients. As counselors in training are learning and practicing to think of counseling from multiple perspectives based on the client's needs, an assessment of more than one type of trauma may be necessary. As students learn about treatment planning, the implications of ACEs significance in complex trauma can be an advantage when working with police officers who are also exposed to multiple other types of trauma from their jobs. A limitation of the questionnaire used in this study is that while it is the most widely recognized ACEs questionnaire, it does not consider

vicarious traumatization that can occur through secondary exposure to adverse experiences. This creates an opportunity for counselor education programs to examine not only the original ACEs questionnaire used in this study, but to also consider alternatives such as the Philadelphia Expanded ACEs questionnaire which considers secondary sources of adverse experiences (e.g. exposure to community violence, bullying, discrimination) and may have greater value with clients from marginalized populations.

In this study, ACEs did not have any significance in the model when the scores were recoded into <=3 and >=4. This lack of significance may be attributed to the observed skew of ACEs scores toward values <=3 and consistent with current literature reporting ACEs scores of >=4 produce higher levels of emotional and physical problems (Bellis et al., 2014). Any discussion of ACEs scores in counselor education training should reinforce that ACEs exposure is not always a significant detriment to the client and requires additional assessment prior to and during the therapeutic engagement between counselors and clients.

Although this study did not focus on promotive factors of resilience, it did take a single measure of resilience using the Connor-Davidson Resilience Scale – 10 (CD-RISC-10). The results of this study were consistent with the mean scores found in current literature on the CD-RISC-10 (Connor and Davidson, 2020). The implication for counselor education programs includes understanding the CD-RISC as a possible tool in the assessment and treatment planning for police officer clients as part of a larger strengths-based practice. Discussions about strength-based approaches can naturally lead to interest and better understanding of other measures of resilience that may also be useful in working with police officers or other clients.

Counselor training programs and affiliated counselor educators could also use the results of the current study to improve cultural competence of counselor trainees for future work with

police officers as a population. Since the high-profile police-involved deaths of George Floyd, Breonna Taylor, and Laquan McDonald, community sentiment toward police officers has become increasingly hostile. Nationwide protests and anti-police sentiment have created an additional stressor for officers who chose to remain in the profession as evidenced by decreasing recruitment of new police officers and increased lawsuits against officers and departments, while many police officers choose to leave the profession completely (Varker et al., 2022). This has a ripple effect on the officers who remain in the profession and an opportunity for increased cultural competence to enhance the counseling experience for those who seek the benefits of treatment. Through greater understanding of the impact of an officer's exposure to adverse childhood experiences, counselors in training may have a better understanding of the foundations of an officer's distress thereby leading to counseling responses with higher chances for successful outcomes.

Implications for Practicing Counselors

Some of the implications discussed for counselor educators and counselors in training can also translate to practicing counselors working with police officer clients. Some implications include a greater understanding of the complex trauma associated with higher aces ACEs exposure combined with trauma exposure from work experiences, becoming familiar with ACEs and resilience questionnaires as part of assessment and treatment planning, and considerations of the impact of ACEs as a risk factor in resilience levels. The identification of factors that may predict resilience in police officers can offer better insight into the understanding and treatment planning by practicing counselors working with this population. With police officers as clients, counselors can explore the impact of exposure to adverse childhood experiences as part of a holistic treatment planning that can also guide counselors in their understanding of how these

exposures are combined with the unique job-related stressors experienced by police officers. In addition to assessing the impact of work-related exposure to violence and acute trauma, counselors can also integrate organizational stressors and ACEs exposure to gain a more complete picture of the police officer client. Using a strengths-based approach to treatment, counselors may be able to look for specific indicators that may act as promotive or protective factors to offset the negative role that adverse childhood experiences can play in overall well-being of police officer clients. Some of these promotive or protective factors could include self-efficacy, family support, or self-esteem. There is also a potential for emotional regulation to be examined by counselors as a possible promotive factor.

What may have a greater impact for the practicing counselor is the *idea* of the study. By that, I mean that this study was designed by an actively serving police officer (and police chief) for the benefit of police officers and potentially other public safety professionals, without a financial or political motivation. For police officer clients, this may be a critical element in establishment of rapport through credibility in the counseling relationship. Current literature on police officers highlights the skepticism of officers when working with persons who themselves are not in law enforcement (Papazoglou & Anderson, 2014). As a group, police officers value evidence as a factor of trust. A counselor could use this study as part of psychoeducation with police officer clients and help create a common understanding that helps establish credibility and therefore trust in the therapeutic relationship. The study could display cultural competence that can lead to a more open and trusting counseling environment, which in turn, leads to greater chances for successful outcomes.

Additionally, the significance of ACEs scores on resilience levels offers another avenue for practicing counselors to broach the discussion of complex trauma with their officer clients.

By their nature, police officers are persons who serve others while denying their own needs and concerns often downplaying their own negative experiences (Sollie et al., 2017)**.** The significance of the ACEs scores and their negative impact on resilience scores can highlight for clients that police officers are also individuals who can be impacted by their experiences and those experiences and alter their world view. Counselors should be prepared for police officer clients to be resistant to discussing the impact of their past and choosing to focus how others 'have had it worse than me.' The significance of ACEs scores on resilience scores in this study may be a way to introduce that conversation into the therapeutic dialogue.

Implications for Police Agencies

This study focused on police officers and how ACEs could potentially predict resilience levels. Higher resilience levels can be associated with greater resistance to work-related stress and occupational trauma. For police departments, several findings in this study are relevant to the how departments recruit, train, and lead police officers.

Recruitment of police officers

Implications for recruitment of police officers begins with the *lack of significance* of the demographic variables in the model. Any previously held beliefs by law enforcement recruiters, supervisors, or executives about the benefits of certain demographic qualities should be questioned as an implication of this study. Age, racial identity, gender identity, and education levels offered no predictive ability for individual officers to have greater levels of resilience. Additionally, and surprisingly, neither years of service nor veteran status had any predictive value on resilience levels in the sample. This seems to contradict traditional beliefs within police agencies that experience as a police officer creates an increased ability to resist the influence of trauma exposure that is part of police work. Recruitment of officers from other police agencies

(referred to as lateral recruitment) is a regularly used strategy to hire candidates who are believed to have qualities valued by police agencies without the time and expense of training a recruit with no prior police experience. Additionally, military veterans have been coveted by police recruiters as candidates for employment. This strategy can be observed in police recruitment strategies that prioritize job fairs at military installations to recruit potential candidates and the awarding of additional point scores on veteran's applications for police departments. Veterans are also expected to be better prepared for the stress and rigors of police work as a condition of their prior experiences in the military which presumably inoculate them to certain levels of stress. The results of this study did not support that belief as evidenced by the lack of statistical significance of veteran status and years of active police experience on resilience scores when controlling for other demographic variables in the model. This study can be used to re-evaluate recruitment strategies that rely on lateral recruitment or focus on veterans.

Training police officers

Training programs designed to teach and improve basic understanding of the impact of ACEs can begin as early as the officer's initial training in the police academy. The results of this study indicated that ACEs exposure can negatively impact resilience levels. Collection of ACEs scores at the beginning of recruit training can allow for academy staff to identify individuals who may benefit from early counseling interventions, either through peer-counseling or professional counseling. The results of this study have implications for raising self-awareness of the impacts of ACEs on police recruits and young police officers and can inform lesson plans designed to help mitigate their effects on resilience through psychoeducation. Ultimately, this can translate to officers with higher levels of wellbeing who provide police services in a safer more effective manner leading to greater trust between police departments and communities.

Furthermore, the results of this study can inform annual training classes which are mandated as part of every law enforcement officer's scheduled recertification process. Training police officers on the negative effects of ACEs scores (and other types of stress or trauma exposure) can lead to increases in self-awareness which can lead to a decrease in stigma associated with receiving counseling services (a major hurdle for officers and police departments). Training can include training on the impact of exposure to trauma, chronic exposure to stress, and methods of building resilience through promotion of protective factors. This has the potential to benefit police departments in the building of trust in communities (Gershon et al., 2008) they serve and makes sense financially. Police departments spend significant amounts of money to recruit, train, and equip police officers to do their jobs. Training effects of trauma and stress exposure and promotion of resilience can lead to better job performance (Andersen et al., 2015), decreased absenteeism (Semeijn et al., 2019), and increases in effective communication by officers (McCraty & Atkinson, 2012). This can translate into lower rates of turnover in police departments, creation and preservation of higher standards of performance, and decreases in the costs associated with officers who leave departments for stress related reasons.

Leadership of police officers

One of the results of this study was the negative association between ACEs scores and resilience in police officers. While this study is expected to be the first in a series of studies of the components of resilience, understanding the results of this study can have far reaching implications for police leaders as they craft strategic plans for their departments. Police officers are recruited from the general population. Madigan et al (2023) reported that ACEs are common

among the general population with approximately 43% of the population exposed to between 1 and 3 ACEs, while 16% of the general population have exposure to 4 or more ACEs. This means that when departments recruit officer candidates from the general population, they are likely to hire someone with ACEs exposure which may have a negative impact on their resilience levels. Understanding this concept, police executives can create policies that mandate regular training and inform the development of programs within the department that specialize in the recognition and support of officers who may be experiencing problems related to trauma and stress exposure.

By understanding the impact of exposure to adverse childhood experiences, law enforcement leaders can better respond to officers who may experiences job related performance problems to include decreasing performance levels or behaviors that violate department policies. Police departments and police officers historically resist acceptance of mental health interventions or counseling services (Papazoglou & Anderson, 2014) in part because police culture and the stigma associated with acceptance of help (Burke & Shakespeare-Finch, 2011). Increasing awareness through research, especially when research is conducted by persons who have worked in law enforcement, has the potential to add credibility with police leadership and decision makers. This credibility is a critical step in creating an accepting environment for law enforcement leaders to view the wellness of their officers through a different lens. When leadership embraces the ideas of early mental health interventions and the value that research studies can have, it naturally follows that increases in resources for mental health and wellbeing are allocated as part of the normal course of business in police departments. Over time, this becomes the normal course of business for law enforcement agencies and creates opportunities for the further development of protective factors in police officers. This study explored avenues for the development of evidenced-based practices that can be incorporated in police agencies

with the expectation that improved officer wellness can translate into safer, more effective police officers.

Theoretical Implications

One theory discussed in this study was the *challenge model* of resilience. Rutter (1987) introduced the challenge model of resilience stating that inoculation through exposure to stress produced better outcomes than no exposure to stress at all. The results of this study challenge that idea. Accounting for the skew in the values of the reported ACEs scores, there was a negative relationship between ACEs scores and resilience scores and a linear relationship throughout the values. If some inoculation through exposure produced better outcomes then no exposure at all, the participants with an ACEs score of 0 should have lower resilience scores than those participants with scores between 1 and 3 (in theory) possibly allowing a curvilinear relationship to be observed. A rise in resilience scores should have been observed for those with some exposure arising from the inoculation factor posited in the theory. The challenge model could not account for later research that reported adults with ACEs scores of >=4 had higher rates of major depressive disorder, attachment-related disorders, and suicide attempts (Bellis et al., 2014; McRae et al., 2013). There are also possible promotive factors present in the sample that were not examined for the purposes of this study. The results of this study are not an outright rejection of the challenge model; however, additional studies should be undertaken for further evaluation of the theory.

Implications for Future Research

The purpose of this study was to investigate the relationship among factors that contribute to resilience. In this study, I examined how exposure to adverse childhood experiences (ACEs) may predict levels of resilience in police officers. The influence of some of the

demographic factors could not be ignored in this relationship; therefore, the effects of age, race, gender, education level, veteran status, and years of service as a police officer were examined and controlled to have a better sense of the relationship between ACEs and resilience among police officers. Several implications exist for future research based on the results of this study.

Beyond the standard limitations of issues such as sample size and sampling method used in this study, there is an opportunity to overhaul how the study is designed starting with the variables to be examined. In this study, basic demographic data were collected for use in the analysis. The selection of the primary predictor variable was selected based on anecdotal field observations by the researcher and then analyzed. However, by creating a new study whose results would be the basis for reproducing this hierarchical regression study, there could be greater understanding of the individual predictors of resilience. An example of this process would include using the results of a qualitative study to create predictor variables then used in a quantitative study. An example of such a study could utilize Q methodology, a subjective procedure used to explore existing perspectives on a topic that can potentially elicit a wide range of viewpoints surrounding a particular topic (Govender et al., 2020). A Q method study has elements of qualitative and quantitative design and uses factor analysis to better understand the meaning of participant's responses (Ramlo, 2016). By enlisting police officers as participants in a Q method study, researchers can gain a more accurate understanding of what police officers view as promotive or protective factors and those that can be considered risk factors. Results from such a study may then be applied in a quantitative methodology like the current research design having the potential to better identify factors that can be considered essential elements of overall resilience. This creates an opportunity to be more intentional in the creation of predictor variables to be measured rather than relying only on limited research or anecdotal observations.

Additional research implications could include studies on the relationships between emotional regulation, specific promotive factors, and resilience levels to determine the strength and direction of any such relationships. Moreover, there is interesting potential in the study of police officers who are veterans to gain greater insight into the predictive ability of specific qualities of veterans. Veteran status was not statistically significant in this study; however, in future studies of a sample that included police officers who were all veterans, there is a potential for deeper understanding of any promotive factors or additional risk factors that may be predictors of resilience.

Next, the use of a similarly structured design but with slightly different survey instruments may improve reliability of the results in futures studies, particularly the use of the full Connor-Davidson Resilience Scale and an alternate version of the ACEs questionnaire. This study utilized the CD-RISC-10, a ten-question version of the full CD-RISC-25, which is a 25-question survey instrument. While the CD-RISC-10 shows good psychometric properties, utilization of the full CD-RISC-25 may provide more reliable resilience scores of the participants. Additionally, the use of the original ACEs questionnaire may not give a complete picture of a person's ACEs exposure. The use of the Expanded Adverse Childhood Experiences questionnaire (sometimes referred to as the community-level ACEs) may provide greater reliability of a participant's actual ACEs exposure through the inclusion of community-level experiences such as bullying, exposure to foster care system, discrimination, and vicarious traumatization through witnessing of violent acts.

The current study seemed to lead to more questions that necessitate further inquiry. This study was intended as a stepping-off point to explore and examine the individual components of resilience and how their interaction can be observed and measured. The results of this study

showed that ACEs scores are a statistically significant predictor of resilience scores in this sample. However, none of the other predictor variable seemed to show any significance even though it was logical to believe there would possibly be a moderating effect of veteran status and years of police service. Similarly, use of other predictor variables, such as emotional regulation, through the conduct of additional studies could then inform the design of future studies to gain better insight into the interactions between predictor variables and their role in resilience in police officer population.

Limitations of the Study

Several limitations must be considered related to the data collection and analysis in this study. First, the correlational design of the proposed study may conclude the relationship between resilience and ACEs among police officers, while it will not establish causality. Next, I did not conduct a latent class analysis of the ACE questionnaire responses which is done for the purposes of developing the specific typology of an ACEs profile. Latent class analysis is a statistical method used to identify unobserved subgroups within a population (Nuylund-Gibson & Young Choi, 2018; Porcu & Giambona, 2017; Weller et al., 2020). According to Weller et al. (2020) the underlying assumption is that membership in unobserved classes may explain patterns of scores across survey questions or scales. Latent class analysis has been used in previous studies of ACEs exposure for the purpose of classifying combinations of ACEs categories to predict certain outcomes in adults (Brown et al., 2019; Shin et al., 2018). The purpose of this study is not to determine classes of ACEs, but rather to determine if ACEs exposure, in its totality, plays a role in resilience levels in police officers. This is in keeping with Rutter's (1987) *challenge model* of resilience theory that focuses on *amounts* of exposure rather than *specific*

classes of exposure. Future studies may be informed by the results of this study and the conduct of a latent class analysis may be appropriate at that time.

Another limitation of this study is its generalization to police officers and not the larger general population. Even then, the participant group for this study overwhelmingly identified as white, cisgendered males making it difficult to generalize the results to all police officers. Similarly, the use of recruitment through electronic mail, convenience sampling, and reliance on police officers to take the time to respond to the survey created a bias preventing potential respondents from participating due to lack of knowledge of the study or inability to participate (selection bias). The selection bias present in this study was a possible cause of other limitations. The size of the sample is a limiting factor in this generalization of this study and future research will necessitate larger sample sizes to increase confidence in the results of the analysis. The race and gender identification of the participants necessitates a more intentional effort to increase the diversity of the sample (diverse in racial and gender identities). Additionally, the participants recruited using this convenience sampling have the potential to have greater levels of self-awareness thereby impacting the roles of the variables used for analysis in this study. These limitations reduce the confidence in generalizing the findings beyond the sample population. Furthermore, the ACE-Q is a self-report instrument that relies on the correct recollection of childhood trauma and if not accurately recalled, may result in inaccurate responses compared to actual experience (recall bias). Also, due to the sensitive nature of the questions, some respondents may not have been willing to fully disclose their experiences and intentionally respond in a manner that is not congruent with their experience (response bias). Additionally, the design of this study focused primarily on one possible variable of significance: ACEs scores. It did not include analysis of promotive or protective factors although there were several possible

promotive factors collected in the demographic data that were not analyzed (optimism, use of humor, spirituality, amounts of exercise, etc.). Literature suggests that promotive or protective factors may offset risk factors (Zimmerman, 2013) such as ACEs scores; however, the individual promotive factors such as the ability of emotional regulation, self-efficacy, family support, or self-esteem were not a part of the analysis of this study. The limitations of this study; however, create opportunities for future research implications.

CHAPTER SIX

Manuscript

The Role of Adverse Childhood Experiences on Resilience in Police Officers

Abstract

Police officers are subject to a variety of stressors not only from job-related events resulting from direct or vicarious trauma exposure (Andersen & Papazoglou, 2014; Brown et al., 1999; Iversen et al., 2008) but also from family and personal concerns (Burke, 1998; Page & Jacobs, 2011), and administrative pressures originating from within their own agencies (Violanti et al., 2018; White et al., 2016). Prior to their careers as police officers, individuals may also be exposed to traumatic events early in life. Adverse Childhood Experiences (ACEs) are described as negative events related to emotional, physical, or sexual abuse or neglect, exposure to domestic violence or substance abuse, or environments where mental health problems, or incarceration are part of every-day life (McRae et al., 2021; Molina & Whittaker, 2022; Montgomery et al., 2013). ACEs exposure, combined with the exposure to stressors from police work, may lead to negative consequences for police officers in their professional careers and personal lives. Recently, researchers have started to shift the focus from detrimental factors that influence police officer behaviors or wellbeing to a more positive focus on how to improve overall wellbeing of police officers (Phythian et al., 2022) including the concept of resilience and how it impacts officer's wellness (Romosiou et al., 2019). Current literature focuses on resilience as a process or function (Bonanno, 2012) but there is a gap in the literature about the individual components that comprise resilience. The purpose of this study was to investigate the components of resilience and explore the role of ACEs on resilience in police officers. In this study, I used a utilized a non-experimental, correlational approach which allows for description and measurement of the association between two or more variables and is particularly suited for hierarchical regression (Creswell & Creswell, 2018), using self-report data collection instruments. The results indicated a statistically significant negative relationship between ACEs

scores and resilience scores in the sample. The findings of this study can inform and influence police agency policy and improve police officer training to increase wellness in officers while informing and influencing counselor education programs and practicing counselors working with police officers.

Keywords: adverse childhood experiences, resilience, police officers

The Role of Adverse Childhood Experiences on Resilience in Police Officers

Introduction

Public safety personnel (PSPs) are at the forefront of community safety and regularly tasked with responsibility of managing critical incidents (Anderson et al., 2020; Di Nota et al., 2021). PSPs include firefighters, paramedics, police officers, and emergency dispatchers (Anderson et al., 2020; Di Nota et al., 2021; D. P. Gross et al., 2021). PSPs can also include Frontline Healthcare Professionals (FHP) such as doctors, nurses, social workers, and counselors. The responsibility taken on by PSPs can expose them to situations of physical violence against themselves, witnessing of violence against others, fatal accidents, or other traumatic events (Anderson et al., 2020). These potentially psychologically traumatic events (PPTEs) can increase risk for development of post-traumatic stress injuries (PTSIs) that potentially lead to higher levels of anxiety and depression in PSPs than are seen in the general population (Stelnicki et al., 2021). Anderson et al (2022) suggest that PSP show greater levels of suicidal ideation and attempts, higher levels of anxiety and depression, and greater reliance on maladaptive coping skills than the general population. Research suggests that PSPs and FHPs that suffer from PTSIs during their employment have a higher risk of not being able to return to pre-injury levels (Jones et al., 2020, 2022) and that symptoms associated with PTSIs can negatively impact daily function and work ability in PSPs (D. P. Gross et al., 2021).

As a subset of PSPs, police officers are subject to a variety of stressors not only from job-related events resulting in direct or vicarious trauma exposure (Andersen & Papazoglou, 2014; Brown et al., 1999; Iversen et al., 2008) but also from family and personal concerns (Burke, 1998; Page & Jacobs, 2011), and administrative pressures originating from within their own agencies (Violantiet al., 2018; White et al., 2016). These types of stressors are divided into two

groups, operational stressors, and organizational stressors (Queirós et al., 2020). Operational stressors, salient to almost all police departments, include poor community relations, equipment and manpower issues, shift changes or ambiguity of roles (McCreary & Thompson, 2006). Organizational stressors can include poor perceived support from supervisors, burdensome policies and administrative functions, top-down leadership, and lack of consistency in operations between police commands (Birze et al., 2021; Queirós et al., 2020). These organizational stressors are linked to physical health concerns (fatigue, illness, and injury) like operational stressors (McCreary & Thompson, 2006) and performance issues including use of excessive force, poor decision making (Queirós et al., 2020).

Police and Mental Health Interventions

The stressors that are experienced by police officers as a condition of their employment are unique to their population and have become a basis for police culture that has historically avoided mental health treatment (van Gelderen et al., 2011). Constant exposure to trauma has been shown to have a negative impact on the physiological and psychological wellbeing of police officers (Violanti et al., 2018). Additionally, police officers have a higher risk for experiencing substance use disorder, anxiety, depression, and post-traumatic stress disorder (PTSD) than the general population (Bell & Eski, 2016; Lane et al., 2022; White et al., 2016). Still, research that focuses specifically on police officers receiving mental health services is somewhat scarce compared to the volumes of research conducted about how police officers can better interact with those suffering from mental health crises (White et al., 2016). According to Lane et al (2022), the reasons why police officers fail to seek mental health treatment are embedded in the culture of police work as well as the overall societal stigma still associated with seeking mental health services. Policing culture is one of engrained suspicion of those not “on

the job" a term commonly used by police officers to identify how long they have been actively employed as police officers (White et al., 2016, p.142). This suspicion is part of a larger culture where officers are expected to maintain physical and mental strength in the face of constant challenges of police work such as threat of assaults, exposure to violence and death, or the violent deaths of co-workers, which translates to a close-knit and closed off cultural group (Lane et al., 2022). Bell and Eski (2016) suggest that lack of understanding of the function of mental health services and lack of knowledge about confidentiality can also play a part in why police officers do not seek treatment.

Additionally, the need for mental health training and resource availability has not been prioritized by law enforcement leadership which can then perpetuate a problem that can grow within police organizations (Blumberg et al., 2019; Papazoglou et al., 2019) without dedication of adequate resources. Interventions such as professional counseling, peer-counseling, and education have shown increases in overall wellness for police officers (Page & Jacobs, 2011); however, resources dedicated to these interventions have not been historically allocated by the leadership in law enforcement agencies. This lack of resources has been associated with greater levels of suicide and other stress effects of police work (Weltman et al., 2014). The combination of these factors can lead to higher-than-average rates of unhealthy behaviors such as alcohol abuse or domestic assaults (McCormack & Riley, 2016) and higher rates of suicide (Mishara & Fortin, 2022). Previous studies of officer wellness have primarily focused on the negative aspects of officer behavior and detrimental impacts of chronic exposure to stress and trauma (Kaplan et al., 2017).

Recently, researchers have started to shift the focus from detrimental factors that influence police officer behaviors or wellbeing to a more positive focus on how to improve

overall wellbeing of police officers (Phythian et al., 2022). These studies include investigations into the concept of resilience and how it impacts officer's wellness (Romosiou et al., 2019) and how resilience development can increase officer performance (Arnetz et al., 2008). According to Southwick et al. (2014), resilience can be defined in several ways but is commonly understood to mean adaptive, positive functioning over time after experiencing a trauma. Kim-Cohen (2007) describes resilience as the positive adaptation of a person after exposure to adversity and even suggests that it is not static but rather a dynamic construct. Previous research focused on resilience has included sources of resilience including biological, social, or psychological elements (Kim-Cohen, 2007) or behaviors associated with resilient individuals particularly focusing on groups other than police officers such as children from troubled families (Pooley & Cohen, 2012) or persons working in the medical field (Grafton et al., 2010). Police officers who display behaviors that are associated with resilience (e.g., recognizing that bad things sometimes happen, or maintaining an optimistic attitude) have greater levels of wellbeing and resistance to the constant trauma and stress associated with policework (Violanti, 2006) while the etiology of resilience in police officers still has not been thoroughly examined (Galatzer-Levy et al., 2013). Currently, there is a shortage of knowledge and understanding of the variables that comprise resilience specifically focusing on police officers.

Several types of adversity or trauma fall into the categories measured as part of the seminal study of Adverse Childhood Experiences (ACEs) by Felitti et al (1998). Research on ACEs has shown to have profound negative impacts on mental and physical wellbeing (Anda et al., 2006; Felitti et al., 1998; Petruccelli et al., 2019; Violanti et al., 2021). ACEs are potentially traumatic events that an individual may be exposed to during childhood (Parnes & Schwartz, 2022) and can include emotional, sexual, and physical abuse, emotional and physical neglect,

and other household dysfunction such as substance use disorders, incarceration, and family separation (Augsburger et al., 2015; Bellis et al., 2014; Petruccelli et al., 2019). Exposure to ACEs has shown to have deleterious health-related effects including higher rates of cardiovascular disease, diabetes, liver disease, and other serious medical conditions (Anda et al., 2006; Dong et al., 2003; Felitti et al., 1998; Korotana et al., 2016). Additionally, ACEs exposure has been connected to higher rates of mental health disorders in adults such as anxiety, depression, substance use disorder, schizophrenia, and higher rates of suicide attempts (Belfry et al., 2022; Liu et al., 2021; Nagata et al., 2023; Parnes & Schwartz, 2022).

The Current Study

Despite previous research on police officers and mental health, there is very little research that identifies connections between mental health in police officers and life events such as ACEs (Violanti et al., 2021). Furthermore, much of the current literature focuses on police mental health through a pathological lens where the deleterious effects of trauma and stress exposure are emphasized rather than a strength-based emphasis (Sigad, 2021). Research on resilience in police officers suggests that officers who display traits associated with being resilient perform better at job tasks, have better health outcomes, and have better decision-making ability (Violanti et al., 2014). There is a gap that exists in understanding the components of resilience, especially in police officers. Through better understanding of the components of resilience in police officers, counselor educators may be informed as to how better prepare counselors in training to provide counseling services with this unique and deserving population. Furthermore, an understanding of the components of resilience in police officers may inform police administrators on best practices for ensuring that resilience training is incorporated into police academies and regular in-service training as well as ensuring services for police officers

who succumb to the effects of operational and organizational stress as well as acute traumatic events. In this current study, I intend to examine the components of resilience, specifically ACEs, and its role in predicting resilience in police officers.

Method

In this study, I wanted to gain a better understanding of the individual variables that are contained within the measures of resilience in a specific population – police officers. Following the study's conceptual framework and purpose, I implemented a quantitative, non-experimental research design. More specifically, I utilized a correlational approach which allows for description and measurement of the association between two or more variables and is particularly suited for hierarchical regression (Creswell & Creswell, 2018), using self-report data collection instruments.

Participants in this study included actively serving and formerly serving police officers. In May 2021, there were approximately 665,380 actively serving law enforcement officers (*Occupational Employment and Wages: 33-3051, Police and Sheriff's Patrol Officers*, 2021). It is impractical to survey the entire population of police officers; therefore, a representative sample was recruited through convenience sampling for this study. Despite being the least rigorous of the sampling types (Creswell & Creswell, 2018), this sampling method is the most suitable means of gathering the target participants. Sending email invitations through police agencies and other law enforcement organizations that have access to large numbers of actively serving police officers, I intended to allow police officers to remain anonymous in their responses and remove any coercion to participate from the process. Additionally, potential participants were invited through use of social media platforms. Police officers tend to have a mistrust of their organizations, and as a population, they are skeptical to reveal accurate information about

themselves for fear of it being used against them in an administrative manner (Shane, 2010). The fact that all participants were actively serving, or formerly serving, police officers infers that all participants are adult (age 18 or over) and able to provide informed consent to participate in the study. In the current study, I used a demographic information form, the Adverse Childhood Experiences Questionnaire (ACE-Q), the Connor-Davidson Resilience Scale 10 (CD-RISC-10). The demographic information form included questions on age, race, gender identity, education level, veteran status, and years of active police service of the participants. Additionally, information of police department size, a categorical variable, were collected in the demographic data for descriptive purposes but not analyzed for the current study. In this study, I attempted to identify specific individual factors that are present in resilient police officers.

The ACE-Q measures three overall domains including physical, sexual, and emotional abuse, physical and emotional neglect, and household dysfunction (Anda et al., 2003; Dong et al., 2004). According to Mei et al (2022), the use of the three subscales (i.e., abuse, neglect, and household dysfunction) are limited in range, so the total ACE score should be used as an evaluation tool when assessing exposure to ACEs. The ACE-Q has also shown good-to-excellent test-retest validity with Kappa values between .65 and .85 (Dube et al., 2004). Goldenson et al. (2021) reported acceptable psychometric properties of the ACE-Q for test-retest reliability with Kappa values between .66 and .77. However, Zarse et al. (2019), cautioned researchers with the information that the ACE-Q does not measure intensity, frequency, or duration of trauma and therefore cannot be specific about which domains are the most impactful to the individual. Zarse et al. do suggest that the ACE-Q is uniquely productive in revealing a relationship by showing the convergence of high ACEs scores (≥4) with increasingly poor health outcomes. Dong et al (2004) also suggest that ACE-Q scoring remains strong as a predictive measure of adult mental

and physical illness despite the critiques of the instrument's inclusion of multiple trauma criteria within individual domains.

Developed by Connor and Davidson (2003), the CD-RISC-10 is a very widely used scale of psychological resilience with robust psychometric properties (Green et al., 2014; Kuiper et al., 2019; Martinez et al., 2021). The 10-item self-report questionnaire designed to assess overall resilience using a 5-point Likert scale ranging from 0 (Not at all) through 4 (Nearly true all the time). The instrument uses a 0 to 40-point score with higher scores indicating greater levels of resilience (Madewell & Ponce-Garcia, 2016). Studies of the CD-RISC-10 have shown Cronbach's α .92 and ICC of .87 (n=11,022; Jung et al., 2021), Cronbach's α .90 and ICC of .90 (n=74; Kuiper et al., 2019), and Cronbach's α .87 and ICC of .90 (n=397; Martinez et al., 2021).

Once IRB approval was granted, invitations to participate were electronically mailed to a list of Fraternal Order of Police (FOP) Chapter Presidents. The FOP is a national organization with chapters in many local areas that support the interests of police officers including legislative programs, employee representation, and community involvement. The FOP currently claims membership of 364,000 in 2,200 local chapters. Sending invitations to participate to FOP chapters rather than through the offices of Sheriff's or Police Chiefs further reinforced to police officers the anonymous nature of the current study. Invitations to participate were also sent via social media sites.

Data Analysis

Hierarchical Regression was conducted using data collected from the questionnaires and analyses completed using the Statistical Package for the Social Sciences (SPSS) Version 29.0.2.0. According to Petrocelli (2003), hierarchical regression is used in testing theoretical assumptions when examining the relationships between criterion and predictor variables.

Hierarchical regression is also used when analyzing the amount of variance in a dependent variable when more than one predictor variable is being tested and while entering the predictor variables in multiple blocks to control for their effects during analysis (Ross & Wilson, 2017).

The current study is designed to determine the role of ACEs exposure on resilience in police officers when holding steady for the other predictor variables. I entered eight variables to the analysis; one criterion variable and seven predictor variables; one dichotomous, three categorical, and four continuous. The criterion variable was a continuous measure of resilience using the CD-RISC-10. Predictor variables were age (continuous), race (categorical; Asian/Pacific Islander, Black, Hispanic/Latin X, Multiracial, and White), gender identity (categorical; Female, Male, Non-binary, and Transgender), level of education (categorical; General Equivalence Degree, High School Diploma, Bachelor's Degree, Master's Degree or higher), veteran status (dichotomous; military service at any time/still serving and no military service at any time), years of active service as a police officer (continuous), and total ACEs score taken from the ACE-Q (continuous).

For predictor variables race, gender identity, and education level, dummy coding was used. Additionally, dummy coding of the ACEs variable was used in a secondary analysis of ACEs scores and is discussed in the results. Veteran status was a dichotomous variable and was not coded. After dummy coding, hierarchical regression was conducted with the seven predictor variables in blocks. I entered resilience as the dependent variable of concern in Block 1, then entered age, the race dummy variables, the gender identity dummy variables, and the education level dummy variables to control for their effects. In Block 2, I entered veteran status and years of active police service. These variables were entered separately into Block 2 due to their

potential moderating effects which needed to be controlled during analysis. Finally, in Block 3, I entered participant's ACEs score.

Results

Demographic information collected included gender identity, race, age, and education level. Additional demographic data included veteran status and years of service in police work. The sample included 101 (81.45%) respondents identifying as male and 23 (18.54%) identifying as female. Despite the inclusion of four additional options for gender identity (non-binary, transgender, prefer not to say, other), none of those options were selected as responses by any of the participants. The racial profile of the sample mostly identified as White (86.29%). Respondents of color included eight Black (6.45%), four Hispanic/LatinX (3.22%), four Multiracial (3.22%), and one Asian/Pacific Islander (.80%). The age of the participants ranged from 22 years of age to 73 years of age with an average age of 48 years old (SD = 10.52). The reported education levels of the participants ranged from general equivalency degree (n=4, 3.22%) through master's degree or higher (n=23, 18.54%) with over half of participants having bachelor's degrees (n=66, 53.22%). The years of police service reported by participants ranged from one year up to 48 years of service. The average time of service reported by participants was 20 years (SD = 9.28).The veteran status of participants was reported as either having served in the military/still serving in the military or no military service at all. Of the 124 participants who responded, 51 (41.13%) reported either having served in the military or still serving the military at the time of their response. The rest of the participants (n=73, 58.87%) reported having no military service. Demographic information on department size was also collected. Although not analyzed for this study, it may prove informative in future studies. Participants reported serving

in departments from 1-69 officers (20.96%), 70-99 officers (14.51%), 100-499 officers (20.96%), 500-999 officers (33.87%), and Over 1000 officers (9.67%).

Data Screening

Prior to analysis, the data were screened for assumptions required for hierarchical regression. Using the Statistical Package for the Social Sciences (SPSS) Version 29.0.2.0, the first assumption tested was for normality which requires normal distribution of the dependent variable. For this assumption, tests for skewness, kurtosis, and the Shapiro-Wilk were examined. The dependent variable was negatively skewed with a value of -.267, while kurtosis was -.326, indicating mesokurtotic distribution of the dependent variable. For the dependent variable, both skewness and kurtosis values were within the acceptable limits, indicating normal distribution of the dependent variable. The dependent variable also had a Shapiro-Wilk value of p=.152, indicating a non-statistically significant value. When Shapiro-Wilk values are *not* statistically significant, the normal distribution of the variable is assumed to be true. ACES Score showed a skewness of .950. Skewness of the ACEs score is consistent with current literature. Madigan et al (2023) reported that ACEs scores are positively skewed with 84% of responded in their meta-analysis having ACEs scores <=3. In this sample, 75.8% of the participants reported ACEs scores <=3 (n=94) and 24.2% reported ACEs scores >=4 (n=30). Next, multicollinearity assumption was tested. The results showed that there was no evidence of multicollinearity among the dependent and the predictor variables except Age and Years of Service which showed a value of .761. Still, the observed Variance Inflation Factor for Age and Years of Service never exceeded 2.58 and 2.47, respectively, indicating that the level of collinearity between the variables did not warrant correction for this model. Homoscedasticity assumption, a measure of the homogeneity of variances in the data, was checked showing most values between plus or

minus two standard deviations appearing to be consistent with homoscedasticity. Additionally, the Durbin-Watson value was calculated to test for autocorrelation. The Durbin-Watson value for this data set was calculated at 1.84. Using the Durbin-Watson significance table with *n*=124 and seven predictor variables, the lower limit of this value is 1.400 and the upper limit is 1.693. The Durbin-Watson value of this data set is 1.84 which is above the upper limit and indicates that there is no autocollinearity present in the data. Linearity of the data set, a necessary assumption in hierarchical regression describing the relationship between the dependent variable and the independent variables in the model, was examined. There was some slight deviation from the expected regression line, but the data generally followed a linear shape. Data were assessed for multivariate outliers using a Mahalanobis Distance test. No multivariate outliers were identified.

In addition to demographics questions, two main validated instruments [i.e., the Adverse Childhood Experiences Questionnaire (ACES-Q); the Connor-Davidson Resilience Scale-10 (CD-RISC-10)] were used to run a Hierarchical Regression utilizing the Statistical Package for the Social Sciences (SPSS) Version 29.0.2.0. The model contained three blocks. Block 1, consisting of demographic data of age, race identity, gender identity, and education level, did not show any statistical significance (R^2 change = .038, p = .321). Similarly, Block 2, including veteran status and years of police service, did not show any significant change in the dependent variable (R^2 change = .017, p = .345), either. Of the three blocks, only Block 3 with the ACEs scores showed statistical significance (R^2 change = .067, p = .004). β also indicated a negative significant association (-.268) between ACEs and resilience scores. In other words, as police officers' ACEs scores increased, their resilience scores decreased.

At this point in the analysis, the previously observed skewness of the ACEs scores prompted me to do a secondary analysis of the regression model to determine the possible effects

of skewness on the model. Prior to conducting the secondary analysis, the ACEs scores were recoded. All values <=3 were recoded as 0, and all values >=4 were recoded as 1. ACEs scores between 3 and 4 were selected as the dividing line because research suggests that the actual number of types of exposure (1 exposure versus ≥4 exposures) were more impactful than the specific type of exposure (physical versus emotional; Molina & Whittaker, 2022; Salmon et al., 2023; Xue et al., 2017). Additionally, individuals with an ACEs score of 4 or higher are at elevated risks for mental, physical, and stress related problems (Crouch et al., 2018). After dummy coding of the ACEs scores was completed, the model was analyzed again in the same order as the original analysis. As in the original analysis, Blocks 1 and 2 were not statistically significant. Block 3, which included the recoded ACEs score, was also *not* statistically significant in this model analysis indicating that the original linear presentation of the ACEs scores predicted a statistically significant decrease in resilience scores.

Discussion

This study analyzed data using hierarchical regression to determine the predictive ability of exposure to adverse childhood experiences on resilience in police officers while controlling for the effects of certain demographic variables. The first block in the model included resilience as the dependent variable while age, racial identity, gender identity, and education level were predictor variables. None of these demographic factors appeared to have a significant role in the prediction of resilience scores supporting more current literature than earlier studies of resilience. Early literature in resilience studies referenced age, gender, demographic status, genetic history, and exposure to stressful life events as potential risk factors that impacted resilience (Barmezy & Masten, 1986). Focusing mainly on the deleterious effects to resilience, this information was followed by Masten et al.'s (1990) addition of mother's educational achievement as another

potential risk factor to overall psychological resilience. As their focus switched to examination of promotive factors of resilience, researchers rejected many of these demographic factors' influence (Chicchetti & Garmezy, 1993) and more recently have discussed resilience as a concept (Aburn et al., 2016) and not because of the totality of independent variables. Thus, this study's results with demographic factors of age, racial identity, gender identity, and education level of the participants are on par with the current literature's emphasis. More specifically, these demographic factors' lack of ability to predict resilience in the current study could possibly be related to the constantly changing determinants of resilience as persons interact with their environments (Masten, 2014) as well as their cultural environment's impact on how trauma is viewed, influencing the levels of resilience (Leckman, 2013). For example, police officers often serve in environments where exposure to trauma is just 'part of the job' and may develop protective factors that make them resistant to trauma's negative impact as may be expected by their work environment. On the other hand, while previous literature references some social and biological determinants of resilience (e.g., age, gender, education levels), there was no empirical research dedicated to examining the effects of those determinants on resilience levels. Rather, they were combined as part of a holistic view of how resilience was described in broad terms. Thus, one purpose of including those variables in the current study was to initiate a closer examination of their *potential* impact on resilience scores, which showed no statistical significance for this sample.

Controlling age, racial identity, gender identity, and education level in the first block, the second block of the model examined the predictive ability of police officers' veteran status and years of police service on resilience scores. Yielding *no* statistical significance, veteran status and years of police service did not appear to have a role in the prediction of resilience scores

among the current sample of the police officers, either. While veteran status and years of active police service were collected as demographic data and were not the primary focus of the research question, there was an *informed expectation* that the stress inoculation received during these experiences could play a role in resilience scores of the police officers. Resilience theories informs veteran status and years of police service as possible predictors of overall resilience. Rutter (1987) introduced the *challenge model* of resiliency and stated that inoculation through exposure to stress produced better outcomes than no exposure at all. Additionally, the *challenge model* described relationships between risk factors and outcome variables noting that exposure to risk factors can potentially activate protective factors thereby reducing the impact of risk (Evans et al., 2010).

Police departments historically recruit and hire military veterans because of many parallel qualities between military service and police work (Patterson, 2002). According to Gau et al. (2021), military service can act as a protective factor for those who have served, as ideals promoted in military service (e.g., accountability, discipline, attention to detail) could be a foundation for increased resilience that serves military veterans who transition to police work (Shernock, 2016). The similarity between the police service and military service is also a factor for military veterans to transition to active police work. For example, the initial training experiences are designed to be stressful (military bootcamp or police academies) and expose participants to various stressors thereby expecting to provide some inoculation to their negative impacts. Additionally, the exposure to trauma and stress in both military service and police service have potential parallels as do the environments where both types of service occur (e.g., shift work, physically uncomfortable environments, time away from family, sleep deprivation, high levels of comradery, and exposure to direct physical harm). Chronic exposure may lead to

possible burnout in some veterans that could potentially decrease resilience, or it may also act as a protective factor for other veterans potentially mitigating the influence of risk factors such as ACEs exposure. Therefore, despite not being the focus of the study, the lack of associations between veteran status and years of police service were surprising. While the relatively smaller number of veterans in the current sample (n = 41) may be a reason for this outcome, veterans in the current study may have already possessed other protective factors (e.g., self-efficacy, optimism, a support network) that could be embedded within the veteran experience but were not analyzed in this study. Similarly, police officers' years of active police service may also be related to other protective factors in place that were not analyzed in the current study. For example, a better educated work force of officers with fewer years of service may be coming into police work at a time when there is more discussion about overall wellbeing of officers (although many wellness programs still struggle for acceptance). This may be due to differences in generational perspectives of the importance of individual mental health and wellbeing and the emphasis placed on those qualities of life by younger generations (Generation Z and Millennials compared to Generation X).

Current literature suggests that the *number* of exposures to ACEs can have more significant impact than the *types* of exposures even though some research suggests that exposure should be viewed through the lens of a complex series of experiences (Oshri et al., 2019). While opinions vary on the importance of number versus type of exposures, researchers report persons with exposure to *four or more* adverse childhood experiences were more likely to have negative outcomes than those who experienced *three or less* adverse childhood experiences (Molina & Whittaker, 2022; Salmon et al., 2023; Xue et al., 2017). Additionally, researchers suggest that those with exposure to four or more categories of ACEs have higher rates of major depressive

disorder and attachment related disorders (Bellis et al., 2014). It is possible that as officer's ACEs increases, it can create situations where resilience levels could decrease or would be limited without the influence of protective factors to offset the negative effects of the adverse experiences. Some of the protective factors found in research include support networks for children as they experience ACEs exposure (Bellis et al., 2017) and positive relationships with parents or caregivers (Woods-Jaeger et al., 2018). None of these factors were part of the focus in this study, so their possible impacts on police officers' resilience scores cannot be determined. With the observed data skewed toward lower ACEs scores, a secondary analysis of the 3rd block with recoded ACEs scores was performed to test the influence of the number of exposures to ACEs in the current dataset. There was no statistical significance observed using the recoded ACEs scores.

The results of this study with a connection between higher ACEs scores and decreasing resilience scores are also in keeping with other research (Bethell et al., 2016; Samson et al. 2019). Rutter (1987) posited that inoculation through exposure to risk mechanisms produced better outcomes than no exposure at all, while Zimmerman et al. (2013) cautioned that the exposure to the risk mechanism be sufficient to promote development of coping skills but not so taxing that it overcame one's ability to cope. On the other hand, researchers reported the role of ACEs scores as a predictor of negative outcomes such as health problems, mental health concerns, or substance abuse problems (Salmon et al., 2023; Xue et al., 2017). Yet, research focus was placed on mitigating the negative, long-term effects of ACEs exposure rather than examining ACEs as a specific variable of resilience scores. In this study of police officers, the observed results between ACEs scores and resilience scores seemed to indicate that regardless of the prior inoculation (veteran status), resilience scores decreased as ACEs scores increased.

There is a scarcity of research on the role of ACEs scores on resilience particularly in public safety workers (to include police officers, firefighters, and paramedics); thus, the current study results fill that gap in the literature briefly. There is also a gap in the literature where the actual *components* of resilience are explored and little, if any, information on the quantitative analysis of the predictors of resilience regardless of promotive factors or risk factors. Research on organizational stress' influence on resilience in police officers has also been largely disregarded (Doyle et al., 2021), despite researchers' reports on organizational stress having negative impacts on overall wellbeing of officers (Papazoglou & Andersen, 2014). According to Chan and Anderson (2020), growing evidence suggests that organizational stress can cause anxiety, depression, post-traumatic stress symptoms, and substance abuse which are like the symptoms in persons exposed to ACEs. The influence of organizational stress on resilience was not part of this study but seems to be critical for future studies.

In brief, this study is intended to be a stepping off point for research into the specific variables that comprise resilience. I believe this study does show that further research can eventually produce a model that can be used to accurately predict resilience in police officers as evidenced by the statistically significant values of the ACEs scores on resilience scores. The main result of the current study, the negative relationship between ACEs scores and resilience scores, provides insight into the beginnings of such a model.

Implications of the Study

Several findings within this study have implications for counselor education, practicing counselors, and law enforcement agencies. The significance of ACEs scores observed in this study are an important implication for counselor education. The results of this study indicated a negative relationship between ACEs scores and resilience levels. For counselors in training that

may work with police officers in the future, addressing their immediate concerns may require a more intentional approach that starts with holistic assessments that may include administering an ACEs questionnaire. Understanding the influence ACEs can have on resilience levels can allow opportunities to practice counseling skills and use of assessment instruments that have application across racial, gender, and generational distinctions. Exposure to ACEs as a risk factor that may reduce resilience can also inform discussions on the impact of complex trauma in future clients. As counselors in training are learning and practicing to think of counseling from multiple perspectives based on the client's needs, an assessment of more than one type of trauma may be necessary.

In this study, ACEs did not have any significance in the model when the scores were recoded into <=3 and >=4. This lack of significance may be attributed to the observed skew of ACEs scores toward values <=3 and consistent with current literature reporting ACEs scores of >=4 produce higher levels of emotional and physical problems (Bellis et al., 2014). Any discussion of ACEs scores in counselor education training should reinforce that ACEs exposure is not always a significant detriment to the client and requires additional assessment prior to and during the therapeutic engagement between counselors and clients. Another implication for counselor education programs includes understanding the CD-RISC-10 as a possible tool in the assessment and treatment planning for police officer clients as part of a larger strengths-based practice. Discussions about strength-based approaches can naturally lead to interest and better understanding of other measures of resilience that may also be useful in working with police officers or other clients. Counselor training programs and affiliated counselor educators could also use the results of the current study to improve cultural competence of counselor trainees for future work with police officers as a population. Since the high-profile police-involved deaths of

George Floyd, Breonna Taylor, and Laquan McDonald, community sentiment toward police officers has become increasingly hostile. Nationwide protests and anti-police sentiment have created an additional stressor for officers who chose to remain in the profession as evidenced by decreasing recruitment of new police officers and increased lawsuits against officers and departments, while many police officers choose to leave the profession completely (Varker et al., 2022).

Some of the implications discussed for counselor educators and counselors in training can also translate to practicing counselors working with police officer clients. Some implications include a greater understanding of the complex trauma associated with higher aces ACEs exposure combined with trauma exposure from work experiences, becoming familiar with ACEs and resilience questionnaires as part of assessment and treatment planning, and considerations of the impact of ACEs as a risk factor in resilience levels. With police officers as clients, counselors can explore the impact of exposure to adverse childhood experiences as part of a holistic treatment planning that can also guide counselors in their understanding of how these exposures are combined with the unique job-related stressors experienced by police officers. In addition to assessing the impact of work-related exposure to violence and acute trauma, counselors can also integrate organizational stressors and ACEs exposure to gain a more complete picture of the police officer client. Using a strengths-based approach to treatment, counselors may be able to look for specific indicators that may act as promotive or protective factors to offset the negative role that adverse childhood experiences can play in overall well-being of police officer clients. Some of these promotive or protective factors could include self-efficacy, family support, or self-esteem. There is also a potential for emotional regulation to be examined by counselors as a possible promotive factor.

What may have a greater impact for the practicing counselor is the *idea* of the study. By that, I mean that this study was designed by an actively serving police officer (and police chief) for the benefit of police officers and potentially other public safety professionals, without a financial or political motivation. For police officer clients, this may be a critical element in establishment of rapport through credibility in the counseling relationship. Current literature on police officers highlights the skepticism of officers when working with persons who themselves are not in law enforcement (Papazoglou & Anderson, 2014).

Additionally, the significance of ACEs scores on resilience levels offers another avenue for practicing counselors to broach the discussion of complex trauma with their officer clients. By their nature, police officers are persons who serve others while denying their own needs and concerns often downplaying their own negative experiences (Sollie et al., 2017)**.** The significance of the ACEs scores and their negative impact on resilience scores can highlight for clients that police officers are also individuals who can be impacted by their experiences and those experiences and alter their world view.

Implications for recruitment of police officers begins with the *lack of significance* of the demographic variables in the model. Any previously held beliefs by law enforcement recruiters, supervisors, or executives about the benefits of certain demographic qualities should be questioned as an implication of this study. Age, racial identity, gender identity, and education levels offered no predictive ability for individual officers to have greater levels of resilience. Additionally, and surprisingly, neither years of service nor veteran status had any predictive value on resilience levels in the sample. This seems to contradict traditional beliefs within police agencies that experience as a police officer creates an increased ability to resist the influence of trauma exposure that is part of police work. Recruitment of officers from other police agencies

(referred to as lateral recruitment) is a regularly used strategy to hire candidates who are believed to have qualities valued by police agencies without the time and expense of training a recruit with no prior police experience. Additionally, military veterans have been coveted by police recruiters as candidates for employment. This strategy can be observed in police recruitment strategies that prioritize job fairs at military installations to recruit potential candidates and the awarding of additional point scores on veteran's applications for police departments. Veterans are also expected to be better prepared for the stress and rigors of police work as a condition of their prior experiences in the military which presumably inoculate them to certain levels of stress. The results of this study did not support that belief as evidenced by the lack of statistical significance of veteran status and years of active police experience on resilience scores when controlling for other demographic variables in the model.

The results of this study indicated that ACEs exposure can negatively impact resilience levels. Collection of ACEs scores at the beginning of recruit training can allow for academy staff to identify individuals who may benefit from early counseling interventions, either through peer-counseling or professional counseling. The results of this study have implications for raising self-awareness of the impacts of ACEs on police recruits and young police officers and can inform lesson plans designed to help mitigate their effects on resilience through psychoeducation. Furthermore, the results of this study can inform annual training classes which are mandated as part of every law enforcement officer's scheduled recertification process. Training police officers on the negative effects of ACEs scores (and other types of stress or trauma exposure) can lead to increases in self-awareness which can lead to a decrease in stigma associated with receiving counseling services (a major hurdle for officers and police departments). Training can include the impact of exposure to trauma, chronic exposure to stress, and methods of building resilience

through promotion of protective factors. This has the potential to benefit police departments in the building of trust in communities (Gershon et al., 2008) they serve and makes sense financially. Police departments spend significant amounts of money to recruit, train, and equip police officers to do their jobs. Training effects of trauma and stress exposure and promotion of resilience can lead to better job performance (Andersen et al., 2015), decreased absenteeism (Semeijn et al., 2019), and increases in effective communication by officers (McCraty & Atkinson, 2012). This can translate into lower rates of turnover in police departments, creation and preservation of higher standards of performance, and decreases in the costs associated with officers who leave departments for stress related reasons.

Police officers are recruited from the general population. Madigan et al (2023) reported that ACEs are common among the general population with approximately 43% of the population exposed to between 1 and 3 ACEs, while 16% of the general population have exposure to 4 or more ACEs. This means that when departments recruit officer candidates from the general population, they are likely to hire someone with ACEs exposure which may have a negative impact on their resilience levels. Understanding this concept, police executives can create policies that mandate regular training and inform the development of programs within the department that specialize in the recognition and support of officers who may be experiencing problems related to trauma and stress exposure.

By understanding the impact of exposure to adverse childhood experiences, law enforcement leaders can better respond to officers who may experiences job related performance problems to include decreasing performance levels or behaviors that violate department policies.

Implications for Future Research

The purpose of this study was to investigate the relationship among factors that contribute to resilience. In this study, I examined how exposure to adverse childhood experiences (ACEs) may predict levels of resilience in police officers. The influence of some of the demographic factors could not be ignored in this relationship; therefore, the effects of age, race, gender, education level, veteran status, and years of service as a police officer were examined and controlled to have a better sense of the relationship between ACEs and resilience among police officers. Several implications exist for future research based on the results of this study.

Beyond the standard limitations of issues such as sample size and sampling method used in this study, there is an opportunity to overhaul how the study is designed starting with the variables to be examined. Starting with creation of a new study whose results would be the basis for reproducing this hierarchical regression study, there could be greater understanding of the individual predictors of resilience. An example of such a study could utilize Q methodology, a subjective procedure used to explore existing perspectives on a topic that can potentially elicit a wide range of viewpoints surrounding a particular topic (Govender et al., 2020). By enlisting police officers as participants in a Q method study, researchers can gain a more accurate understanding of what police officers view as promotive or protective factors and those that can be considered risk factors. Results from such a study may then be applied in a quantitative methodology like the current research design having the potential to better identify factors that can be considered essential elements of overall resilience. This creates an opportunity to be more intentional in the creation of predictor variables to be measured rather than relying only on limited research or anecdotal observations. Additional research implications could include studies on the relationships between emotional regulation, specific promotive factors, and resilience levels to determine the strength and direction of any such relationships. Moreover,

there is interesting potential in the study of police officers who are veterans to gain greater insight into the predictive ability of specific qualities of veterans. Veteran status was not statistically significant in this study; however, in future studies of a sample that included police officers who were all veterans, there is a potential for deeper understanding of any promotive factors or additional risk factors that may be predictors of resilience.

Next, the use of a similarly structured design but with slightly different survey instruments may improve reliability of the results in futures studies, particularly the use of the full Connor-Davidson Resilience Scale and an alternate version of the ACEs questionnaire. The use of the Expanded Adverse Childhood Experiences questionnaire (sometimes referred to as the community-level ACEs) may provide greater reliability of a participant's actual ACEs exposure through the inclusion of community-level experiences such as bullying, exposure to foster care system, discrimination, and vicarious traumatization through witnessing of violent acts.

Limitations of the Study

Several limitations must be considered related to the data collection and analysis in this study. First, the correlational design of the proposed study may conclude the relationship between resilience and ACEs among police officers, while it will not establish causality. Next, I did not conduct a latent class analysis of the ACE questionnaire responses which is done for the purposes of developing the specific typology of an ACEs profile. Latent class analysis is a statistical method used to identify unobserved subgroups within a population (Nuylund-Gibson & Young Choi, 2018; Porcu & Giambona, 2017; Weller et al., 2020). According to Weller et al. (2020) the underlying assumption is that membership in unobserved classes may explain patterns of scores across survey questions or scales. Latent class analysis has been used in previous studies of ACEs exposure for the purpose of classifying combinations of ACEs categories to

predict certain outcomes in adults (Brown et al., 2019; Shin et al., 2018). The purpose of this study is not to determine classes of ACEs, but rather to determine if ACEs exposure, in its totality, plays a role in resilience levels in police officers. This is in keeping with Rutter's (1987) *challenge model* of resilience theory that focuses on *amounts* of exposure rather than *specific classes* of exposure. Future studies may be informed by the results of this study and the conduct of a latent class analysis may be appropriate at that time.

Another limitation of this study is its generalization to police officers and not the larger general population. Even then, the participant group for this study overwhelmingly identified as white, cisgendered males making it difficult to generalize the results to all police officers. Similarly, the use of recruitment through electronic mail, convenience sampling, and reliance on police officers to take the time to respond to the survey created a bias preventing potential respondents from participating due to lack of knowledge of the study or inability to participate (selection bias). The selection bias present in this study was a possible cause of other limitations. The size of the sample is a limiting factor in this generalization of this study and future research will necessitate larger sample sizes to increase confidence in the results of the analysis. The race and gender identification of the participants necessitates a more intentional effort to increase the diversity of the sample (diverse in racial and gender identities). Additionally, the participants recruited using this convenience sampling have the potential to have greater levels of self-awareness thereby impacting the roles of the variables used for analysis in this study. These limitations reduce the confidence in generalizing the findings beyond the sample population. Furthermore, the ACE-Q is a self-report instrument that relies on the correct recollection of childhood trauma and if not accurately recalled, may result in inaccurate responses compared to actual experience (recall bias). Also, due to the sensitive nature of the questions, some

respondents may not have been willing to fully disclose their experiences and intentionally respond in a manner that is not congruent with their experience (response bias). Additionally, the design of this study focused primarily on one possible variable of significance: ACEs scores. It did not include analysis of promotive or protective factors although there were several possible promotive factors collected in the demographic data that were not analyzed (optimism, use of humor, spirituality, amounts of exercise, etc.). Literature suggests that promotive or protective factors may offset risk factors (Zimmerman, 2013) such as ACEs scores; however, the individual promotive factors such as the ability of emotional regulation, self-efficacy, family support, or self-esteem were not a part of the analysis of this study. The limitations of this study; however, create opportunities for future research implications.

References

Aburn, G., Gott, M., & Hoare, K. (2016). What is resilience? An Integrative Review of the empirical literature. *Journal of Advanced Nursing*, *72*(5), 980–1000. https://doi.org/10.1111/jan.12888

Afifi, T. D., Merrill, A. F., & Davis, S. (2016). The theory of resilience and relational load. *Personal Relationships*, *23*(4), 663–683. https://doi.org/10.1111/pere.12159

Alang, S., McAlpine, D., McCreedy, E., & Hardeman, R. (2017). Police Brutality and Black Health: Setting the Agenda for Public Health Scholars. *American Journal of Public Health (1971)*, *107*(5), 662–665. https://doi.org/10.2105/AJPH.2017.303691

American Psychological Association. (2014). *The road to resilience*. American Psychological Association.

Anda, R. F., Dong, M., Brown, D. W., Felitti, V. J., Giles, W. H., Perry, G. S., Valerie, E. J., & Dube, S. R. (2009). The relationship of adverse childhood experiences to a history of premature death of family members. *BMC Public Health*, *9*(1), 106–106. https://doi.org/10.1186/1471-2458-9-106

Anda, R. F., Dong, M., Dube, S. R., Felitti, V. J., & Giles, W. H. (2003). The relationship of exposure to childhood sexual abuse to other formsof abuse, neglect, and household dysfunction during childhood. *Child Abuse & Neglect*, *27*(6), 625–639.

Anda, R. F., Felitti, V. J., Bremner, J. D., Walker, J. D., Whitfield, C., Perry, B. D., Dube, S. R., & Giles, W. H. (2006). The enduring effects of abuse and related adverse experiences in childhood. A convergence of evidence from neurobiology and epidemiology. *European Archives of Psychiatry and Clinical Neuroscience*, *256*(3), 174–186. https://doi.org/10.1007/s00406-005-0624-4

Anda, R., Felitti, V., Bremner, J., Walker, J., Whitfield, C., Perry, B., Dube, & Giles, W. (2006). The enduring effects of abuse and related adverse experiences in childhood—A convergence of evidence from neurobiology and epidemiology. *European Archives of Psychiatry and Clinical Neuroscience*, *256*(3), 174–186. https://doi.org/10.1007/s00406-005-0624-4

Andersen, J. P., & Gustafsberg, H. (2016). A Training Method to Improve Police Use of Force Decision Making: A Randomized Controlled Trial. *SAGE Open*, *6*(2), 215824401663870. https://doi.org/10.1177/2158244016638708

Andersen, J. P., & Papazoglou, K. (2014). Friends under fire: Cross-cultural relationships and trauma exposure among police officers. *Traumatology*, *20*(3), 182–190. https://doi.org/10.1037/h0099403

Andersen, J. P., Papazoglou, K., Koskelainen, M., Nyman, M., Gustafsberg, H., & Arnetz, B. B. (2015). Applying Resilience Promotion Training Among Special Forces Police Officers. *SAGE Open*, *5*(2), 215824401559044. https://doi.org/10.1177/2158244015590446

Anderson, G. S., Di Nota, P. M., Groll, D., & Carleton, R. N. (2020). Peer Support and Crisis-Focused Psychological Interventions Designed to Mitigate Post-Traumatic Stress Injuries among Public Safety and Frontline Healthcare Personnel: A Systematic Review. *International Journal of Environmental Research and Public Health*, *17*(20), 7645. https://doi.org/10.3390/ijerph17207645

Anderson, G. S., Ricciardelli, R., Tam-Seto, L., Giwa, S., & Carleton, R. N. (2022). Self-Reported Coping Strategies for Managing Work-Related Stress among Public Safety Personnel. *International Journal of Environmental Research and Public Health*, *19*(4), 2355. https://doi.org/10.3390/ijerph19042355

Antonovsky, A. (1996). The salutogenic model as a theory to guide health promotion. *Health Promotion International, 11*(1), 11–18. https://doi.org/10.1093/heapro/11.1.11

Araujo, A. P. de C., Gadelha, M. J. N., & Melo, R. L. P. de. (2020). Evidence of validity, reliability and psychometric parameters of the items of the Cognitive Emotion Regulation Questionnaire-Short (CERQ-Short). *Psico Usf*, *25*(3), 547–559. https://doi.org/10.1590/1413-82712020250312

Ariel, B., Farrar, W. A., & Sutherland, A. (2015). The Effect of Police Body-Worn Cameras on Use of Force and Citizens' Complaints Against the Police: A Randomized Controlled Trial. *Journal of Quantitative Criminology*, *31*(3), 509–535. https://doi.org/10.1007/s10940-014-9236-3

Arnetz, B. B., Arble, E., Backman, L., Lynch, A., & Lublin, A. (2012). Assessment of a prevention program for work-related stress among urban police officers. *International Archives of Occupational and Environmental Health*, *86*(1), 1. https://doi.org/10.1007/s00420-012-0748-6

Arnetz, B. B., Nevedal, D. C., Lumley, M. A., Backman, L., & Lublin, A. (2008). Trauma Resilience Training for Police: Psychophysiological and Performance Effects. *Journal of Police and Criminal Psychology*, *24*(1), 1–9. https://doi.org/10.1007/s11896-008-9030-y

Ashkanasy, N. M., Härtel, C. E. J., Zerbe, W. J., & ProQuest (Firm). (2012). *Experiencing and managing emotions in the workplace [e-book]*.

Augsburger, M., Meyer-Parlapanis, D., Bambonye, M., Elbert, T., & Crombach, A. (2015). Appetitive Aggression and Adverse Childhood Experiences Shape Violent Behavior in Females Formerly Associated with Combat. *Frontiers in Psychology*, *6*, 1756–1756. https://doi.org/10.3389/fpsyg.2015.01756

Bailly, N., Pothier, K., Ouhmad, N., Deperrois, R., Cojean, S., & Combalbert, N. (2023). Effects of gender and age on cognitive emotional regulation. *Current Psychology (New Brunswick, N.J.)*, *42*(31), 27228–27231. https://doi.org/10.1007/s12144-022-03557-2

Baldwin, A. L., Baldwin, C. P., Kasser, T., Zax, M., Sameroff, A., & Seifer, R. (1993). Contextual risk and resiliency during late adolescence. *Development and Psychopathology*, *5*(4), 741–761. https://doi.org/10.1017/S095457940000626X

Barra, S., Bessler, C., Landolt, M. A., & Aebi, M. (2018). Patterns of Adverse Childhood Experiences in Juveniles Who Sexually Offended. *Sexual Abuse*, *30*(7), 803–827. https://doi.org/10.1177/1079063217697135

Belfry, K. D., Ham, E., Kolla, N. J., & Hilton, N. Z. (2022). Adverse Childhood Experiences and Offending as a Function of Acquired Brain Injury Among Men in a High Secure Forensic Psychiatric Hospital. *Canadian Journal of Psychiatry*, 7067437221144629–7067437221144629. https://doi.org/10.1177/07067437221144629

Bell, S., & Eski, Y. (2016). 'Break a Leg—It's all in the mind': Police Officers' Attitudes towards Colleagues with Mental Health Issues. *Policing : A Journal of Policy and Practice*, *10*(2), 95–101. https://doi.org/10.1093/police/pav041

Bellis, M. A., Hardcastle, K., Ford, K., Hughes, K., Ashton, K., Quigg, Z., & Butler, N. (2017). Does continuous trusted adult support in childhood impart life-course resilience against adverse childhood experiences—A retrospective study on adult health-harming behaviours and mental well-being. *BMC Psychiatry*, *17*(1), 1. https://doi.org/10.1186/s12888-017-1260-z

Bellis, M. A., Hughes, K., Leckenby, N., Jones, L., Baban, A., Kachaeva, M., Povilaitis, R., Pudule, I., Qirjako, G., Ulukol, B., Raleva, M., & Terzic, N. (2014). Adverse childhood

experiences and associations with health-harming behaviours in young adults: Surveys in eight eastern European countries. *Bulletin of the World Health Organization*, *92*(9), 641–655. https://doi.org/10.2471/BLT.13.129247

Bellis, M. A., Hughes, K., Leckenby, N., Perkins, C., & Lowey, H. (2014a). National household survey of adverse childhood experiences and their relationship with resilience to health-harming behaviors in England. *BMC Medicine*, *12*(1), 1. https://doi.org/10.1186/1741-7015-12-72

Bellis, M. A., Hughes, K., Leckenby, N., Perkins, C., & Lowey, H. (2014b). National household survey of adverse childhood experiences and their relationship with resilience to health-harming behaviors in England. *BMC Medicine*, *12*(1), 72–72. https://doi.org/10.1186/1741-7015-12-72

Bernstein, D. P., Stein, J. A., Newcomb, M. D., Walker, E., Pogge, D., Ahluvalia, T., Stokes, J., Handelsman, L., Medrano, M., Desmond, D., & Zule, W. (2003). Development and validation of a brief screening version of the Childhood Trauma Questionnaire. Child Abuse & Neglect, 27(2), 169–190. https://doi.org/10.1016/S0145-2134(02)00541-0

Bethell C., Gombojav N., Solloway, M., & Wissow, L. (2016). Adverse childhood experiences, resilience and mindfulness-based approaches: common denominator issues for children with emotional, mental, or behavioral problems. *Child and Adolescent Psychiatry Clinics of North America, 25*, 139–56. https://doi.org/10.1016/j.chc.2015.12.001

Birze, A., Regehr, C., Paradis, E., LeBlanc, V., & Einstein, G. (2021). Perceived organizational support and emotional labour among police communicators: What can organizational context tell us about posttraumatic stress? *International Archives of Occupational and Environmental Health*, *95*(2), 425–435. https://doi.org/10.1007/s00420-021-01708-9

Bittner, E. (1967). The Police on Skid-Row: A Study of Peace Keeping. *American Sociological Review*, *32*(5), 699–715. https://doi.org/10.2307/2092019

Blumberg, D. M., Schlosser, M. D., Papazoglou, K., Creighton, S., & Kaye, C. C. (2019). New Directions in Police Academy Training: A Call to Action †. *International Journal of Environmental Research and Public Health*, *16*(24), 24. https://doi.org/10.3390/ijerph16244941

Bonanno, G. A. (2012). Uses and abuses of the resilience construct: Loss, trauma, and health-reltated adversities. *Social Science and Medicine*, *74*(5), 753–754.

Bonanno, G. A., Westphal, M., & Mancini, A. D. (2011). Resilience to loss and potential trauma. *Annual Review of Clinical Psychology*, *7*, 511–535.

Bozeman, W. P., Stopyra, J. P., Klinger, D. A., Martin, B. P., Graham, D. D., Johnson, 3rd, James C., Mahoney-Tesoriero, K., & Vail, S. J. (2018). Injuries associated with police use of force. *The Journal of Trauma and Acute Care Surgery*, *84*(3), 466–472. https://doi.org/10.1097/TA.0000000000001783

Braun-Lewensohn, O. (2021). Salutogenesis and Coping Ways to Overcome Stress and Conflicts. *Salutogenesis and Coping*.

Bremner, J. D., Bolus, R., & Mayer, E. A. (2007). Psychometric Properties of the Early Trauma Inventory–Self Report. *The Journal of Nervous and Mental Disease*, *195*(3). https://journals.lww.com/jonmd/Fulltext/2007/03000/Psychometric_Properties_of_the_Early_Trauma.5.aspx

Britt, T., Shen, W., Sinclair, R., Grossman, M. R., & Klieger, D. M. (2016). How much do we really know about employee resilience? *Industrial and Organizational Psychology*, *9*(2), 378–404.

Brown, J., Fielding, J., & Grover, J. (1999). Distinguishing traumatic, vicarious, and routine opperational stressor exposure and atendant advers consequences in a sample of police officers. *Work & Stress*, *13*(4), 4.

Brown, S. M., Rienks, S., McCrae, J. S., & Watamura, S. E. (2019). The co-occurrence of adverse childhood experiences among children investigated for child maltreatment: A latent class analysis. *Child Abuse & Neglect*, *87*, 18–27. https://doi.org/10.1016/j.chiabu.2017.11.010

Buimer, E. E. L., Brouwer, R. M., Mandl, R. C. W., Pas, P., Schnack, H. G., & Hulshoff Pol, H. E. (2022). Adverse childhood experiences and fronto-subcortical structures in the developing brain. *Frontiers in Psychiatry*, *13*, 1–14. https://doi.org/10.3389/fpsyt.2022.955871

Burke, C., Ellis, J. D., Peltier, M. R., Roberts, W., Verplaetse, T. L., Phillips, S., Moore, K. E., Marotta, P. L., & McKee, S. A. (2023). Adverse Childhood Experiences and Pathways to Violent Behavior for Women and Men. *Journal of Interpersonal Violence*, *38*(3–4), 4034–4060. https://doi.org/10.1177/08862605221113012

Burke, K. J., & Shakespeare-Finch, J. (2011). Markers of Resilience in New Police Officers: Appraisal of Potentially Traumatizing Events. *Traumatology (Tallahassee, Fla.)*, *17*(4), 52–60. https://doi.org/10.1177/1534765611430725

Burke, R. J. (1998). Work and non-work stressors and well-being among police officers: The role of coping. *Anxiety, Stress, & Coping*, *11*(4), 4. https://doi.org/10.1080/10615809808248319

Butler, A. J. P. (1998). Balancing Public Expectation and Resource Limitations: Policing Services in the 21st Century. *International Journal of Police Science & Management*, *1*(1), 26–38. https://doi.org/10.1177/146135579800100104

Carver, C. S. (1998). Resilience and Thriving: Issues, Models, and Linkages. *Journal of Social Issues*, *54*(2), 245–266. https://doi.org/10.1111/j.1540-4560.1998.tb01217.x

Chan, J. F., & Andersen, J. P. (2020). Influence of organizational stress on reported depressive symptoms among police. *Occupational Medicine (Oxford)*, *70*(7), 496–502. https://doi.org/10.1093/occmed/kqaa141

Chang, X., Jiang, X., Mkandarwire, T., & Shen, M. (2019). Associations between adverse childhood experiences and health outcomes in adults aged 18-59 years. *PloS One*, *14*(2), e0211850–e0211850. https://doi.org/10.1371/journal.pone.0211850

Christiansen, E. J., & Evans, W. P. (2005). Adolescent Victimization: Testing Models of Resiliency by Gender. *The Journal of Early Adolescence*, *25*(3), 298–316. https://doi.org/10.1177/0272431605276931

Cicchetti, D., & Garmezy, N. (1993). Prospects and promises in the study of resilience. *Development and Psychopathology*, *5*(4), 497–502. https://doi.org/10.1017/S0954579400006118

Clements-Nolle, K., Lensch, T., Baxa, A., Gay, C., Larson, S., & Yang, W. (2018). Sexual Identity, Adverse Childhood Experiences, and Suicidal Behaviors. *Journal of Adolescent Health*, *62*(2), 198–204. https://doi.org/10.1016/j.jadohealth.2017.09.022

Cockcroft, T. (2017a). Police Culture: Histories, Orthodoxies, and New Horizons. *Policing : A Journal of Policy and Practice*, *11*(3), 229–235. https://doi.org/10.1093/police/pax029

Cockcroft, T. (2017b). Police Culture: Histories, Orthodoxies, and New Horizons. *Policing : A Journal of Policy and Practice*, *11*(3), 229–235. https://doi.org/10.1093/police/pax029

Connolly, E. J. (2020). Further Evaluating the Relationship Between Adverse Childhood Experiences, Antisocial Behavior, and Violent Victimization: A Sibling-Comparison Analysis. *Youth Violence and Juvenile Justice*, *18*(1), 3–23. https://doi.org/10.1177/1541204019833145

Connor, K., & Davidson, J. R. T. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety*, *18*(2), 76–82. https://doi.org/10.1002/da.10113

Connor, K. M., & Davidson, J. R. T. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety*, *18*(2), 76–82. https://doi.org/10.1002/da.10113

Correia, M. E., & Jenks, D. A. (2011). Expectations of change: The congruency between Beat Officers and Supervisors and its impact on programmatic change. *Police Practice & Research*, *12*(1), 16–34. https://doi.org/10.1080/15614263.2010.497329

Creswell, J. W., & Creswell, J. D. (2018). *Research Design* (5th ed.). Sage.

Crouch, E., Strompolis, M., Radcliff, E., & Srivastav, A. (2018). Examining exposure to adverse childhood experiences and later outcomes of poor physical and mental health among South Carolina adults. *Children and Youth Services Review*, *84*, 193–197. https://doi.org/10.1016/j.childyouth.2017.11.031

Di Nota, P. M., Kasurak, E., Bahji, A., Groll, D., & Anderson, G. S. (2021). Coping among public safety personnel: A systematic review and meta–analysis. *Stress and Health*, *37*(4), 613–630. https://doi.org/10.1002/smi.3039

Doi, S., Fujiwara, T., & Isumi, A. (2021). Association between maternal adverse childhood experiences and mental health problems in offspring: An intergenerational study. *Development and Psychopathology*, *33*(3), 1041–1058. https://doi.org/10.1017/S0954579420000334

Domingues, I. P., & Machado, J. C. (2017). The loosely coupled factors of organizational stress in police forces. *Policing : An International Journal of Police Strategies & Management*, *40*(4), 657–671. https://doi.org/10.1108/PIJPSM-08-2016-0128

Dong, M., Anda, R. F., Dube, S. R., Giles, W. H., & Felitti, V. J. (2003). The relationship of exposure to childhood sexual abuse to other forms of abuse, neglect, and household dysfunction during childhood. *Child Abuse & Neglect*, *27*(6), 625–639. https://doi.org/10.1016/S0145-2134(03)00105-4

Dong, M., Anda, R. F., Felitti, V. J., Dube, S. R., Williamson, D. F., Thompson, T. J., Loo, C. M., & Giles, W. H. (2004). The interrelatedness of multiple forms of childhood abuse, neglect, and household dysfunction. *Child Abuse & Neglect*, *28*(7), 771–784. https://doi.org/10.1016/j.chiabu.2004.01.008

Dong, M., Giles, W., Felitti, V., Dube, Williams, J., Chapman, D., & Anda, R. (2004). Insights into causal pathways for ischemic heart disease—Adverse childhood experiences study. *Circulation (New York, N.Y.)*, *110*(13), 1761–1766. https://doi.org/10.1161/01.CIR.0000143074.54995.7F

Doyle, J. N., Campbell, M. A., & Gryshchuk, L. (2021). Occupational Stress and Anger: Mediating Effects of Resiliency in First Responders. *Journal of Police and Criminal Psychology*, *36*(3), 463–472. https://doi.org/10.1007/s11896-021-09429-y

Dube, S. R., Williamson, D. F., Thompson, T., Felitti, V. J., & Anda, R. F. (2004). Assessing the reliability of retrospective reports of adverse childhood experiences among adult HMO members attending a primary care clinic. *Child Abuse & Neglect*, *28*(7), 729–737. https://doi.org/10.1016/j.chiabu.2003.08.009

Dyer, T. V., Turpin, R. E., Hawthorne, D. J., Jain, V., Sayam, S., & Mittal, M. (2022). Sexual Risk Behavior and Lifetime HIV Testing: The Role of Adverse Childhood Experiences. *International Journal of Environmental Research and Public Health*, *19*(7), 4372. https://doi.org/10.3390/ijerph19074372

Engel, R. S., Corsaro, N., Isaza, G. T., & McManus, H. D. (2022). Assessing the impact of de-escalation training on police behavior: Reducing police use of force in the Louisville, KY Metro Police Department. *Criminology & Public Policy*, *21*(2), 199–233. https://doi.org/10.1111/1745-9133.12574

Engel, R. S., McManus, H. D., & Herold, T. D. (2020). Does de-escalation training work?: A systematic review and call for evidence in police use-of-force reform. *Criminology & Public Policy*, *19*(3), 721–759. https://doi.org/10.1111/1745-9133.12467

Erdem, G., & Slesnick, N. (2010). That Which Does Not Kill You Makes You Stronger: Runaway Youth's Resilience to Depression in the Family Context. *American Journal of Orthopsychiatry*, *80*(2), 195–203. https://doi.org/10.1111/j.1939-0025.2010.01023.x

Evans, W. P., Marsh, S. C., & Weigel, D. J. (2010). Promoting adolescent sense of coherence: Testing models of risk, protection, and resiliency. *Journal of Community & Applied Social Psychology*, *20*(1), 30–43. https://doi.org/10.1002/casp.1002

Felitti, V. J., Anda, R. F., Nordenberg, D., Williamson, D. F., Spitz, A. M., Edwards, V., Koss, M. P., & Marks, J. S. (1998). Relationship of Childhood Abuse and Household

Dysfunction to Many of the Leading Causes of Death in Adults: The Adverse Childhood Experiences (ACE) Study. *American Journal of Preventive Medicine*, *14*(4), 4. https://doi.org/10.1016/S0749-3797(98)00017-8

Fenn, L., & Bullock, K. (2022). How the interplay between organizational 'culture' and 'climate' shapes police officers' perceptions of community policing. *International Journal of Police Science & Management*, *24*(3), 227–238. https://doi.org/10.1177/14613557211064056

Fergus, S., & Zimmerman, M. (2005). Adolescent resilience: A framework for understanding healthy development in the face of risk. *Annual Review of Public Health*, *26*(1), 399–419. https://doi.org/10.1146/annurev.publhealth.26.021304.144357

Fletcher, D., & Sarkar, M. (2013). Psychological Resilience: A Review and Critique of Definitions, Concepts, and Theory. *European Psychologist*, *18*(1), 12–23. https://doi.org/10.1027/1016-9040/a000124

Frantz, J., Perez, N. M., White, M., & Malm, A. (2023). Coinciding crises: The effects of the police legitimacy and opioid crises on the culture of a specialized drug investigation unit. *Policing : An International Journal of Police Strategies & Management*, *46*(1), 10–23. https://doi.org/10.1108/PIJPSM-06-2022-0089

Fridell, L. A. (2016). Explaining the Disparity in Results Across Studies Assessing Racial Disparity in Police Use of Force: A Research Note. *American Journal of Criminal Justice*, *42*(3), 502–513. https://doi.org/10.1007/s12103-016-9378-y

Fyhn, T., Fjell, K. K., & Johnsen, B. H. (2015). Resilience Factors Among Police Investigators: Hardiness-commitment a Unique Contributor. *Journal of Police and Criminal Psychology*, *31*(4), 261–269. https://doi.org/10.1007/s11896-015-9181-6

Gagnon, A. Fox, K. (2021). Community Satisfaction and Police Officer Understanding of Community Expectations: A Quantitative and Observational Analysis. *Criminology, Criminal Justice, Law & Society*, *22*(1), 1–19.

Galatzer-Levy, I. R., Brown, A. D., Henn-Haase, C., Metzler, T. J., Neylan, T. C., & Marmar, C. R. (2013a). Positive and Negative Emotion Prospectively Predict Trajectories of Resilience and Distress Among High-Exposure Police Officers. *Emotion*, *13*(3), 3. https://doi.org/10.1037/a0031314

Galatzer-Levy, I. R., Brown, A. D., Henn-Haase, C., Metzler, T., Neylan, T., & Marmar, C. R. (2013b). Positive and negative emotion prospectively predict trajectories of resilience and distress among high-exposure police officers. *Emotion*, *13*(3), 545–553. https://doi.org/10.1037/a0031314

Garmezy, N., & Masten, A. S. (1986). Stress, competence, and resilience: Common frontiers for therapist and psychopathologist. *Behavior Therapy*, *17*(5), 500–521. https://doi.org/10.1016/S0005-7894(86)80091-0

Garmezy, N., Masten, A. S., & Tellegen, A. (1984). The Study of Stress and Competence in Children: A Building Block for Developmental Psychopathology. *Child Development*, *55*(1), 97–111. https://doi.org/10.2307/1129837

Garnefski, N., & Kraaij, V. (2006). Cognitive emotion regulation questionnaire – development of a short 18-item version (CERQ-short). *Personality and Individual Differences*, *41*(6), 1045–1053. https://doi.org/10.1016/j.paid.2006.04.010

Garnefski, N., Kraaij, V., & Spinhoven, P. (2002). *Manual for the Users of the Cognitive Emotional Regulation Questionnaire*. Leiden University.

Garrido, E. F., Weiler, L. M., & Taussig, H. N. (2018). Adverse Childhood Experiences and Health-Risk Behaviors in Vulnerable Early Adolescents. *The Journal of Early Adolescence*, *38*(5), 661–680. https://doi.org/10.1177/0272431616687671

Gau, J.M., Brooke, E.J., Paoline III, E.A. and Roman, K.L. (2021). Military experience among police officers: an examination of veterans' attitudes toward the community. *Policing: An International Journal*, *44*(6) pp. 1060-1076. https://doi.org/10.1108/PIJPSM-05-2021-0070.

Gershon, R. R. M., Barocas, B., Canton, A. N., Xianbin Li, & Vlahov, D. (2008). Mental, Physical, and Behavioral Outcomes Associated with Perceived Work Stress in Police Officers. *Criminal Justice and Behavior*, *36*(3), 3. https://doi.org/10.1177/0093854808330015

Goldenson, J., Kitollari, I., & Lehman, F. (2021). The Relationship between ACEs, trauma-related psychopathology and resilience in vulnerable youth: Implications for screening and treatment. *Journal of Child & Adolescent Trauma*, *14*(1), 151–160. https://doi.org/10.1007/s40653-020-00308-y

Gomez, R., & McLaren, S. (2006). The association of avoidance coping style, and perceived mother and father support with anxiety/depression among late adolescents: Applicability of resiliency models. *Personality and Individual Differences*, *40*(6), 1165–1176. https://doi.org/10.1016/j.paid.2005.11.009

Grafton, E., Gillespie, B., & Henderson, S. (2010). Resilience: The power within. *Oncology Nursing Forum*, *37*(6), 698–705. https://doi.org/10.1188/10.ONF.698-705

Green, K. T., Hayward, L. C., Williams, A. M., Dennis, P. A., Bryan, B. C., Taber, K. H., Davidson, J. R. T., Beckham, J. C., Calhoun, P. S., Ingle, S. J., Miller-Mumford, M.,

McDonald, S. D., Pickett, T. C., Yoash-Gantz, R. E., Brancu, M., Morey, R. A., Strauss, J. J., Tupler, L. A., & Dennis, M. F. (2014). Examining the Factor Structure of the Connor–Davidson Resilience Scale (CD-RISC) in a Post-9/11 U.S. Military Veteran Sample. *Assessment (Odessa, Fla.)*, *21*(4), 443–451. https://doi.org/10.1177/1073191114524014

Grest, C. V., Cederbaum, J. A., Lee, D. S., Choi, Y. J., Cho, H., Hong, S., Yun, S. H., & Lee, J. O. (2022). Cumulative Violence Exposure and Alcohol Use Among College Students: Adverse Childhood Experiences and Dating Violence. *Journal of Interpersonal Violence*, *37*(1–2), 557–577. https://doi.org/10.1177/0886260520913212

Griffin, J. D., & Sun, I. Y. (2018). Do Work-Family Conflict and Resiliency Mediate Police Stress and Burnout: A Study of State Police Officers. *American Journal of Criminal Justice*, *43*(2), 2. https://doi.org/10.1007/s12103-017-9401-y

Gross, D. P., Rachor, G. S., Yamamoto, S. S., Dick, B. D., Brown, C., Senthilselvan, A., Straube, S., Els, C., Jackson, T., Brémault-Phillips, S., Voaklander, D., Stastny, J., & Berry, T. (2021). Characteristics and Prognostic Factors for Return to Work in Public Safety Personnel with Work-Related Posttraumatic Stress Injury Undergoing Rehabilitation. *Journal of Occupational Rehabilitation*, *31*(4), 768–784. https://doi.org/10.1007/s10926-021-09963-w

Gross, J. J. (1998). The emerging field of emotion regulation: An integrative review. *Review of General Psychology*, *2*, 271–299. https://doe.org/10.1037.2F1089-2680.2.3.271

He, N., Zhao, J., & Archbold, C. (2002). Gender and police stress—The convergent and divergent impact of work environment, work-family conflict, and stress coping mechanisms of female and male police officers. *Policing : An International Journal of*

Police Strategies & Management, *25*(4), 687–708. https://doi.org/10.1108/13639510210450631

Hillis, S. D., Anda, R. F., Felitti, V. J., & Marchbanks, P. A. (2001). Adverse childhood experiences and sexual risk behaviors in women: A retrospective cohort study. *Perspectives on Sexual and Reproductive Health*, *33*(5), 206.

Hoekstra, M., & Sloan, C. (2022). Does Race Matter for Police Use of Force? Evidence from 911 Calls. *The American Economic Review*, *112*(3), 827–860. https://doi.org/10.1257/aer.20201292

Hoover, L. T. (2010). Rethinking our expectations. *Police Practice & Research*, *11*(2), 160–165. https://doi.org/10.1080/15614261003593344

Ireland, M. J., Clough, B. A., & Day, J. J. (2017). The cognitive emotion regulation questionnaire: Factorial, convergent, and criterion validity analyses of the full and short versions. *Personality and Individual Differences*, *110*, 90–95. https://doi.org/10.1016/j.paid.2017.01.035

Ishikawa, K., Azuma, N., & Ohka, M. (2022). Intergenerational Transmission of Maternal Adverse Childhood Experiences on Next Generation's Development: A Mini-Review. *Frontiers in Psychology*, *13*, 852467–852467. https://doi.org/10.3389/fpsyg.2022.852467

Isohookana, R., Riala, K., Hakko, H., & Räsänen, P. (2013). Adverse childhood experiences and suicidal behavior of adolescent psychiatric inpatients. *European Child & Adolescent Psychiatry*, *22*(1), 13–22. https://doi.org/10.1007/s00787-012-0311-8

Iversen, A. C., Fear, N. T., Ehlers, A., Hacker Hughes, J., Hull, L., Earnshaw, M., Greenberg, N., Rona, R., Wessely, S., & Hotopf, M. (2008). Risk factors for post-traumatic stress

disorder among UK Armed Forces personnel. *Psychological Medicine*, *38*(4), 4. https://doi.org/10.1017/S0033291708002778

Jacobs, E., & Keegan, R. J. (2022). Sustaining optimal performance when the stakes could not be higher: Emotional awareness and resilience in emergency service personnel (with learnings for elite sport). *Frontiers in Psychology*, *13*, 891585–891585. https://doi.org/10.3389/fpsyg.2022.891585

James, B. J., Wilson, W., & McMains, M. J. (2006). An examination of stress hardiness, dysphoria, and anger among police recruits exposed to stressful police academy training. *Journal of Police and Criminal Psychology*, *21*(2), 37–54. https://doi.org/10.1007/BF02855683

Jermann, F., Van der Linden, M., d'Acremont, M., & Zermatten, A. (2006). Cognitive Emotion Regulation Questionnaire (CERQ): Confirmatory Factor Analysis and Psychometric Properties of the French Translation. *European Journal of Psychological Assessment : Official Organ of the European Association of Psychological Assessment*, *22*(2), 126–131. https://doi.org/10.1027/1015-5759.22.2.126

Jones, C., Bright, K., Smith-MacDonald, L., Pike, A. D., & Bremault-Phillips, S. (2022). Peers supporting reintegration after occupational stress injuries: A qualitative analysis of a workplace reintegration facilitator training program developed by municipal police for public safety personnel. *Police Journal (Chichester)*, *95*(1), 152–169. https://doi.org/10.1177/0032258X211030896

Jones, C., Miguel-Cruz, A., Smith-MacDonald, L., Cruikshank, E., Baghoori, D., Kaur Chohan, A., Laidlaw, A., White, A., Cao, B., Agyapong, V., Burback, L., Winkler, O., Sevigny, P. R., Dennett, L., Ferguson-Pell, M., Greenshaw, A., & Brémault-Phillips, S. (2020).

Virtual Trauma-Focused Therapy for Military Members, Veterans, and Public Safety Personnel With Posttraumatic Stress Injury: Systematic Scoping Review. *JMIR MHealth and UHealth*, *8*(9), e22079–e22079. https://doi.org/10.2196/22079

Jung, S. J., Jeon, Y. J., Choi, K. W., Yang, J. S., Chae, J., Koenen, K. C., & Kim, H. C. (2021). Correlates of psychological resilience and risk: Prospective associations of self-reported and relative resilience with Connor-Davidson resilience scale, heart rate variability, and mental health indices. *Brain and Behavior*, *11*(5), e02091-n/a. https://doi.org/10.1002/brb3.2091

Kaggwa, M. M., Muwanguzi, M., Najjuka, S. M., Nduhuura, E., Kajjimu, J., Mamun, M. A., Arinaitwe, I., Ashaba, S., & Griffiths, M. D. (2022). Risky sexual behaviours among Ugandan university students: A pilot study exploring the role of adverse childhood experiences, substance use history, and family environment. *PloS One*, *17*(11), e0277129. https://doi.org/10.1371/journal.pone.0277129

Kaplan, C. P., Turner, S., Norman, E., & Stillson, K. (1996). Promoting Resilience Strategies: A Modified Consultation Model. *Children & Schools*, *18*(3), 158–168. https://doi.org/10.1093/cs/18.3.158

Kaplan, J., Bergman, A., Christopher, M., Bowen, S., & Hunsinger, M. (2017). Role of Resilience in Mindfulness Training for First Responders. *Mindfulness*, *8*(5), 5. https://doi.org/10.1007/s12671-017-0713-2

Karaffa, K., Openshaw, L., Koch, J., Clark, H., Harr, C., & Stewart, C. (2015). Perceived Impact of Police Work on Marital Relationships. *The Family Journal*, *23*(2), 2. https://doi.org/10.1177/1066480714564381

Kim-Cohen, J., PhD. (2007). Resilience and Developmental Psychopathology. *Child and Adolescent Psychiatric Clinics of North America*, *16*(2), 2. https://doi.org/10.1016/j.chc.2006.11.003

Kim-Cohen, J., & Turkewitz, R. (2012). Resilience and measured gene-environment interactions. *Development and Psychopathology*, *24*, 1297–1306.

Koc, M. S., & Uzun, R. B. (2023). Investigating the Link Between Dispositional Mindfulness, Beliefs About Emotions, Emotion Regulation and Psychological Health: A Model Testing Study. *Journal of Rational-Emotive and Cognitive-Behavior Therapy*. https://doi.org/10.1007/s10942-023-00522-1

Korotana, L. M., Dobson, K. S., Pusch, D., & Josephson, T. (2016). A review of primary care interventions to improve health outcomes in adult survivors of adverse childhood experiences. *Clinical Psychology Review*, *46*, 59–90. https://doi.org/10.1016/j.cpr.2016.04.007

Kuiper, H., van Leeuwen, C. C. M., Stolwijk-Swuste, J. M., & Post, M. W. M. (2019). Measuring resilience with the Connor-Davidson Resilience Scale (CD-RISC): Which version to choose? *Spinal Cord*, *57*(5), 360–366. https://doi.org/10.1038/s41393-019-0240-1

Kula, S. (2016). Occupational stress, supervisor support, job satisfaction, and work-related burnout: Perceptions of Turkish National Police (TNP) members. *Police Practice & Research*, *18*(2), 2. https://doi.org/10.1080/15614263.2016.1250630

Lane, J., Le, M., Martin, K., Bickle, K., Campbell, E., & Ricciardelli, R. (2022). Police Attitudes Toward Seeking Professional Mental Health Treatment. *Journal of Police and Criminal Psychology*, *37*(1), 123–131. https://doi.org/10.1007/s11896-021-09467-6

Ledesma, J. (2014). Conceptual Frameworks and Research Models on Resilience in Leadership. *SAGE Open*, *4*(3), 215824401454546. https://doi.org/10.1177/2158244014545464

Lee, D. J., Thompson-Hollands, J., Strage, M. F., Marx, B. P., Unger, W., Beck, J. G., & Sloan, D. M. (2020). Latent Factor Structure and Construct Validity of the Cognitive Emotion Regulation Questionnaire–Short Form Among Two PTSD Samples. *Assessment (Odessa, Fla.)*, *27*(3), 423–431. https://doi.org/10.1177/1073191118791301

Lee, H., Jang, H., Yun, I., Lim, H., & Tushaus, D. W. (2010). An examination of police use of force utilizing police training and neighborhood contextual factors A multilevel analysis. *Policing : An International Journal of Police Strategies & Management*, *33*(4), 681–702. https://doi.org/10.1108/13639511011085088

Lee, K. A., Bright, C. L., & Betz, G. (2022). Adverse Childhood Experiences (ACEs), Alcohol Use in Adulthood, and Intimate Partner Violence (IPV) Perpetration by Black Men: A Systematic Review. *Trauma, Violence, & Abuse*, *23*(2), 372–389. https://doi.org/10.1177/1524838020953101

Lee, R. D., & Chen, J. (2017). Adverse childhood experiences, mental health, and excessive alcohol use: Examination of race/ethnicity and sex differences. *Child Abuse & Neglect*, *69*, 40–48. https://doi.org/10.1016/j.chiabu.2017.04.004

Lensch, T., Clements-Nolle, K., Oman, R. F., Evans, W. P., Lu, M., & Yang, W. (2021). Adverse Childhood Experiences and Suicidal Behaviors Among Youth: The Buffering Influence of Family Communication and School Connectedness. *Journal of Adolescent Health*, *68*(5), 945–952. https://doi.org/10.1016/j.jadohealth.2020.08.024

Lê-Scherban, F., Wang, X., Boyle-Steed, K. H., & Pachter, L. M. (2018). Intergenerational Associations of Parent Adverse Childhood Experiences and Child Health Outcomes. *Pediatrics (Evanston), 141*(6), 1. https://doi.org/10.1542/peds.2017-4274

Letourneau, N., Dewey, D., Kaplan, B. J., Ntanda, H., Novick, J., Thomas, J. C., Deane, A. J., Leung, B., Pon, K., & Giesbrecht, G. F. (2019). Intergenerational transmission of adverse childhood experiences via maternal depression and anxiety and moderation by child sex. *Journal of Developmental Origins of Health and Disease*, *10*(1), 88–99. https://doi.org/10.1017/S2040174418000648

Liu, M., Mejia-Lancheros, C., Lachaud, J., Latimer, E., Aubry, T., Somers, J., Distasio, J., Stergiopoulos, V., & Hwang, S. W. (2021). Overall and Gender-specific Associations between Dimensions of Adverse Childhood Experiences and Mental Health Outcomes among Homeless Adults: Associations Générales et Sexospécifiques Entre les Dimensions des Expériences Défavorables de L'enfance et les Résultats de Santé Mentale Chez les Adultes Sans Abri. *Canadian Journal of Psychiatry*, *66*(10), 906–917. https://doi.org/10.1177/0706743721989158

Loudermilk, E., Loudermilk, K., Obenauer, J., & Quinn, M. A. (2018a). Impact of adverse childhood experiences (ACEs) on adult alcohol consumption behaviors. *Child Abuse & Neglect*, *86*, 368–374. https://doi.org/10.1016/j.chiabu.2018.08.006

Loudermilk, E., Loudermilk, K., Obenauer, J., & Quinn, M. A. (2018b). Impact of adverse childhood experiences (ACEs) on adult alcohol consumption behaviors. *Child Abuse & Neglect*, *86*, 368–374. https://doi.org/10.1016/j.chiabu.2018.08.006

Madewell, A. N., & Ponce-Garcia, E. (2016). Assessing resilience in emerging adulthood: The Resilience Scale (RS), Connor–Davidson Resilience Scale (CD-RISC), and Scale of

Protective Factors (SPF). *Personality and Individual Differences*, *97*, 249–255. https://doi.org/10.1016/j.paid.2016.03.036

Manzoni, P., & Eisner, M. (2006). Violence Between the Police and the Public: Influences of Work-Related Stress, Job Satisfaction, Burnout, and Situational Factors. *Criminal Justice and Behavior*, *33*(5), 613–645. https://doi.org/10.1177/0093854806288039

Marks, M., Howell, S., & Shelly, S. (2017). The Fluidity of "Police Culture": Encountering the Contextual Complexity of Policing Street-Level Drug Use. *Policing : A Journal of Policy and Practice*, *11*(3), 318–331. https://doi.org/10.1093/police/paw048

Marsman, A., Luijcks, R., Vossen, C., van Os, J., & Lousberg, R. (2019). The impact of adverse childhood experiences on EMG reactivity: A proof of concept study. *PloS One*, *14*(5), e0216657–e0216657. https://doi.org/10.1371/journal.pone.0216657

Martinez, S., Jones, J. D., Brandt, L., Hien, D., Campbell, A. N. C., Batchelder, S., & Comer, S. D. (2021). Factor structure and psychometric properties of the Connor–Davidson resilience scale (CD-RISC) in individuals with opioid use disorder. *Drug and Alcohol Dependence*, *221*, 108632. https://doi.org/10.1016/j.drugalcdep.2021.108632

Maryam Shahab & Somayyeh Taklavi. (2019). The Relationship Between the Effects of Adverse Childhood Experiences with Emotion Regulation and Cognitive Flexibility in Teenage Students. *International Journal of School Health (Online)*, *6*(4), 41–47. https://doi.org/10.30476/intjsh.2019.45942

Masten, A. (2014). Global perspectives on resilience in children and youth. *Child Development*, *85*(1), 6–20.

Masten, A., & Barnes, A. (2018). Resilience in Children: Developmental Perspectives. *Children (Basel)*, *5*(7), 7. https://doi.org/10.3390/children5070098

Masten, A. S. (2001). Ordinary Magic: Resilience Processes in Development. *The American Psychologist*, *56*(3), 227–238. https://doi.org/10.1037/0003-066X.56.3.227

Masten, A. S., Best, K. M., & Garmezy, N. (1990). Resilience and development: Contributions from the study of children who overcome adversity. *Development and Psychopathology*, *2*(4), 425–444. https://doi.org/10.1017/S0954579400005812

McCormack, L., & Riley, L. (2016). Medical discharge from the "Family," moral injury and a diagnosis of PTSD: Is psychological growth possible in the aftermath of policing trauma. *Traumatology*, *22*(1), 19–28. https://doi.org/10.1037/trm0000059

Mccraty, R., & Atkinson, M. (2012). Resilience Training Program Reduces Physiological and Psychological Stress in Police Officers. *Global Advances in Health and Medicine*, *1*(5), 5. https://doi.org/10.7453/gahmj.2012.1.5.013

McCreary, D. R., & Thompson, M. M. (2006). Development of Two Reliable and Valid Measures of Stressors in Policing: The Operational and Organizational Police Stress Questionnaires. *International Journal of Stress Management*, *13*(4), 494–518. https://doi.org/10.1037/1072-5245.13.4.494

McRae, E. M., Stoppelbein, L., O'Kelley, S. E., Fite, P., & Smith, S. B. (2021). An Examination of Post-Traumatic Stress Symptoms and Aggression among Children with a History of Adverse Childhood Experiences. *Journal of Psychopathology and Behavioral Assessment*, *43*(3), 657–670. https://doi.org/10.1007/s10862-021-09884-1

Meddeb, A., Berlin, J., Laporte, N., & Wallinius, M. (2022). Adverse childhood experiences do not moderate the association between aggressive antisocial behavior and general disinhibition in a forensic psychiatric inpatient sample. *Frontiers in Psychology*, *13*, 1019246–1019246. https://doi.org/10.3389/fpsyg.2022.1019246

Meffert, S., Henn-Haase, C., Metzler, T. J., Qian, M., Best, S., Hirschfeld, A., McCaslin, S., & Neylan, T. C. (2014). Prospective study of police officer spouse/partners: A new pathway to secondary trauma and relationship violence? *PLoS ONE*, *9*(7), 7. https://doi.org/10.1371/journal.pone.0100663

Mei, X., Li, J., Li, Z.-S., Huang, S., Li, L.-L., Huang, Y.-H., & Liu, J. (2022). Psychometric evaluation of an Adverse Childhood Experiences (ACEs) measurement tool: An equitable assessment or reinforcing biases? *Health & Justice*, *10*(1), 34–34. https://doi.org/10.1186/s40352-022-00198-2

Meinck, F., Cosma, A. P., Mikton, C., & Baban, A. (2017). Psychometric properties of the Adverse Childhood Experiences Abuse Short Form (ACE-ASF) among Romanian high school students. *Child Abuse & Neglect*, *72*, 326–337. https://doi.org/10.1016/j.chiabu.2017.08.016

Mersky, J. P., Topitzes, J., & Reynolds, A. J. (2013). Impacts of adverse childhood experiences on health, mental health, and substance use in early adulthood: A cohort study of an urban, minority sample in the U.S. *Child Abuse & Neglect*, *37*(11), 11. https://doi.org/10.1016/j.chiabu.2013.07.011

Mishara, B. L., & Fortin, L.-F. (2022). Long-Term Effects of a Comprehensive Police Suicide Prevention Program: 22-Year Follow-Up. *Crisis : The Journal of Crisis Intervention and Suicide Prevention*, *43*(3), 183–189. https://doi.org/10.1027/0227-5910/a000774

Molina, G., & Whittaker, A. (2022). Treatment of post-traumatic stress disorder and substance use disorder in adults with a history of adverse childhood experiences: A systematic review of psychological interventions. *Drug and Alcohol Dependence Reports*, *2*, 100028–100028. https://doi.org/10.1016/j.dadr.2022.100028

Montgomery, A. E., Cutuli, J. J., Evans-Chase, M., Treglia, D., & Culhane, D. P. (2013). Relationship Among Adverse Childhood Experiences, History of Active Military Service, and Adult Outcomes: Homelessness, Mental Health, and Physical Health. *American Journal of Public Health (1971)*, *103*(S2), S262–S268. https://doi.org/10.2105/AJPH.2013.301474

Moreira, D., Moreira, D. S., Oliveira, S., Ribeiro, F. N., Barbosa, F., Fávero, M., & Gomes, V. (2020). Relationship between adverse childhood experiences and psychopathy: A systematic review. *Aggression and Violent Behavior*, *53*, 101452–14. https://doi.org/10.1016/j.avb.2020.101452

Morote, R., Hjemdal, O., Uribe, P. M., & Corveleyn, J. (2017). Psychometric properties of the Resilience Scale for Adults (RSA) and its relationship with life-stress, anxiety and depression in a Hispanic Latin-American community sample. *PloS One*, *12*(11), e0187954–e0187954. https://doi.org/10.1371/journal.pone.0187954

Morris, D. J., Webb, E. L., Parmar, E., Trundle, G., & McLean, A. (2020). Troubled beginnings: The adverse childhood experiences and placement histories of a detained adolescent population with developmental disorders. *Advances in Mental Health and Intellectual Disabilities*, *14*(6), 181–197. https://doi.org/10.1108/AMHID-01-2020-0003

Mourtgos, S. M., Adams, I. T., & Nix, J. (2022). Elevated police turnover following the summer of George Floyd protests: A synthetic control study. *Criminology & Public Policy*, *21*(1), 9–33. https://doi.org/10.1111/1745-9133.12556

M.S., S. P., Joseph, J. K., & Vardhanan, Y. S. (2022). Exploration of Adverse Childhood Experiences (ACEs) and Health Risk Behaviors (HRBs) in Male Recidivist Violent

Offenders: Indian Scenario. *Journal of Child & Adolescent Trauma*, *15*(3), 639–652. https://doi.org/10.1007/s40653-021-00434-1

Nagata, J. M., Smith, N., Sajjad, O. M., Zamora, G., Raney, J. H., Ganson, K. T., Testa, A., Vittinghoff, E., & Jackson, D. B. (2023). Adverse childhood experiences and sipping alcohol in U.S. children: Findings from the Adolescent Brain Cognitive Development Study. *Preventive Medicine Reports*, *32*, 102153–102153. https://doi.org/10.1016/j.pmedr.2023.102153

Narayan, A. J., Lieberman, A. F., & Masten, A. S. (2021). Intergenerational transmission and prevention of adverse childhood experiences (ACEs). *Clinical Psychology Review*, *85*, 101997–101997. https://doi.org/10.1016/j.cpr.2021.101997

Navalta, C. P., McGee, L., & Underwood, J. (2018). Adverse Childhood Experiences, Brain Development, and Mental Health: A Call for Neurocounseling. *Journal of Mental Health Counseling*, *40*(3), 266–278. https://doi.org/10.17744/mehc.40.3.07

Nuylund-Gibson, K., & Young Choi, A. (2018). Ten frequently asked questions about latent class analysis. *Translational Issues in Psychological Science*, *4*(4), 440–461. https://doi.org/10.1037/tps0000176

Occupational employment and wages: 33-3051, Police and Sheriff's Patol Officers. (2021). United States Bureau of Labor Statistics. https://www.bls.gov/oes/current/oes333051.htm

Olsen, J. M. (2018). Integrative Review of Pregnancy Health Risks and Outcomes Associated with Adverse Childhood Experiences. *Journal of Obstetric, Gynecologic, and Neonatal Nursing*, *47*(6), 783–794. https://doi.org/10.1016/j.jogn.2018.09.005

Oshri, A., Gray, J. C., Owens, M. M., Liu, S., Duprey, E. B., Sweet, L. H., & MacKillop, J. (2019). Adverse Childhood Experiences and Amygdalar Reduction: High-Resolution

Segmentation Reveals Associations with Subnuclei and Psychiatric Outcomes. *Child Maltreatment*, *24*(4), 4. https://doi.org/10.1177/1077559519839491

Ouellet, M., Hashimi, S., Gravel, J., & Papachristos, A. V. (2019). Network exposure and excessive use of force: Investigating the social transmission of police misconduct. *Criminology & Public Policy*, *18*(3), 675–704. https://doi.org/10.1111/1745-9133.12459

Page, K. S., & Jacobs, S. C. (2011). Surviving the shift: Rural police stress and counseling services. *Psycological Services*, *8*(1), 12–22. https://doi.org/10.1037/a0021796

Panhwar, A. H., Ansari, S., & Shah, A. A. (2017). Post-positivisim: An effective paradigm for social and educational research. *International Research Journal of Arts and Humanities*, *45*(45), 253–260.

Panter-Brick, C., & Leckman, J. F. (2013). Resilience in child development: Interconnected pathways to wellbeing. *The Journal of Child Psychology and Psychiatry*, *54*, 333–336.

Papazoglou, K., & Andersen, J. P. (2014). A Guide to Utilizing Police Training As a Tool to Promote Resilience and Improve Health Outcomes Among Police Officers. *Traumatology (Tallahassee, Fla.)*, *20*(2), 103–111. https://doi.org/10.1037/h0099394

Papazoglou, K., Koskelainen, M., & Stuewe, N. (2019). Examining the Relationship Between Personality Traits, Compassion Satisfaction, and Compassion Fatigue Among Police Officers. *SAGE Open*, *9*(1), 1. https://doi.org/10.1177/2158244018825190

Parkes, R., Graham-Kevan, N., & Bryce, J. (2019). You don't see the world through the same eyes any more: The impact of sexual offending work on police staff. *The Police Journal: Theory, Practice and Principles*, *92*(4), 4. https://doi.org/10.1177/0032258X18812515

Parnes, M. F., & Schwartz, S. E. O. (2022a). Adverse childhood experiences: Examining latent classes and associations with physical, psychological, and risk-related outcomes in

adulthood. *Child Abuse & Neglect*, *127*, 105562–105562. https://doi.org/10.1016/j.chiabu.2022.105562

Parnes, M. F., & Schwartz, S. E. O. (2022b). Adverse childhood experiences: Examining latent classes and associations with physical, psychological, and risk-related outcomes in adulthood. *Child Abuse & Neglect*, *127*, 105562–105562. https://doi.org/10.1016/j.chiabu.2022.105562

Pate, A. M., & Fridell, L. A. (1995). Toward the Uniform Reporting of Police Use of Force: Results of a National Survey. *Criminal Justice Review (Atlanta, Ga.)*, *20*(2), 123–145. https://doi.org/10.1177/073401689502000203

Patterson, G. (2002). Predicting the effects of military service experience on stressful occupational events in police officers. *Policing: An International Journal of Police Strategies and Management*, *25*(3), pp. 602-618.

Patterson, S., & King, W. R. (2023). Culture and well-being among sworn officers: An empirical examination. *Policing : An International Journal of Police Strategies & Management*, *46*(1), 179–193. https://doi.org/10.1108/PIJPSM-06-2022-0078

Peeples, L. (2020). What the data say about police brutality and racial bias—And which reforms might work. *Nature (London)*, *583*(7814), 22–24. https://doi.org/10.1038/d41586-020-01846-z

Petrocelli, J. V. (2003). Hierarchical multiple regression in counseling research: Common problems and possible remedies. *Measurement and Evaluation in Counseling*, *36*(1), 9–36.

Petruccelli, K., Davis, J., & Berman, T. (2019). Adverse childhood experiences and associated health outcomes: A systematic review and meta-analysis. *Child Abuse & Neglect, 97*, 104127. https://doi.org/10.1016/j.chiabu.2019.104127

Phythian, R., Birdsall, N., Kirby, S., Cooper, E., Posner, Z., & Boulton, L. (2022). Developments in UK police wellbeing: A review of blue light wellbeing frameworks. *Police Journal (Chichester), 95*(1), 24–49. https://doi.org/10.1177/0032258X211073003

Pietrzak, R. H., & Southwick, S. M. (2011). Psychological resilience in OEF-OIF veterans: Application of a novel classification approach and examination of demographic and psycholsocial correlates. *Journal of Affective Disorders*, *133*(3), 560–568.

Polizzi, C. P., & Lynn, S. J. (2021). Regulating Emotionality to Manage Adversity: A Systematic Review of the Relation Between Emotion Regulation and Psychological Resilience. *Cognitive Therapy and Research*, *45*(4), 577–597. https://doi.org/10.1007/s10608-020-10186-1

Pooley, J. A., & Cohen, L. (2012). Resilience: A definition in context. *The Australian Community Psychologist*, *22*(1), 30–37.

Porcu, M., & Giambona, F. (2017). Introduction to latent class analysis with applications. *The Journal of Early Adolescence*, *37*(1), 129–158. https://doi.org/10.1177/0272431616648452

Powell, M. B., Guadagno, B. L., & Cassematis, P. (2013). Workplace stressors for investigative interviewers of child-abuse victims. *Policing: An International Journal of Police Strategies & Management*, *36*(3), 3. https://doi.org/10.1108/PIJPSM-05-2012-0039

Queirós, C., Passos, F., Bártolo, A., Faria, S., Fonseca, S. M., Marques, A. J., Silva, C. F., & Pereira, A. (2020). Job Stress, Burnout and Coping in Police Officers: Relationships and

Psychometric Properties of the Organizational Police Stress Questionnaire. *International Journal of Environmental Research and Public Health*, *17*(18), 6718. https://doi.org/10.3390/ijerph17186718

Quidé, Y., Girshkin, L., Watkeys, O. J., Carr, V. J., & Green, M. J. (2021). The relationship between cortisol reactivity and emotional brain function is differently moderated by childhood trauma, in bipolar disorder, schizophrenia and healthy individuals. *European Archives of Psychiatry and Clinical Neuroscience*, *271*(6), 1089–1109. https://doi.org/10.1007/s00406-020-01190-3

Rafail, P., Soule, S. A., & McCarthy, J. D. (2012). Describing and Accounting for the Trends in US Protest Policing, 1960—1995. *The Journal of Conflict Resolution*, *56*(4), 736–765. https://doi.org/10.1177/0022002711431793

Ramey, L., Sandra, Perkhounkova, D., Yelena, Hein, A., Maria, Chung, A., Sophia, Franke, A., Warren, & Anderson, A., Amanda. (2016). Building Resilience in an Urban Police Department. *Journal of Occupational and Environmental Medicine*, *58*(8), 8. https://doi.org/10.1097/JOM.0000000000000791

Ramiro, L. S., Madrid, B. J., & Brown, D. W. (2010). Adverse childhood experiences (ACE) and health-risk behaviors among adults in a developing country setting. *Child Abuse & Neglect*, *34*(11), 842–855. https://doi.org/10.1016/j.chiabu.2010.02.012

Reiner, R. (2017). Is Police Culture Cultural? *Policing : A Journal of Policy and Practice*, *11*(3), 236–241. https://doi.org/10.1093/police/paw046

Reisner, S. L., Biello, K., Perry, N. S., Gamarel, K. E., & Mimiaga, M. J. (2014). A Compensatory Model of Risk and Resilience Applied to Adolescent Sexual Orientation

Disparities in Nonsuicidal Self-Injury and Suicide Attempts. *American Journal of Orthopsychiatry*, *84*(5), 545–556. https://doi.org/10.1037/ort0000008

Reny, T., & Newman, B. (2021). The Opinion-Mobilizing Effect of Social Protest against Police Violence: Evidence from the 2020 George Floyd Protests. *The American Political Science Review*, *115*(4), 1499–1507. https://doi.org/10.1017/S0003055421000460

Rockwell, A. R., Bishopp, S. A., & Orrick, E. A. (2021). Do policy and training changes influence patterns of police use of force? An interrupted time-series analysis. *Policing : An International Journal of Police Strategies & Management*, *44*(3), 469–482. https://doi.org/10.1108/PIJPSM-07-2020-0128

Romosiou, V., Brouzos, A., & Vassilopoulos, S. P. (2019). An integrative group intervention for the enhancement of emotional intelligence, empathy, resilience and stress management among police officers. *Police Practice & Research*, *20*(5), 460–478. https://doi.org/10.1080/15614263.2018.1537847

Ross, A., & Willson, V. L. (2017). Hierarchical Multiple Regression Analysis Using at Least Two Sets of Variables (In Two Blocks). In A. Ross & V. L. Willson (Eds.), *Basic and Advanced Statistical Tests: Writing Results Sections and Creating Tables and Figures* (pp. 61–74). SensePublishers. https://doi.org/10.1007/978-94-6351-086-8_10

Rutter, M. (1987). PSYCHOSOCIAL RESILIENCE AND PROTECTIVE MECHANISMS. *American Journal of Orthopsychiatry*, *57*(3), 316–331. https://doi.org/10.1111/j.1939-0025.1987.tb03541.x

Rutter, M., Yule, B., Quinton, D., Rowlands, O., Yule, W., & Berger, M. (1974). Attainment and adjustment in two geographical areas: Some factors counting for area differences. *British Journal of Psychiatry*, *125*, 520–533.

Sachser, C., Berliner, L., Holt, T., Jensen, T. K., Jungbluth, N., Risch, E., Rosner, R., & Goldbeck, L. (2017). International development and psychometric properties of the Child and Adolescent Trauma Screen (CATS). *Journal of Affective Disorders*, *210*, 189–195. https://doi.org/10.1016/j.jad.2016.12.040

Salmon, S., Taillieu, T. L., Stewart-Tufescu, A., MacMillan, H. L., Tonmyr, L., Gonzalez, A., & Afifi, T. O. (2023). Stressors and symptoms associated with a history of adverse childhood experiences among older adolescents and young adults during the COVID-19 pandemic in Manitoba, Canada. *Health Promotion and Chronic Disease Prevention in Canada*, *43*(1), 27–39. https://doi.org/10.24095/hpcdp.43.1.03

Samson, B., Iniguez, K., & Gosalvez, A. (2019) Relationship between adverse childhood experiences and resilience in agents of protection. *Pediatrics*, *144*(6), https://doi.org/10.1542/peds.144.2MA1.6

Sánchez, J., Estrada-Hernández, N., Booth, J., & Pan, D. (2021). Factor structure, internal reliability, and construct validity of the Brief Resilience Scale (BRS): A study on persons with serious mental illness living in the community. *Psychology and Psychotherapy*, *94*(3), 620–645. https://doi.org/10.1111/papt.12336

Schafer, E. S. (2021). Adverse childhood experiences and risky behaviors in male college students. *Journal of American College Health*, *ahead-of-print*(ahead-of-print), 1–9. https://doi.org/10.1080/07448481.2021.1950731

Schickedanz, A., Escarce, J. J., Halfon, N., Sastry, N., & Chung, P. J. (2021). Intergenerational Associations between Parents' and Children's Adverse Childhood Experience Scores. *Children (Basel)*, *8*(9), 747. https://doi.org/10.3390/children8090747

Semeijn, J. H., Caniëls, M. C. J., & Kooistra, D. (2019). Cross-lagged effects of resilience and indicators of sustainable employability. *Policing: An International Journal*, *42*(6), 6. https://doi.org/10.1108/PIJPSM-01-2019-0003

Shane, J. M. (2010). Organizational stressors and police performance. *Journal of Criminal Justice*, *38*, 807–818. https://doi.org/10.1016/j.jcrimjus.2010.05.008

Shernock, S. (2017). Changing uniforms: a study of the perspectives of law enforcement officers with and without different military background on the effects of combat deployment on policing. *Criminal Justice Policy Review*, *28*(1), pp. 61-86.

Shin, S. H., McDonald, S. E., & Conley, D. (2018). Patterns of adverse childhood experiences and substance use among young adults: A latent class analysis. *Addictive Behaviors*, *78*, 187–192. https://doi.org/10.1016/j.addbeh.2017.11.020

Sigad, L. I. (2021). "It gave me the strength and will to continue and to overcome": Police officers constructing resilience while under threat from criminals. *Policing : An International Journal of Police Strategies & Management*, *44*(1), 93–105. https://doi.org/10.1108/PIJPSM-01-2020-0004

Simon, A., Cage, J., & Akinkugbe, A. A. (2021). Adverse Childhood Experiences and Oral Health Outcomes in U.S. Children and Adolescents: A Cross-Sectional Study of the 2016 National Survey of Children's Health. *International Journal of Environmental Research and Public Health*, *18*(23), 12313. https://doi.org/10.3390/ijerph182312313

Skarupski, K. A., Parisi, J. M., Thorpe, R., Tanner, E., & Gross, D. (2016). The association of adverse childhood experiences with mid-life depressive symptoms and quality of life among incarcerated males: Exploring multiple mediation. *Aging & Mental Health*, *20*(6), 655–666. https://doi.org/10.1080/13607863.2015.1033681

Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The brief resilience scale: Assessing the ability to bounce back. *International Journal of Behavioral Medicine*, *15*(3), 3. https://doi.org/10.1080/10705500802222972

Smith, C. J., Han, Y., Dupré, K. E., & Sears, G. J. (2022). Perceived organizational support and its interaction with voice on police officers' organizational cynicism, stress and emotional exhaustion. *Policing : An International Journal of Police Strategies & Management*, *45*(2), 200–217. https://doi.org/10.1108/PIJPSM-07-2021-0093

Smith, C. S., Carrico, C. K., Goolsby, S., & Hampton, A. C. (2020). An analysis of resilience in dental students using the Resilience Scale for Adults. *Journal of Dental Education*, *84*(5), 566–577. https://doi.org/10.1002/jdd.12041

Soer, R., Dijkstra, M. W. M. C. S., Bieleman, H., Stewart, R. E., Reneman, M. F., Oosterveld, F. G. J., & Schreurs, K. M. G. (2019). Measurement properties and implications of the Brief Resilience Scale in healthy workers. *Journal of Occupational Health*, *61*(3), 3. https://doi.org/10.1002/1348-9585.12041

Sollie, H., Kop, N., & Euwema, M. C. (2017). Mental Resilience of Crime Scene Investigators: How Police Officers Perceive and Cope With the Impact of Demanding Work Situations. *Criminal Justice and Behavior*, *44*(12), 12. https://doi.org/10.1177/0093854817716959

Somaini, L., Donnin, C., Manfredini, M., Raggi, M. A., Saracino, M. A., Gerra, M. L., Amore, M., Leonardi, C., Serpoloni, G., & Gerra, G. (2011). Adverse childhood experiences (ACEs), genetic polymorphisms and neurochemical correlates in experimentation with psychotropic drugs among adolescents: Passing the Knife Edge in Adolescence: Brain Pruning and Specification of Individual Lines of Development. *Neuroscience and Biobehavioral Reviews*, *35*(8), 1771–1778.

Song, W., & Qian, X. (2020). Adverse Childhood Experiences and Teen Sexual Behaviors: The Role of Self-Regulation and School-Related Factors. *The Journal of School Health*, *90*(11), 830–841. https://doi.org/10.1111/josh.12947

Southwick, S. M., Bonanno, G. A., Masten, A. S., Panter-Brick, C., & Yehuda, R. (2014a). Resilience definitions, theory, and challenges: Interdisciplinary perspectives. *European Journal of Psychotraumatology*, *5*(1), 25338–14. https://doi.org/10.3402/ejpt.v5.25338

Southwick, S. M., Bonanno, G. A., Masten, A. S., Panter-Brick, C., & Yehuda, R. (2014b). Resilience definitions, theory, and challenges: Interdisciplinary perspectives. *European Journal of Psychotraumatology*, *5*(1), 1. https://doi.org/10.3402/ejpt.v5.25338

Stanhope, K. K., Cammack, A. L., Perreira, K. M., Fernández-Rhodes, L., Cordero, C., Gallo, L. C., Isasi, C. R., Castañeda, S. F., Daviglus, M. L., Kominiarek, M. A., & Suglia, S. F. (2020). Adverse childhood experiences and lifetime adverse maternal outcomes (gestational diabetes and hypertensive disorders of pregnancy) in the Hispanic Community Health Study/Study of Latinos. *Annals of Epidemiology*, *50*, 1–6. https://doi.org/10.1016/j.annepidem.2020.08.004

Stelnicki, A. M., Jamshidi, L., Fletcher, A. J., & Carleton, R. N. (2021). Evaluation of Before Operational Stress: A Program to Support Mental Health and Proactive Psychological Protection in Public Safety Personnel. *Frontiers in Psychology*, *12*, 511755–511755. https://doi.org/10.3389/fpsyg.2021.511755

Stern, S. B., & Galietta, M. (2019). *Evidence-Based Psychological Interventions to Promote Officer Resiliency* (revised, pp. 550–563). Routledge. https://doi.org/10.4324/9780429264108-26

Sterrett-Hong, E. M., Kincaid, C., Hardaway, C. R., Adams, M., MacFarlane, M., & Jones, D. J. (2020). Individual- and Family-Level Correlates of Socio-Emotional Functioning among African American Youth from Single-Mother Homes: A Compensatory Resilience Model. *Journal of Family Issues*, *41*(8), 1355–1384. https://doi.org/10.1177/0192513X19891461

Stewart-Tufescu, A., Struck, S., Taillieu, T., Salmon, S., Fortier, J., Brownell, M., Chartier, M., Yakubovich, A. R., & Afifi, T. O. (2022). Adverse Childhood Experiences and Education Outcomes among Adolescents: Linking Survey and Administrative Data. *International Journal of Environmental Research and Public Health*, *19*(18), 11564. https://doi.org/10.3390/ijerph191811564

Tawa, J. (2022). Racial Essentialism and Stress: A Deadly Combination for Prospective Police Officers' Encounters with Black Suspects. *Race and Social Problems*. https://doi.org/10.1007/s12552-022-09356-5

Thomas-Argyriou, J. C., Letourneau, N., Dewey, D., Campbell, T. S., & Giesbrecht, G. F. (2021). The role of HPA-axis function during pregnancy in the intergenerational transmission of maternal adverse childhood experiences to child behavior problems. *Development and Psychopathology*, *33*(1), 284–300. https://doi.org/10.1017/S0954579419001767

Thornton, M. A., & Herndon, J. (2016). Emotion Regulation in Police Officers Following Distress: Effects of Tenure and Critical Incidents. *Journal of Police and Criminal Psychology, 31*(4), 304–309. https://doi.org/10.1007/s11896-015-9186-1

Turecki, G., & Meaney, M. J. (2016). Effects of the social environment and stresss on bluccocorticoid receptor gene mythylation: A systematic review. *Biological Psychiatry, 79*, 87–96.

Ungar, M. (2012). *The Social Ecology of Resilience: A Handbook of Theory and Practice* (1st ed.). New York, NY : Springer New York : Imprint: Springer.

van Der Meulen, E., van Der Velden, P. G., Setti, I., & van Veldhoven, M. J. P. M. (2018). Predictive value of psychological resilience for mental health disturbances: A three-wave prospective study among police officers. *Psychiatry Research, 260,* 486–494. https://doi.org/10.1016/j.psychres.2017.12.014

van Gelderen, B. R., Bakker, A. B., Konijn, E. A., & Demerouti, E. (2011). Daily suppression of discrete emotions during the work of police service workers and criminal investigation officers. *Anxiety, Stress, & Coping*, *24*(5), 5. https://doi.org/10.1080/10615806.2011.560665

Varker, T., Dennison, M. J., Bancroft, H., Forbes, D., Nursey, J., Sadler, N., Creamer, M., Khoo, A., Metcalf, O., Putica, A., Pedder, D. J., & Phelps, A. J. (2022). Mental health, operational stress, and organizational stress among sworn and unsworn police personnel. *Traumatology (Tallahassee, Fla.)*. https://doi.org/10.1037/trm0000399

Veteran's benefits, Title 38 C.F.R. Sect. 101 (2022). (2022). https://uscode.house.gov/view.xhtml?req=granuleid:USC-prelim-title38-section101&num=0&edition=prelim

Violanti, J. M. (2006). The Police: Perspectives on Trauma and Resiliency. *Traumatology, 12*(3), 3. https://doi.org/10.1177/1534765606296998

Violanti, J. M., Burchfiel, C. M., Hartley, T. A., Mnatsakanova, A., Fekedulegn, D., Andrew, M. E., Charles, L. E., & Vila, B. J. (2009). Atypical Work Hours and Metabolic Syndrome Among Police Officers. *Archives of Environmental & Occupational Health*, *64*(3), 3. https://doi.org/10.1080/19338240903241259

Violanti, J. M., Fekedulegn, D., Andrew, M. E., Charles, L. E., Hartley, T. A., Vila, B., & Burchfiel, C. M. (2012). Shift work and the incidence of injury among police officers. *American Journal of Industrial Medicine*, *55*(3), 3. https://doi.org/10.1002/ajim.22007

Violanti, J. M., Fekedulegn, D., Charles, L. E., Andrew, M. E., Hartley, T. A., Mnatsakanova, A., & Burchfiel, C. M. (2008). Suicide in Police Work: Exploring Potential Contributing Influences. *American Journal of Criminal Justice*, *34*(1–2), 1–2. https://doi.org/10.1007/s12103-008-9049-8

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*, *33*(3), 3. https://doi.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), 4. https://doi.org/10.1177/1098611118774764

Violanti, J. M., Mnatsakanova, A., Gu, J. K., Service, S., & Andrew, M. E. (2021a). Adverse childhood experiences and police mental health. *Policing : An International Journal of Police Strategies & Management*, *44*(6), 1014–1030. https://doi.org/10.1108/PIJPSM-06-2021-0085

Violanti, J. M., Mnatsakanova, A., Gu, J. K., Service, S., & Andrew, M. E. (2021b). Adverse childhood experiences and police mental health. *Policing : An International Journal of Police Strategies & Management*, *44*(6), 1014–1030. https://doi.org/10.1108/PIJPSM-06-2021-0085

Violanti, J., Mnatskanova, A., Michael, A., Tara, H., Desta, F., Penelope, B., & Cecil, B. (2014). 0037 Associations of stress, anxiety, and resiliency in police work. *Occupational and Environmental Medicine (London, England)*, *71*(Suppl 1), A3–A3. https://doi.org/10.1136/oemed-2014-102362.8

Waddington, P. A. J. (1999). Police (canteen) sub-culture. An appreciation. *British Journal of Criminology*, *39*(2), 287–309. https://doi.org/10.1093/bjc/39.2.287

Wallace, M., Felker-Kantor, E., Madkour, A., Ferguson, T., Welsh, D., Molina, P., & Theall, K. P. (2020). Adverse Childhood Experiences, Smoking and Alcohol Use, and Allostatic Load Among People Living with HIV. *AIDS and Behavior*, *24*(6), 1653–1662. https://doi.org/10.1007/s10461-019-02684-5

Wan, Y., Chen, R., Ma, S., McFeeters, D., Sun, Y., Hao, J., & Tao, F. (2019). Associations of adverse childhood experiences and social support with self-injurious behaviour and suicidality in adolescents. *British Journal of Psychiatry*, *214*(3), 146–152. https://doi.org/10.1192/bjp.2018.263

Weller, B. E., Bowen, N., & Faubert, S. J. (2020). Latent class analysis: A guide to best practice. *Journal of Black Psychology*, *46*(4), 287–311. https://doi.org/10.1177/0095798420930932

Weltman, G., Lamon, J., Freedy, E., & Chartrand, D. (2014a). Police Department Personnel Stress Resilience Training: An Institutional Case Study. *Global Advances in Health and Medicine*, *3*(2), 72–79. https://doi.org/10.7453/gahmj.2014.015

Weltman, G., Lamon, J., Freedy, E., & Chartrand, D. (2014b). Police Department Personnel Stress Resilience Training: An Institutional Case Study. *Global Advances in Health and Medicine*, *3*(2), 72–79. https://doi.org/10.7453/gahmj.2014.015

Werner, E. E., & Smith, R. S. (2001). *Journeys from Childhood to Midlife: Risk, Resilience, and Recovery*. Cornell University.

White, A. K., Shrader, G., & Chamberlain, J. (2016). Perceptions of Law Enforcement Officers in Seeking Mental Health Treatment in a Right-to-Work State. *Journal of Police and Criminal Psychology*, *31*(2), 2. https://doi.org/10.1007/s11896-015-9175-4

Williams, K. L. (2003). Peel's Principles and Their Acceptance by American Police: Ending 175 Years of Reinvention. *Police Journal (Chichester)*, *76*(2), 97–120. https://doi.org/10.1177/0032258X0307600202

Willis, J. J. (2022). "Culture eats strategy for breakfast": An in-depth examination of police officer perceptions of body-worn camera implementation and their relationship to policy, supervision, and training. *Criminology & Public Policy*, *21*(3), 713–737. https://doi.org/10.1111/1745-9133.12591

Wolfe, S., Rojek, J., McLean, K., & Alpert, G. (2020). Social Interaction Training to Reduce Police Use of Force. *The Annals of the American Academy of Political and Social Science*, *687*(1), 124–145. https://doi.org/10.1177/0002716219887366

Wood, G., Tyler, T. R., & Papachristos, A. V. (2020). Procedural justice training reduces police use of force and complaints against officers. *Proceedings of the National Academy of Sciences - PNAS*, *117*(18), 9815–9821. https://doi.org/10.1073/pnas.1920671117

Wright, T. A., & Cropanzano, R. (2000). Psychological Well-Being and Job Satisfaction as Predictors of Job Performance. *Journal of Occupational Health Psychology*, *5*(1), 84–94. https://doi.org/10.1037/1076-8998.5.1.84

Xue, J.-M., Lin, P.-Z., Sun, J.-W., & Cao, F.-L. (2017). Disrupted Executive Function and Aggression in Individuals With a History of Adverse Childhood Experiences: An Event-Related Potential Study. *The Journal of Nervous and Mental Disease*, *205*(12), 942–951. https://doi.org/10.1097/NMD.0000000000000743

Yehuda, R., Dadkalakis, N. P., Desarnaud, F., Makotkine, I., Lehrner, A. L., & Koch, E. (2013). Epigenetic biomarkers as predictors and correlates of symptom improvement following psychotherapy in combat veterans with PTSD. *Frontiers in Psychiatry*, *4*, 118.

Yuan, C., Wang, Z., Inslicht, S., Mccaslin, S., Metzler, T., Henn-Haase, C., Apfel, B., Tong, H., Neylan, T., Fang, Y., & Marmar, C. (2011). Protective factors for posttraumatic stress disorder symptoms in a prospective study of police officers. *Psychiatry Research*, *188*(1), 1. https://doi.org/10.1016/j.psychres.2010.10.034

Yuan, M., Qin, F., Xu, C., & Fang, Y. (2022). Heterogeneous adverse childhood experiences and cognitive function in an elderly Chinese population: A cohort study. *BMJ Open*, *12*(6), e060477–e060477. https://doi.org/10.1136/bmjopen-2021-060477

Zarse, E. M., Neff, M. R., Yoder, R., Hulvershorn, L., Chambers, J. E., & Chambers, R. A. (2019). The adverse childhood experiences questionnaire: Two decades of research on childhood trauma as a primary cause of adult mental illness, addiction, and medical

diseases. *Cogent Medicine*, *6*(1), 1581447. https://doi.org/10.1080/2331205X.2019.1581447

Zhang, L., Mersky, J. P., Gruber, A. M. H., & Kim, J.-Y. (2022). Intergenerational Transmission of Parental Adverse Childhood Experiences and Children's Outcomes: A Scoping Review. *Trauma, Violence, & Abuse*, 152483802211261–15248380221126186. https://doi.org/10.1177/15248380221126186

Zhang, N., Gao, M., Yu, J., Zhang, Q., Wang, W., Zhou, C., Liu, L., Sun, T., Liao, X., & Wang, J. (2022). Understanding the association between adverse childhood experiences and subsequent attention deficit hyperactivity disorder: A systematic review and meta-analysis of observational studies. *Brain and Behavior*, *12*(10), e32748-n/a. https://doi.org/10.1002/brb3.2748

Zimmerman, M. A. (2013). Resiliency Theory: A Strengths-Based Approach to Research and Practice for Adolescent Health. *Health Education & Behavior*, *40*(4), 4. https://doi.org/10.1177/1090198113493782

Zimmerman, M. A., Stoddard, S. A., Eisman, A. B., Caldwell, C. H., Aiyer, S. M., & Miller, A. (2013). Adolescent Resilience: Promotive Factors That Inform Prevention. *Child Development Perspectives*, *7*(4), 215–220. https://doi.org/10.1111/cdep.12042

APPENDICES

Appendix A

Informed Consent

PROJECT TITLE

Understanding the Role of Adverse Childhood Experiences on Resilience in Police Officers: A Quantitative Approach

INTRODUCTION

In this study, I aim to understand how certain demographic variables and Adverse Childhood Experiences influence levels of resilience in police officers.

RESEARCHERS

Dissertation Chair: Dr. Gülşah Kemer, Department of Counseling and Human Services, Darden College of Education and Professional Studies, Old Dominion University

Student Researcher: Wayne Handley, M.S.Ed., Doctoral Candidate, Department of Counseling and Human Services, Darden College of Education and Professional Studies, Old Dominion University. Wayne Handley is also an Honorably discharged veteran of the United States Marine Corps, a former Nationally Registered Emergency Medical Technician-Paramedic, and a 24-year veteran law enforcement officer still serving in Virginia.

DESCRIPTION OF THE RESEARCH STUDY

Police officers are subject to a variety of stressors not only from job-related events resulting in direct or vicarious trauma exposure (Andersen & Papazoglou, 2014; Brown et al., 1999; Iversen et al., 2008) but also from family and personal concerns (Burke, 1998; Page & Jacobs, 2011), and administrative pressures originating from within their own agencies (Violanti et al., 2018; White et al., 2016). Constant exposure to trauma has been shown to have a negative impact on the physiological and psychological wellbeing of police officers (Violanti et al., 2018). Recently, researchers have started to shift the focus from detrimental factors that influence police officer behaviors or wellbeing to a more positive focus on how to improve overall wellbeing of police officers (Phythian et al., 2022). These studies include investigations into the concept of resilience and how it impacts officer's wellness (Romosiou et al., 2019) and how resilience development can increase officer performance (Arnetz et al., 2008). This study will be one of the very first to efforts to explore the components of resilience. Results of this study may be used for

recruitment, training, policy decisions, and counseling services designed specifically for law enforcement officers. This study is approved by Old Dominion University's Institutional Review Board (IRB Protocol STUDY 2160293-1).

Your participation in this study is completely voluntary. You can decide to withdraw from the study at any time. You will present interest in participating in this study by clicking the following link and completing the demographic questionnaire. Once you complete the demographic questionnaire, you will be directed to a second questionnaire that will ask several questions related to your own life experiences and your own perspectives on how you respond to adversity, trauma, or stress.

INCLUSION CRITERIA

You must be actively serving as a law enforcement officer, have previously served as a law enforcement officer, or retired from serving as a law enforcement officer. The term law enforcement officer means any officer, agent, or employee of a Federal, State, or local government, or an Indian tribe authorized by law or by a government agency to engage in or supervise the prevention, detection, or investigation of any violation of criminal law.

EXCLUSIONARY CRITERIA

Law enforcement recruits, probation and parole officers, and civilian support personnel are excluded from this study.

RISKS AND BENEFITS

There is a minimal risk to participating in this study as there will be questions asked of you that may trigger memories of previous experiences that are considered harmful. ***In the event of such experiences, participants can receive immediate assistance by calling 1-800-COPLINE (1-800-267-5463) or dial 988 to access the Suicide and Crisis Hotline, or text BLUE to 741741 to access the Law Enforcement Officers Crisis Text Line.***

NEW INFORMATION

If the researcher finds new information during this study that would reasonably change your decision about participating, they will provide it to you.

CONFIDENTIATLITY

The researcher is using an online software called Qualtrics to collect data. Qualtrics will provide full anonymity since no identifying information will be asked from the researcher. The researcher and dissertation chair (PI) will be the only ones who have access to the data collected

using Qualtrics. The data will be analyzed in an aggregated manner and stored in a password protected computer with double log in for three years after the study is completed, according to the federal IRB regulations. Your department or agency will not have access to this information or knowledge of your participation in this study.

WITHDRAWAL PRIVILEGE

You have the right to refuse to participate or to withdraw from this study at any time, without penalty. If you do withdraw, it will not affect you in any way. If you choose to withdraw, you may request that any of your data that has been collected be destroyed unless it is in a de-identifiable state.

VOLUNTARY CONSENT

By signing this form, you are saying several things. You are saying that you have read this form or have had it read to you, that you are satisfied that you understand this form, the research study, and its risks and benefits. The researcher should have answered any questions you may have had about the research. If you later have questions, then the researcher should be able to answer them. Please contact Wayne Handley at whand001@odu.edu and/or Dr. Gülşah Kemer at gkemer@odu.edu (dissertation chair).

If at any time you feel pressured to participate, or if you have any questions about your rights or this form, then you should contact Dr. Adam Rubenstein at arubenst@odu.edu or 757-683-3686, or the Old Dominion University Office of Research at 757-683-3460.

Importantly, by signing below, you are telling the researcher YES, that you agree to participate in this study. The researcher should give you a copy of this form for your records. ***There is a minimal risk to participating in this study as there will be questions asked of you that may trigger memories of previous experiences that are considered harmful In the event of such experiences, participants can receive immediate assistance by calling 1-800-COPLINE (1-800-267-5463) or dial 988 to access the Suicide and Crisis Hotline, or text BLUE to 741741 to access the Law Enforcement Officers Crisis Text Line.***

Subject's Printed Name and Signature	Date

INVESTIGATOR'S STATEMENT

I certify that I have explained to this subject the nature and purpose of this research, including benefits, risks, costs, and any experimental procedures. I have described the rights and protections afforded to human subjects and have done nothing to pressure, coerce, or falsely entice this subject into participating. I am aware of my obligations under state and federal laws and promise compliance. I have answered the subject's questions and have encouraged them to ask additional questions at any time during the course of this study. I have witnessed the above signature on this consent form.

Investigator's Printed Name and Signature	Date

Appendix B

Demographic Information

The following questions are to gather demographic information about you, your personal history, and your service as a law enforcement officer.

1. What is your age?
2. What is your ethnic background?
    a. Asian/Pacific Islander
    b. Black
    c. Hispanic or Latin X
    d. Multiracial
    e. White
3. What is your gender identity?
    a. Female
    b. Male
    c. Non-binary
    d. Transgender
    e. Prefer Not to Share
    f. Other _____
4. What is your highest level of education?
    a. General Equivalency Degree
    b. High School Diploma
    c. Bachelor's Degree
    d. Master's Degree or higher
5. What is your veteran status?
    a. Military service at any time OR still serving
    b. No military services at any time
6. What is your current relationship status?
    a. Single
    b. Married
    c. Divorced
    d. Committed relationship but not married

7. Do you have children?
    a. Yes
    b. No
8. What type of community did you grow up in?
    a. Urban
    b. Suburban
    c. Rural
9. Do you consider yourself a religious person or a person of faith or spirituality?
    a. Yes, I am a religious person and practice my religion regularly
    b. Yes, I am a religious person but I do not practice my religion regularly
    c. Yes, I am person of faith and/or spirituality but do not practice to any specific religion
    d. No, I do not consider myself a person of faith or spirituality nor one that practices any particular religion
10. Do you use humor to cope with everyday stressors?
    a. Yes
    b. No, not really
11. Do you use alcohol or other substances to cope with everyday stressors?
    a. I consume alcohol every day
    b. I consume alcohol socially only
    c. I consume substances other than alcohol to cope with stressors
    d. I do not consume alcohol or other substances at all to cope with stressors
12. If you consume substances other than alcohol as a coping method, which do you use?
    a. THC
    b. CBD
    c. Prescription medications (non-opioid)
    d. Prescription medication (opioids)
    e. Other
13. Do you have someone in your life you consider a mentor that you can go to for advice or guidance?
    a. Yes

b. No

14. Do you consider yourself an optimistic person?
    a. Yes, all the time
    b. Yes, but not all the time
    c. Not at all
15. Do you share your work-related experiences with your intimate partner or immediate family?
    a. Yes, I share experiences regularly
    b. Sometimes I share experiences with my family
    c. I never discuss my experiences from work with my family
16. What is your ***current status*** of service in law enforcement?
    a. I am an actively serving law enforcement officer
    b. I am a former actively serving law enforcement officer *who did not retire*, but no longer works in law enforcement
    c. I retired from an active law enforcement career and no longer work in law enforcement
17. How long have you served as a law-enforcement officer? Please consider *all periods of service even if you have had broken-service time*.
18. What is the size of the department where you currently serve?
    a. 1-69 officers
    b. 70-99 officers
    c. 100-499 officers
    d. 500-999 officers
    e. Over 1000 officers
19. Which type of agency are you currently serving? Regardless of previous service, please select the type of agency you are serving in ***now***.
    a. Federal law-enforcement agency
    b. State law-enforcement agency
    c. Local law-enforcement agency
    d. Tribal law-enforcement agency
    e. State-authorized law-enforcement agency (with arrest powers)

20. What geographic area is your agency located within the United States?
    a. Northeast U.S.
    b. Mid-Atlantic U.S.
    c. Southeastern U.S.
    d. Midwestern U.S.
    e. Pacific Northwest U.S.
    f. West Coast U.S.
    g. Southwestern U.S.
    h. Outside of continental U.S.
21. What type of shifts do you work:
    a. Days only
    b. Nights only
    c. Evenings only
    d. Rotating days, nights, or evenings on regular schedules
    e. Days, nights, or evenings depending on the needs of the department, but not on a regular schedule
22. Are you serving in a patrol assignment, administrative assignment, other specialty assignment (criminal investigations, full-time SWAT, narcotics investigation, community resource officer, etc.)
    a. Patrol assignment
    b. Administrative assignment
    c. Specialty assignment
23. Does your agency support officer mental health and/or wellbeing?
    a. Yes, there are regular programs and services that support officers
    b. Yes, there a few resources for officers but not many
    c. No, there are no resources to support officers
24. In your opinion, what may be the primary reason you believe officers do not take advantage of services offered by their agency for mental health and or wellbeing?
    a. Fear of what other officers will think
    b. Fear of what the command staff will think
    c. Fear of losing out on transfer or promotional opportunities

   d. Fear of having their badge and/or service weapon taken from them if they take advantage of services (even if only temporary)

25. If you are retired, how long did you serve as a law-enforcement officer? Please consider all periods of service even if you have had broken-service time.
26. If you are not actively serving and you did not retire any law enforcement agency, how many years did you serve as a law-enforcement officer?
27. What is the size of the department where you served? If you served in more than one, please select the size of the agency you served in *longest*.
    a. 1-69 officers
    b. 70-99 officers
    c. 100-499 officers
    d. 500-999 officers
    e. Over 1000 officers
28. Which type of agency did you serve? If more than one, please list the type of agency you served the *longest*.
    a. Federal law-enforcement agency
    b. State law-enforcement agency
    c. Local law-enforcement agency
    d. Tribal law-enforcement agency
    e. State-authorized law-enforcement agency to include school or college campus agency (with arrest powers)
29. What geographic area was your agency located within the United States?
    a. Northeast U.S.
    b. Mid-Atlantic U.S.
    c. Southeastern U.S.
    d. Midwestern U.S.
    e. Pacific Northwest U.S.
    f. West Coast U.S.
    g. Southwestern U.S.
    h. Outside of continental U.S.

30. Please categorize your type of retirement. (If you left law enforcement before retiring, skip to #30):
    a. Normal service retirement
    b. Early service retirement **not** for medical reasons
    c. Early service retirement for medical reasons
31. If you retired early ***not*** for medical reasons, what prompted you to retire from law enforcement? Please select the most probable reason.
    a. Law enforcement became burdensome on my family
    b. I did not feel supported by my supervisors and/or command staff
    c. I wanted to change careers and had the service time to retire early
32. If you left law enforcement ***before*** retiring, what prompted you to leave law enforcement? Please select the most probable reason. Please select the answer that fits your situation best even if you have more than one reason.
    a. Law enforcement became burdensome on my family
    b. Injury or illness that prevented me from continuing to serve
    c. I did not feel supported by my supervisors and/or command staff
    d. I felt that law enforcement was not a good career choice and changed jobs
33. What type of shifts did you mostly work:
    a. Days only
    b. Nights only
    c. Evenings only
    d. Rotating days, nights, or evenings on regular schedules
    e. Days, nights, or evenings depending on the needs of the department, but not on a regular schedule
34. Did you serve mostly in a patrol assignment, administrative assignment, specialty assignment (criminal investigations, full-time SWAT, narcotics investigation, community resource officer, etc.) or a combination of multiple types of assignments?
    a. Patrol assignment
    b. Administrative assignment
    c. Specialty assignment
    d. Combination of multiple assignments

35. Did your agency support officer mental health and/or wellbeing?
    a. Yes, there were regular programs and services that supported officers
    b. Yes, there were a few resources for officers but not many
    c. No, there were no resources to support officers
36. In your opinion, what may be the primary reason you believe officers did not take advantage of services offered by their agency for mental health and or wellbeing?
    a. Fear of what other officers will think
    b. Fear of what the command staff will think
    c. Fear of losing out on transfer or promotional opportunities
    d. Fear of having their badge and/or service weapon taken from them if they take advantage of services (even if only temporary)

Appendix C

Adverse Childhood Experiences Questionnaire (ACE-Q)

Adverse Childhood Experience (ACE) Questionnaire

Finding your ACE Score ra hbr 10 24 06

While you were growing up, during your first 18 years of life:

1. Did a parent or other adult in the household **often** …
   Swear at you, insult you, put you down, or humiliate you?
   or
   Act in a way that made you afraid that you might be physically hurt?
   Yes No If yes enter 1 _____

2. Did a parent or other adult in the household **often** …
   Push, grab, slap, or throw something at you?
   or
   Ever hit you so hard that you had marks or were injured?
   Yes No If yes enter 1 _____

3. Did an adult or person at least 5 years older than you **ever**…
   Touch or fondle you or have you touch their body in a sexual way?
   or
   Try to or actually have oral, anal, or vaginal sex with you?
   Yes No If yes enter 1 _____

4. Did you **often** feel that …
   No one in your family loved you or thought you were important or special?
   or
   Your family didn't look out for each other, feel close to each other, or support each other?
   Yes No If yes enter 1 _____

5. Did you **often** feel that …
   You didn't have enough to eat, had to wear dirty clothes, and had no one to protect you?
   or
   Your parents were too drunk or high to take care of you or take you to the doctor if you needed it?
   Yes No If yes enter 1 _____

6. Were your parents **ever** separated or divorced?
   Yes No If yes enter 1 _____

7. Was your mother or stepmother:
   Often pushed, grabbed, slapped, or had something thrown at her?
   or
   Sometimes or often kicked, bitten, hit with a fist, or hit with something hard?
   or
   Ever repeatedly hit over at least a few minutes or threatened with a gun or knife?
   Yes No If yes enter 1 _____

8. Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?
   Yes No If yes enter 1 _____

9. Was a household member depressed or mentally ill or did a household member attempt suicide?
   Yes No If yes enter 1 _____

10. Did a household member go to prison?
    Yes No If yes enter 1 _____

Now add up your "Yes" answers: _____ This is your ACE Score

Appendix D

Connor-Davidson Resilience Scale – 10

Connor-Davidson Resilience Scale 10 (CD-RISC-10) ©

initials ☐☐☐ *ID#* ☐☐☐☐☐☐☐ *date* ☐☐/☐☐/☐☐☐☐ *visit* ☐☐ *age* ☐☐

Please indicate how much you agree with the following statements as they apply to you over the last month. If a particular situation has not occurred recently, answer according to how you think you would have felt.

---

		not true at all (0)	rarely true (1)	sometimes true (2)	often true (3)	true nearly all the time (4)
1.	I am able to adapt when changes occur.	☐	☐	☐	☐	☐
2.	I can deal with whatever comes my way.	☐	☐	☐	☐	☐
3.	I try to see the humorous side of things when I am faced with problems.	☐	☐	☐	☐	☐
4.	Having to cope with stress can make me stronger.	☐	☐	☐	☐	☐
5.	I tend to bounce back after illness, injury, or other hardships.	☐	☐	☐	☐	☐
6.	I believe I can achieve my goals, even if there are obstacles.	☐	☐	☐	☐	☐
7.	Under pressure, I stay focused and think clearly.	☐	☐	☐	☐	☐
8.	I am not easily discouraged by failure.	☐	☐	☐	☐	☐
9.	I think of myself as a strong person when dealing with life's challenges and difficulties.	☐	☐	☐	☐	☐
10.	I am able to handle unpleasant or painful feelings like sadness, fear, and anger.	☐	☐	☐	☐	☐

Add up your score for each column 0 + ____ + ____ + ____ + ____

Add each of the column totals to obtain CD-RISC score = _____

Appendix E

Cognitive Emotional Regulation Questionnaire

CERQ

How do you cope with events?

Everyone gets confronted with negative or unpleasant events now and then and everyone responds to them in his or her own way. By the following questions you are asked to indicate what you generally think, when you experience negative or unpleasant events.

	(almost) never	some-times	regu-larly	often	(almost) always
1. 1 feel that I am the one to blame for it	1	2	3	4	5
2. I think that I have to accept that this has happe ned	1	2	3	4	5
3. I often think about how I feel about wha t I have experienced	1	2	3	4	5
4. I think of nicer things than what I have expe rienced	1	2	3	4	5
5. I think of what I can do best	1	2	3	4	5
6. I think I can learn something from the situation	1	2	3	4	5
7. I think that it all could have been much worse	1	2	3	4	5
8. I often think that what I have expe rienced is much worse than what others have experienced	1	2	3	4	5
9. I feel that others are to blame for it	1	2	3	4	5
10. I feel that I am the one who is responsible for what has happened	1	2	3	4	5
11. I think that I have to accept the situation	1	2	3	4	5
12. I am preoccupied with what I think and feel about what I have e xperienced	1	2	3	4	5
13. I think of pleasant things that have nothing to do with it	1	2	3	4	5
14. I think about how I can best cope with the situation	1	2	3	4	5
15. I think that I can become a stronge r person as a result of what ha s happened	1	2	3	4	5
16. I think that other people go through much worse expe riences	1	2	3	4	5
17. I keep thinking about how terrible it is what I have experienced	1	2	3	4	5
18. I feel that others are responsible for what has happene d	1	2	3	4	5
19. I think about the mistakes I have made in this matter	1	2	3	4	5
20. I think that I cannot change anything about it	1	2	3	4	5
21. I want to understand why I fee l the way I do about what I have e xperienced	1	2	3	4	5
22. I think of something nice instead of what has happened	1	2	3	4	5
23. I think about how to change the situation	1	2	3	4	5
24. I think that the situation also has its positive sides	1	2	3	4	5
25. I think that it hasn't been too bad compared to other things	1	2	3	4	5
26. I often think that what I have experie nced is the worst that can happen to a person	1	2	3	4	5
27. I think about the mistakes others have made in this matter	1	2	3	4	5
28. I think that basically the cause must lie within myself	1	2	3	4	5
29. I think that I must learn to live with it	1	2	3	4	5
30. I dwell upon the feelings the situation has evoked in me	1	2	3	4	5
31. I think about pleasant experience s	1	2	3	4	5
32. I think about a plan of what I can do be st	1	2	3	4	5
33. I look for the positive sides to the matter	1	2	3	4	5
34. I tell myself that there are wor se things in life	1	2	3	4	5
35. I continually think how horrible the situation has been	1	2	3	4	5
36. I feel that basically the ca use lies with others	1	2	3	4	5

Thank you for filling out the questionnaire!

Appendix F

Life Experience and Resilience Questionnaire

Part 1: Life Experiences

For the following 10 questions, please answer either "Yes" or "No" to the question asked. Please ***consider your own life experiences*** and apply them to the question asked when selecting your answer.

While you were growing up, during your first 18 years of life:

1. Did a parent or other adult in the household **often** swear at you, insult you, put you down, humiliate you **or** act in a way that may you afraid that you might be physically hurt?
   Yes ☐ No ☐
2. Did a parent or other adult in the household **often** push, grab, slap, throw something at you, **or ever** hit you so hard that you had marks or were injured?
   Yes ☐ No ☐
3. Did an adult or person at least 5 years older than you **ever** touch or fondle you or have you touch their body in a sexual way **or** try to or actually have oral, anal, or vaginal sex with you?
   Yes ☐ No ☐
4. Did you **often** feel that no one in your family loved you, thought you were important or special **or** your family didn't look out for each other, feel close to each other, or supported each other?
   Yes ☐ No ☐
5. Did you **often** feel that you didn't have enough to eat, had to wear dirty clothes, had no one to protect you, **or** your parents were too drunk or high to take care of you or take you to the doctor if you needed it?
   Yes ☐ No ☐
6. Were your parents **ever** separated or divorced?
   Yes ☐ No ☐
7. Was your mother or stepmother **often** pushed, grabbed, slapped, or had something thrown at her **or sometimes or often** kicked, bitten, hit with a fist, or this with something hard, **or ever** repeatedly his over at least a few minutes or threatened with a gun or knife?

Yes ☐ No ☐

8. Did you live with anyone who was a problem drinker or alcoholic or who used street drugs?
   Yes ☐ No ☐
9. Was a household member depressed or mentally ill or did a household member attempt suicide?
   Yes ☐ No ☐
10. Did a household member go to prison?
    Yes ☐ No ☐

Part 2: Resilience

For the following 10 questions, please indicate how much you agree with the following statements as they apply to you over the last ***month***. If a particular situation has not occurred recently, answer according to how you think you would have felt.

1. I am able to adapt when changes occur.
   Not true at all ☐ Rarely true ☐ Sometimes true ☐ Often true ☐ True nearly all the time ☐
2. I can deal with whatever comes my way.
   Not true at all ☐ Rarely true ☐ Sometimes true ☐ Often true ☐ True nearly all the time ☐
3. I try to see the humorous side of things when I am faced with problems.
   Not true at all ☐ Rarely true ☐ Sometimes true ☐ Often true ☐ True nearly all the time ☐
4. Having to cope with stress can make me stronger.
   Not true at all ☐ Rarely true ☐ Sometimes true ☐ Often true ☐ True nearly all the time ☐
5. I tend to bounce back after illness, injury, or other hardships.
   Not true at all ☐ Rarely true ☐ Sometimes true ☐ Often true ☐ True nearly all the time ☐
6. I believe I can achieve my goals, even if there are obstacles.
   Not true at all ☐ Rarely true ☐ Sometimes true ☐ Often true ☐ True nearly all the time ☐

7. Under pressure, I stay focused and think clearly.

   Not true at all ☐ Rarely true ☐ Sometimes true ☐ Often true ☐ True nearly all the time ☐

8. I am not easily discouraged by failure.

   Not true at all ☐ Rarely true ☐ Sometimes true ☐ Often true ☐ True nearly all the time ☐

9. I think of myself as a strong person when dealing with life's challenges and difficulties.

   Not true at all ☐ Rarely true ☐ Sometimes true ☐ Often true ☐ True nearly all the time ☐

10. I am able to handle unpleasant or painful feelings like sadness, fear, and anger.

    Not true at all ☐ Rarely true ☐ Sometimes true ☐ Often true ☐ True nearly all the time ☐