

ADVERSE CHILDHOOD EVENTS AND COMPLEX POST TRAUMATIC STRESS
DISORDER SYMPTOMOLOGY IN CRIMINAL JUSTICE STUDENTS VERSUS
NON-CRIMINAL JUSTICE STUDENTS

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DEDICATION

To my Lord and Savior. Lord, thank you for allowing me to serve you, for healing me and guiding me, and for all the blessings you have bestowed upon me. I pray I will be used to bless others in Your Name. To my beautiful family whose love and support through all things allows me to fly when I have no wings. To my beloved David Sullivan... you are the quiet one who makes dreams come true for others, unsung hero, rock star, mensch. To all who have been told they never could... And to Dr. Robert Galloway, whose kindness gave a traumatized little girl hope that one day, she too, could become anything she wanted to be.

ABSTRACT

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Adverse Childhood Experiences (ACEs) have been correlated with mental health issues, including Post-traumatic Stress Disorder (PTSD) and Complex Post-traumatic Stress Disorder (CPTSD) in police officers after active duty, although research has not focused on symptomology prior to active service. Criminal Justice university majors and non-Criminal Justice majors were surveyed using the ACE questionnaire and the International Trauma Questionnaire (ITQ) to measure symptomology of PTSD and CPTSD. No statistically significant relationship was found between choice of major and ACE score, indicating that students pursuing a career in police work did not report more ACEs than other majors. This finding differs from prior research; implicating that aggregate trauma from active police service as well as ACE score may impact PTSD and CPTSD symptomology longitudinally. PTSD and CPTSD symptomology as measured on the ITQ did not differ according to major in college students. A robust correlation was shown between ACEs score on PTSD or CPTSD experiences on the ITQ, which is in keeping with prior research. Individual ACEs were not studied, and future research is needed to ascertain if certain types of ACEs are higher in students seeking a career in police work than those in other disciplines. Data from this study suggests that university students remand with PTSD and CPTSD symptoms across majors.

KEY WORDS: Adverse Childhood Experiences; ACE; PTSD; CPTSD; Police officer; International trauma questionnaire; ITQ; Childhood trauma; Career choice; Counselor education.

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PREFACE

This dissertation is original, unpublished, independent work by the author, Laurel Kathleen Fauster.

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CHAPTER I

Introduction

What makes a person choose a career wherein they will experience trauma, both direct and vicarious, all day, every day? I first became interested in this topic years ago as a rookie police officer. The veteran officers did not call law enforcement ‘police work’, but instead referred to the profession as, ‘the job’. Having always been an avid listener, and a keeper of secrets, I was privy to stories of the childhoods of my fellow police officers. Most related stories of abject abuse and neglect. I began to wonder whether they chose ‘the job’, or ‘the job’ chose them.

Researchers have correlated childhood trauma with career choice, wherein those exposed to childhood trauma attributed their career choice in human services to their experiences of trauma in their family of origin (Rompf & Royce, 2013; Triplett et al., 2013). Police officers who experience trauma before active duty are more likely to find meaning and emotional growth from trauma experienced during their tenure as a police officer (Burke & Shakespeare-Finch, 2011). Individuals who have experienced childhood trauma may be attempting to re-write the trauma narrative through choosing a career like police work (Pines, 2005). Studies of police cadets found that 58 % of recruits report experiencing childhood trauma (Burke, 2009). Further, police cadets report experiencing trauma prior to employment as law enforcement officers at a rate of 70.6 % (Buchanan et al., 2001).

Though these researchers found that police officers were likely to report trauma prior to service, and how this trauma may have affected the officers, they did not measure Adverse Childhood Experiences (ACEs) in police cadets prior to service (Buchanan et

al., 2001; Burke, 2009; Burke & Shakespeare-Finch, 2011; Pines, 2005). These prior studies utilized the Traumatic Stress Schedule (TSS), which ascertains trauma history over the lifespan (Norris, 1990). The TSS does not focus on childhood trauma in particular, nor does the instrument measure helplessness, fear, horror, or feeling neglected or uncared about (Norris, 1990). It is of note that childhood trauma is correlated to higher Post Traumatic Stress Disorder (PTSD) and Complex Post Traumatic Stress Disorder (CPTSD) symptomology after a short time in police service on active duty (Buchanan et al., 2001; Yuan et al., 2011). This correlation behooves the measuring of childhood trauma prior to service as a police officer to better inform police officers, human resources, researchers, and mental health practitioners (Buchanan et al., 2001; Yuan et al., 2011). The ACE questionnaire measures childhood trauma in particular, and measures neglect and negative feelings about the importance of the self in childhood, making the ACE a superior instrument to detect childhood trauma in police officers before active service (Norris, 1990).

Police officers, when compared to a control group, "...have difficulties in accepting and tolerating negative emotions, supporting themselves in distressing situations, and confronting emotionally challenging situations" (Berking et al., 2010, p. 329). The same difficulties experienced by police officers are similar to symptoms reported by persons experiencing the effects of childhood trauma (Banducci et al., 2014; Burns et al., 2012; Choi & Oh, 2014). Childhood trauma as well as police officer experiences are both correlated with affect dysregulation and reactivity in distressing situations (Banducci et al., 2014; Burns et al., 2012; Choi & Oh, 2014). Childhood trauma has a correlation to Disturbances in Self-Organization (DSO). DSOs include:

affective dysregulation, negative self-concept, and disturbances in relationships (Cloitre et al., 2018). The presence of the three DSOs is the basis for the diagnosis of CPTSD (Cloitre et al., 2018). Prior studies of police officers using the TSS do not assess for DSOs, which makes the International Trauma Questionnaire a better instrument to detect CPTSD symptoms in police officers prior to active service.

Further, researchers of police officers that report prior service trauma do not assess the cadets for PTSD nor CPTSD symptomology prior to active duty (Burke, 2009; Burke & Shakespeare-Finch, 2011; Vacon et al., 2016). PTSD symptomology is related to single traumatic events, or a short term, single series of these events, such as being deployed to a war zone (American Psychiatric Association, 2012). CPTSD is usually experienced during the early, formative childhood years, and involves long term trauma exposure, often involving physical, sexual, long-term neglect, or emotional abuse (World Health Organization, 2018). Though it is documented that mental health problems and CPTSD/PTSD in police officers are correlated with childhood trauma, the researchers do not address trauma symptomology prior to active service as a police officer (Wang et al., 2010). Instead, researchers have focused on symptomology longitudinally, after being on active duty as a police officer, or on post-traumatic growth in police cadets as a desirable attribute toward their future performance as police officers (Burke, 2009; Burke et al., 2006; Burke & Shakespeare-Finch, 2011; Vachon et al., 2016; Wang et al., 2010). The possibility of CPTSD symptoms being present in individuals prior to their actively serving as a police officer is neglected in the literature.

Statement of the Problem

Police officers work in trauma-rich environments, with that trauma being direct, anticipated, or vicarious (Hartley et al., 2013; Van der Kolk et al., 1996). A study headed by John M. Violanti at the University of Buffalo, in which over 400 police officers participated resulted in findings that police officers have higher cortisol levels, higher blood pressure, and a higher than average propensity toward cardiac events (University at Buffalo, 2008). The researchers also reported that police officers have higher rates of depression, trauma-related issues, and suicidality, “The pressures of law enforcement put officers at risk for high blood pressure, insomnia, increased levels of destructive stress hormones, heart problems, post-traumatic stress disorder and suicide” (University at Buffalo, 2008, para.1). Not only do the stressors of the profession put officers at higher risk for PTSD, police officers struggle with PTSD at a higher rate than the general populace (McCanlies et al., 2017; Wang et al., 2010). Prolonged childhood trauma predisposes an individual to developing CPTSD, especially if perpetrated within the caregiver system (Iverson et al., 2008). Given the significant risk of police officers having experienced PTSD, it is problematic that childhood trauma is not studied in police officers.

The literature addressing police officers with CPTSD focuses on veterans in police work, thus leaving unexplored the presence of CPTSD symptomology prior to active duty police work (McCanlies et al., 2017; Wang et al., 2010). The lack of data pertaining to CPTSD is symptomology is problematic for a number of reasons. First, there is no data to ascertain whether the police officer developed CPTSD symptomology before the onset of active duty. Second, there is no data to determine if active duty may

exacerbate CPTSD symptomology, or third, if the condition developed after the onset of active duty as a police officer, in which case it would likely not be considered CPTSD. Given that, as stated above, police officers have a higher incidence of CPTSD than do their civilian counterparts, the gap in the literature as to when this symptomology begins is of importance to mental health practitioners as well as researchers.

Purpose of the Study

The first purpose of this study is to ascertain to what degree Adverse Childhood Experiences (ACEs) are reported in students who will be pursuing a career in law enforcement, prior to joining the active duty police work, as opposed to students who will not be pursuing a career in law enforcement. The second purpose of this study is to ascertain the extent of differences in PTSD and CPTSD symptomology, respectively, as measured by the ITQ between criminal justice majors and non-criminal justice majors. Lastly, the third purpose of this study is to find to what extent ACE scores are associated with PTSD and CPTSD experiences in Criminal Justice majors and non-Criminal Justice majors. Through knowing the extent to which Adverse Childhood Experiences and PTSD/CPTSD symptomology is experienced prior to active duty as a police officer, rationale is provided for the design of mental health interventions for police officers that target the particular type of trauma suffered by the individual.

Rationale of the Study

Given that researchers have found evidence suggesting that often police cadets enter the force with complex trauma backgrounds from childhood, it is important that mental health interventions in police work and other high-risk occupations be proactive. In identifying the presence of CPTSD before active duty, trauma-informed mental health

interventions can be implemented during the officer's tenure, which may help mitigate the effects of workplace trauma. Through targeting the particular type of childhood trauma experienced by the officer candidate, the effects of childhood trauma may be ameliorated through therapy and other mental health interventions. Officer candidates may also be forewarned of possible mental health issues in the future, and seek mental health treatment in a more preventative mode.

It is therefore posited that through study of reported ACEs and present CPTSD symptoms, mental health interventions may be developed and applied to assist in amelioration of CPTSD and other mental health issues in police officers before these symptoms become acute. Through this study, results may provide a basis on which to advocate for proactive mental health interventions for police officers and other high-risk occupations. Proactive care as opposed to reactive care not only benefits the police candidate; it provides better services for the community at large. A healthy and emotionally regulated police officer is a more capable public servant, a safer officer for both him or herself and the public, and more effective in carrying out the stressful duties police officers face. This study will inform not only mental health practitioners, but counselor educators, in that it will provide more specific, trauma informed data regarding ACEs, CPTSD, and police officers. These reasons provide the rationale for the study to add to the existing literature.

Definition of Terms

Police Officer

For the purpose of this study “Police Officer” will be defined congruent to the Texas Code of Criminal Procedure, to wit:

Sheriffs, [and] their deputies, and those reserve deputies who hold a permanent peace officer license issued under Chapter 415, Government Code; constables, [and] deputy constables, and those reserve deputy constables who hold a permanent peace officer license issued under Chapter 415, Government Code; marshals or police officers of an incorporated city, town, or village, and those reserve municipal police officers who hold a permanent peace officer license issued under Chapter 415, Government Code; rangers and officers commissioned by the Public Safety Commission and the Director of the Department of Public Safety; investigators of the district attorneys’, criminal district attorneys’, and county attorneys’ offices; law enforcement agents of the Texas Alcoholic Beverage Commission; each member of an arson investigating unit commissioned by a city, a county, or the state; officers commissioned under Section 37.081, Education Code, or Subchapter E, Chapter 51, Education Code. (Texas Code of Criminal Procedure, Article 2.12, 2017)

Law Enforcement

Law Enforcement is defined as, “The generic name for the activities of the agencies responsible for maintaining public order and enforcing the law, particularly the activities of prevention, detection, and investigation of crime and the apprehension of criminals” (The U.S. Department of Justice, Office of Justice Programs, Bureau of Justice

Statistics, 2020). The term “Police Officer” will be used synonymously with “Law Enforcement Officer”, and “police work” with “law enforcement”.

Criminal Justice Majors and Non-Criminal Justice Majors

Any student aged 18 or over and enrolled in the university. Students who are likely to be police officers are identified in this dissertation as Criminal Justice majors, although not all Criminal Justice majors will become police officers. Students who are not likely to be police officers are identified in this dissertation as non-Criminal Justice majors.

Trauma

One of the most commonly accepted definitions of psychological trauma is the psychological distress that follows experiencing a traumatic situation (American Psychiatric Association, 2013). This distress emerges from perceptions of danger, such as threat to life or limb, feelings of terror and dread, witnessing violence, natural catastrophes, emotional abuse or neglect, sexual assault, psychological abuse, physical abuse, or any distressing, situation (American Psychiatric Association, 2013).

Post-traumatic Stress Disorder (PTSD)

PTSD is a psychiatric disorder that develops after a person experiences a serious traumatic event. The traumatic event involves either threat to the person’s physical, mental, or emotional well-being, or witnessing such an event. The event may include being the victim of a crime or physical or sexual assault, or events such as war, terrorism, or natural disasters (Parekh, 2017). People with PTSD may relive the traumatic event(s), feel anger or sadness, experience nightmares, and feel detached from their lives and loved ones (Parekh, 2017). The Diagnostic and Statistical Manual of Mental Disorders, 5

Edition defines PTSD as a traumatic event, followed by at least one intrusion symptom (such as flashbacks or nightmares), one avoidance symptom (such as avoiding places or things that remind the person of the event), and two negative alterations in cognition and mood (such as anger, anxiety, horror, or shame) (American Psychiatric Association, 2013). Alterations in arousal and reactivity are present, the symptoms must be present for more than one month, not due to substances or illness, and must create distress or functional impairment. (American Psychiatric Association, 2013)

Complex Post-traumatic Stress Disorder (CPTSD)

Herman, along with other experts on long-term trauma, asserts that the symptomology seen in long-term trauma requires a separate diagnosis from PTSD (Herman, 1997; van der Kolk, 2005). Symptoms of CPTSD include the symptoms seen in PTSD diagnosis, along with additional symptoms of difficulties in emotional regulation, dissociative symptoms, pathology in the area of self-perception, distorted perceptions of perpetrator(s), problems in the area of relationships with others, and loss or disturbance in the sufferer's system of meaning (PTSD: National Center for PTSD, 2017). Complex trauma arises from trauma over time, typically in childhood within the caregiver system, wherein the person has no way to escape or no power to stop the trauma from occurring (Herman, 1992; Kisiel et al., 2014). Further, complex trauma, especially in childhood, leads to avoidance, manifesting in dissociative symptomology (Herman, 1992; Kisiel et al., 2014).

Adverse Childhood Experience

Childhood trauma is defined as Adverse Childhood Experiences, “Adverse Childhood Experiences (ACEs) are potentially traumatic events that can have negative, lasting effects on health and well-being. These experiences range from physical, emotional, or sexual abuse to parental divorce or the incarceration of a parent or guardian” (Sacks et al., 2014, p. 1). There are 10 childhood experiences measured as ACEs: Personal trauma and family of origin trauma (Felitti et al., 1998). The personal traumas are physical abuse, sexual abuse, verbal abuse, and emotional or physical neglect. The five family traumas are having a parent incarcerated, losing a parent through death, divorce, or being abandoned by a parent, a mother who is the victim of domestic abuse, or a parent who has a drug addiction or alcoholism (Felitti et al., 1998). Four or more ACEs is often used as the clinical threshold, indicating the likelihood of particularly negative outcomes. The higher the number of ACEs, the higher the incidences of not only trauma-related disorders, but also of heart disease, cancer, obesity, alcoholism, smoking, and other deleterious adult mental and physical health problems (Felitti et al., 1998).

Dissociation

The American Psychiatric Association defines dissociative disorders as those that, “cause a disruption of and/or discontinuity in the normal integration of consciousness, memory, identity, emotion, perception, body representation, motor control, and behavior” (American Psychiatric Association, 2013, p. 291). Derealization and depersonalization are dangerous and may portend further victimization and abuse. Dissociation in adulthood may result in an individual not being able to identify whether or not a situation is dangerous (Briere et al., 2017). Emotional regulation can be affected, and a person

experiencing dissociative symptoms may have an intense emotional reaction to reminders of traumatic memories (Briere et al., 2017). Due to the failure to be able to recognize dangerous situations or persons, the sufferer may find him or herself re-victimized over, and over again (Briere et al., 2017).

Theoretical Framework- Complex Trauma

Researcher Judith Herman conceptualized long-term, repetitive or aggregate trauma as “complex trauma” (Herman, 1992). Herman posits that the effects of this type of trauma experience results in, “...three broad areas of disturbance that transcend simple PTSD” (Herman, 1992, p. 379). Herman defined and conceptualized these areas of disturbance into three categories: Symptomatic, personality, and identity and relational issues (Herman, 1992). Symptoms of complex trauma are more chronic, wider in scope, and more distressing, with psychological and emotional issues often accompanied by, or manifested in, somatic complaints (Herman, 1992). Personality, sense of self, and identity disorders are prevalent, as are attachment and difficulties with the manner in which a survivor of complex trauma conceptualizes and relates to others (Herman, 1992). Further, the risk of re-victimization and self-harm is greater in survivors of complex, long-term trauma, especially during childhood (Herman, 1992). Complex trauma is most prevalent in those who suffered longstanding abuse in childhood, particularly if that abuse is inflicted within the caregiver system (Herman, 1992).

Adverse Childhood Experiences have a graded relationship to mental and physical health effects, as the number and duration of Adverse Childhood Experiences rises, so does the risk and likelihood of negative outcomes (Felitti et al., 1998). An individual having an ACE score of 4 or greater on the Adverse Childhood Experiences

questionnaire is over 400% more likely to suffer from depression, and "...1220% more likely to attempt suicide than an individual with an ACE score of 0" (Felitti, 2002, p. 44). Depression and psychopathology rates in police officers are higher than in the community at large (Anderson & Papazoglou, 2015; Papazoglou & Chopko, 2017).

Chronic trauma in childhood leads to changes in the brain, notably, the grey matter (Clausen et al., 2019). In a study involving 577 participants, changes to the grey matter in the areas of the brain used in self-related information and emotional processing, as well as areas used in decision making, were predictive of the severity of trauma exposure (Clausen et al., 2019). The greater the exposure, the more changes found in the grey matter of the cingulate cortex, superior and inferior frontal gyri, insula, orbital gyrus, caudate, and palladium (Clausen et al., 2019). As these areas of the brain change, the resulting problems are seen in the areas of emotional processing and regulation, as well as decision making and reward processing (Clausen et al., 2019; van der Kolk, 1994). These changes are not limited to trauma occurring in childhood only, however the changes to the brain and the body are thought to be more egregious during the formative childhood years (van der Kolk, 1994). These changes to the brain make for hyper-aroused reactions to stimuli, as well as blunted reactions to stimuli that others would find alarming (van der Kolk, 1994).

Complex Post-traumatic Stress Disorder as Diagnostic Framework

In 2017 a study by McCanlies et al. purported that, "Police officers have higher rates of posttraumatic stress disorder (PTSD) and depression than the general population" (McCanlies et al., 2017). CPTSD may be a more accurate term for the symptomology suffered by police officers (Rudofossi, 2007). Rudofossi, a former police officer and now

psychologist states that, “CPTSD provides a better framework for working with police officers than traditional (or military post-Vietnam) PTSD models” (Rudofossi, 2007). Therefore, in the present study CPTSD will provide the theoretical framework regarding symptomology. The World Health Organization (WHO), International Classification of Diseases for Mortality and Morbidity Statistics, 11th revision (ICD-11), in section 6B41 characterizes CPTSD as follows:

All diagnostic requirements for PTSD are met. In addition, CPTSD is characterized by severe and persistent problems in affect regulation; beliefs about oneself as diminished, defeated or worthless, accompanied by feelings of shame, guilt or failure related to the traumatic event; and difficulties in sustaining relationships and in feeling close to others. These symptoms cause significant impairment in personal, family, social, educational, occupational or other important areas of functioning. (WHO, 2018)

Research Questions

Based on the review of the literature, and the gap in the research, the following research questions guide this study:

1. To what extent are there differences between Criminal Justice majors and non-Criminal Justice majors on the ACEs?
2. To what extent are there differences between Criminal Justice majors and non-Criminal Justice majors on PTSD and CPTSD as measured by the ITQ?
3. To what extent are ACE scores associated with PTSD and CPTSD experiences in Criminal Justice majors and non-Criminal Justice majors?

This study utilizes the Adverse Childhood Experiences (ACE) Inventory (CDC, 2009a, 2010a), and the International Trauma Questionnaire (ITQ) (Cloitre et al., 2018). Criminal Justice students likely pursuing a career as a police officer, and university students in other area of study that are likely not intending to become police officers will be surveyed to ascertain the number of ACEs they have experienced, as well as current PTSD and CPTSD symptomology. Further, which Adverse Childhood Experiences correlate with measures of PTSD or CPTSD symptoms will be examined in this study.

Limitations and Delimitations

The main limitation is generalizability. The sample is from a university population in the Southeastern part of the United States of America. The students surveyed will be university students that are majoring in Criminal Justice, and university students that are not majoring in Criminal Justice. This sample and the data collected may not generalize to the population at large, or to Criminal Justice majors and non-Criminal Justice majors at other institutions. Another limitation is the sample size, which was limited due to the number of students accessible to the researcher.

An internal limitation is that the subject matter of childhood trauma and trauma symptomology is a sensitive topic, and all participants may not answer truthfully. This internal limitation was addressed by gathering no demographic or other identifying information from participants other than asking whether their major was Criminal Justice or a major other than Criminal Justice. Further, resources for counseling are provided with the informed consent documents, as well as assurance that a participant may decline or halt participation in the study at any time. A delimitation is that this study seeks to record data from Criminal Justice majors and non-Criminal Justice majors in particular.

Assumptions

An assumption is that all participants will give thoughtful and honest answers on the survey instrument. Data collection is designed in such a manner as to keep the participants' confidential.

Organization of the Study

This dissertation is presented in three chapters. Chapter I includes the background of the study, and briefly examines the gaps in the literature on police officers and prior duty PTSD/CPTSD symptomology related to childhood trauma. This current lack of information regarding police officers and childhood trauma supports the purpose of the study, i.e., to understand the effect of ACEs and PTSD/CPTSD symptomology prior to police service. The background of the study, statement of the problem, purpose of the study, rationale of the study, definition of terms, theoretical framework, research questions, limitation and delimitations, assumptions, and the organization of the study are included. Chapter II includes a review of the literature. This literature review examines stress in children, Adverse Childhood Experiences, trauma and the brain, complex trauma, career choice and complex trauma, childhood trauma and mental health problems in police officers, and a summary of these findings. Chapter III describes the research questions and hypothesis, the research design, selection of participants, instruments, data collection and analysis processes, as well as a summary of the chapter. Chapter IV includes the results of the statistical analysis of the data collected from participants, as well as interpretation of that data. Chapter V presents the discussion of the results, the implications, and examines possibilities and recommendations for future research and study.

CHAPTER II

Review of the Literature

This literature review will examine research focused on Adverse Childhood Experiences (ACEs), PTSD, and CPTSD in Criminal Justice majors. The following databases were used in my search for literature: Academic Search Complete; Dissertations and Thesis–Full Text; Dissertations at Sam Houston State University’s Newton Gresham Library; Medline, PsychInfo, and EBSCO host-all databases. This study utilizes the search words: police, PTSD, CPTSD, Adverse Childhood Experiences, and Criminal Justice majors, along with variations of the terms and changing the order of words placed in each field. My search further expanded to include books published on police officers and trauma, articles in police journals, and other locations.

Types of Stress in Children

The National Scientific Council on the Developing Child describes three types of stress that children experience: positive stress, tolerable stress, and toxic stress (The Council, 2005). When a child has a brief, negative experience, like not being allowed to go outside, positive stress is experienced (Middlebrooks & Audage, 2008; Ryan et al., 2017). The child’s body responds with a hormonal change, increased heart rate, and the child experiences an emotional response. These situations are not harmful when the child has loving and nurturing caregivers, as the child learns how to regulate his or her emotional response. These stressors are an integral part of the developmental process for children, and necessary to learn coping skills (Middlebrooks & Audage, 2008; Ryan et al., 2017).

Tolerable stress occurs when the child experiences a, "...more intense but still relatively short-lived" stressor (Middlebrooks & Audage, 2008, p. 2). Tolerable stressors might include death, divorce, hurricanes, or losing a home to fire or other disaster (Middlebrooks & Audage, 2008; Ryan et al., 2017). These types of stressors are integrated into the child's experience with the support of nurturing caregivers, and in cases where the stressors are assimilated and processed, they can increase the resiliency of the child (Middlebrooks & Audage, 2008; Ryan et al., 2017). Tolerable stress can become toxic to a child, "...if the child lacks adequate support, tolerable stress can become toxic and lead to long-term negative health effects" (Middlebrooks & Audage, 2008, p. 3).

Toxic stress is the result of abject situations over time, a cumulative form of trauma (Middlebrooks & Audage, 2008; Ryan et al., 2017). Toxic stress can come from: abuse, neglect, lack of appropriate housing, malnutrition due to lack of food and resources, generational trauma, or any, "...intense adverse experiences that may be sustained over a long period of time" (Middlebrooks & Audage, 2008, p. 3). Toxic stress also occurs in homes where domestic violence is a factor (De Jong, 2016). In homes where domestic violence occurs, children are at higher risk for poly-victimization (De Jong, 2016). Poly-victimization is a situation in which children are exposed to multiple abusers or multiple forms of trauma over the formative years (Bucci et al., 2016; De Jong, 2016). Toxic stress in childhood has a "dose-response relationship", meaning that the more toxic stress experienced during early life, the higher the adverse effects over the lifespan (Bucci et al., 2016, p. 406).

Toxic stress changes the way the child's brain develops over time (Bucci et al., 2016; Middlebrooks & Audage, 2008; Ryan et al., 2017). Toxic stress in childhood can cause differences in brain formation, with less capability to process, and manage, stress. Further, these brain changes may leave the child with an over-reactive system, causing them to over-react with anger and fear to stressors into adulthood (Middlebrooks & Audage, 2008; Ryan et al., 2017). Children are unable to adapt and process this type of trauma, causing ill effects into adulthood, and, very often, early death (Middlebrooks & Audage, 2008; Ryan et al., 2017). These sustained stressors cause a maladaptive stress response (Bucci et al., 2016; Ryan et al., 2017).

If this maladaptive stress response takes place during the child's formative years, then, "long-term regulatory physiologic processes, and subsequently, can increase vulnerability to developmental, biological, mental, and behavioral adverse outcomes, resulting in an increased risk for chronic diseases in adulthood" (Bucci et al., 2016, p. 409). The negative effects of toxic stress permeate the development of the child on both a physiologic and psychological basis, which has ramifications for adult cognitive and emotional processing, as well as physiological changes which effect the health throughout adulthood (Navalta et al., 2018; Ryan et al., 2017). Toxic stressors in childhood are codified and simplified into ten Adverse Childhood Experiences or, ACEs (Felitti et al., 1998; Johnson et al., 2013).

Adverse Childhood Experiences

In a study conducted by Kaiser Permanente's Health Appraisal Clinic in San Diego, California, in conjunction with the Centers for Disease Control and Prevention 18,175 patients were surveyed in two waves, from the year 1995 to the year 1997, as to

their Adverse Childhood Experiences (Brown et al., 2009; Bucci et al., 2016; Felitti et al., 1998). Adverse Childhood Experiences may result in mental, physical, or emotional dysfunctions, as well as other negative life outcomes (Brown et al., 2009; Bucci et al., 2016; Felitti et al., 1998). In this study, data reflected that approximately 63.5% of adults have experienced at least one Adverse Childhood Experience, while approximately 12% of adults report 4 or more ACEs (Anda et al., 2009). Exposure to trauma in childhood increases the chance that a person will develop PTSD later in life when exposed to a separate traumatic experience in adulthood (McCrorry & Viding, 2015). Exposure to inescapable, prolonged trauma in childhood may result in Complex Post-traumatic Stress Disorder (CPTSD) symptomology in adulthood (Courtois & Ford, 2013).

Adverse Childhood Experiences (ACEs) directly impact the physical and mental health of an individual (Felitti et al., 1998). As the number, severity, and type of trauma goes up, so does the likelihood of substance abuse, alcoholism, smoking, heart disease, cancer, and mental illness, to name only a few negative health outcomes directly correlated to ACEs (Felitti et al., 1998). As the numbers of ACEs increases, so does the risk for depression, suicide attempts, sexual promiscuity, sexually transmitted diseases, smoking, and alcoholism (Dube et al., 2003). The higher the ACE score, the higher the risk factor for health problems (Dube et al., 2003). Adverse Childhood Experiences are also cumulative in nature, meaning that the more ACEs a child experiences, the more negative, life-long effects are possible (Dube et al., 2003; Felitti et al., 1998).

Children who experience one of the Adverse Childhood Experiences are more likely to also experience other Adverse Childhood Experiences, meaning that one type of maltreatment directly increases the risk for other forms of abuse or neglect, leading to

poly victimization (Chartier et al., 2010). Poly victimization occurs in a high percentage of children, “Sixty-four percent of children who had experienced any type of victimization also experienced another type of victimization in the same year” (Finkelhor et al., 2007). Continuous abuse and neglect can lead to a state of toxic stress in these children (Middlebrooks & Audage, 2008). The cumulative effects of risk factors leading to further abuse and neglect is referred to as the cumulative risk hypothesis (Sameroff, 2000). The cumulative risk hypothesis posits that as the number of risk factors rises, so does the chance that maltreatment, abuse, and/or neglect of the child will escalate and continue (Rutter, 1979; Sameroff, 2000; Solomon et al., 2016). The longer and more entrenched the pattern of abuse is, the more likely it will continue and the cycle propagates (Rutter, 1979; Sameroff, 2000; Solomon et al., 2016). The greater the number of Adverse Childhood Experiences and the longer the duration of these experiences, predicts a greater risk for clinical pathology (Rutter, 1979; Sameroff, 2000). As the cumulative effects stack up, the risk for being a victim of abuse in adulthood also rises.

When a child does not experience a healthy attachment to caregivers, and his or her environment is unstable and unpredictable, these adverse experiences prevent the child from forming a healthy sense of self, and how they fit into the world (Courtois & Ford, 2013). In a protective effort of the mind to escape the inescapable, the child may experience dissociative symptoms (Banyard et al., 2001; Lawson, 2017). Adult victims of childhood abuse and neglect have a greater chance of experiencing abuse in adulthood, with dissociative symptomology being a possible predictor of re-victimization (Banyard et al., 2001; Lawson, 2017). These dissociative symptoms are thought to be protective mechanisms.

The behaviors seen in survivors of cumulative Adverse Childhood Experiences are adaptive in nature, and not merely pathological (White, 2007). Personality traits notwithstanding, the dysfunctional patterns exhibited by these survivors were, at one time, very functional in the reality they experienced (White, 2007). The brain and limbic system of survivors of cumulative ACEs, as well as other bodily systems, create “maps” or patterns of behaviors and reactions (White, 2007). These brain and body maps become entrenched, and the adult child continues behaviors and reactions that are maladaptive, often throughout the lifetime (Oliver, 1993; White, 2007). Even the formulation of self, and self-perspective, is affected, leaving adult survivors of Adverse Childhood Experiences at very high risk for life-long mental, physical, and emotional issues, as well as repeated patterns of abuse and neglect toward their progeny (Oliver, 1993; White, 2007).

Trauma and the Brain

Jean-Martin Charcot lived between 1825-1893 and was a neurologist who worked with patients at the Salpêtrière Asylum beginning in 1862 (Helio et al., 2008). Charcot noticed that patients dissociated from their traumatic experiences through what was known as hysteria (Herman, 1992). This dissociative state, “...describe(s) both the problems of suggestibility in these patients, and the fact that hysterical attacks are dissociative problems - the results of having endured unbearable experiences” (van der Kolk et al., 1996, p. 50). Charcot surmised that the brain itself had undergone changes, and he would use hypnosis to take the patients through their trauma narratives, which helped relieve the hysterical, dissociative type symptoms (Herman, 1992). These early studies set the stage for modern understanding of trauma and how it affects the brain.

Changes in the structure of the brain correlate with childhood trauma (Bremner, 2006; Dunn et al., 2013; van der Kolk, 2007). One of the areas of the brain that shows measurable change with trauma is the hippocampus (Bremner, 2006). Hippocampal volume differs in persons suffering from PTSD and CPTSD, and those who do not suffer the effects of trauma (Bremner, 2006). The reduction of hippocampal volume in traumatized brains causes problems with the limbic system, (Bremner, 2006). The hippocampal deficit manifests in issues with emotional regulation, particularly anger and fear (Bremner, 2006). Memory encoding is disrupted, as is the retrieval of memory, especially memory surrounding the traumatic incident(s). Magnetic resonance images (MRI), “showed smaller volume of the hippocampus in PTSD, decreases in right hippocampal volume in the PTSD patients were associated with deficits in short-term memory” (Bremner, 2006, p. 81).

Chronic PTSD from childhood trauma is a factor in smaller hippocampal volume in both the right and left hemispheres of the brain (Kitayama et al., 2005). In a meta-analysis of 133 adults with chronic PTSD, 148 control subjects, and 53 traumatized child control subjects, hippocampal volume was reduced in the chronic PTSD adults whereas there was no significant reduction of hippocampal volume in either of the control groups. These results bolster the cumulative, lifelong effects of childhood trauma without remedial care (Kitayama et al., 2005). Hippocampal volume loss is only one way chronic trauma in childhood affects the brain.

A study using magnetic resonance imaging (MRI) examined the brains of children who had been exposed to abuse and compared these results with images of children who were not abused (DeBellis et al., 1999). The children who suffered abuse lost mass in the

brain's intracranial and cerebral volume. Further, "Brain volume robustly and positively correlated with age of onset of PTSD trauma and negatively correlated with duration of abuse" (DeBellis et al., 1999, p. 1271). In a similar study involving women who were childhood victims of severe sexual abuse, hippocampal volume on the left side of the hippocampus was reduced by approximately 5% (Stein et al., 1997). Reduction in hippocampal volume on the left side, "...correlated highly ($r_s = -.73$) with dissociative symptom severity, but not with indices of explicit memory functioning" (Stein et al., 1997, p. 76).

The brain changes in children who experience ongoing, prolonged trauma, and that changes the brain's reaction to new situations, with the brain function tending more to fight, flight or freeze, "a shift from a learning brain to a survival brain" (Lawson, 2017, p. 289). Situations that should trigger fear may fail to be perceived as dangerous, whereas situation that should not normally trigger a fear reaction seem unsafe. The very feeling of safety in and of itself, "...may trigger survival reactions" (Lawson, 2017, p. 290).

Complex Trauma

The study of trauma is not new. Johannes Hofer's 1688 dissertation on the effects of psychological trauma is arguably the first scientific study of the effects of trauma upon the human psyche. Hofer termed the disorder, "Nostalgia", after the Latin term for homesickness, to describe the malaise and melancholia of soldiers. Judith Herman, a professor of psychiatry at Harvard University, first used the terminology "CPTSD" (Herman, 1992). Symptomology of CPTSD differs from PTSD in that the symptoms are more perceptual than physical, and may or may not have a singular, "precursor event", as is currently required for the diagnosis of PTSD in the DSM-5 (American Psychiatric

Association, 2013). Herman proposed that CPTSD relates more to long, ongoing trauma over time rather than to a single event.

CPTSD differs from PTSD proper in several ways. CPTSD develops not from a single or limited period of experiencing traumatic stress, but rather from repeated, ongoing trauma exposure, such as child abuse or neglect (Herman, 1992). A lifestyle of abuse, most often beginning in childhood, causes CPTSD, not a single, identifiable event. For example, symptom severity differs between a childhood of chronic sexual abuse by a caregiver and experiencing a natural disaster or an in-home robbery and assault (Clausen et al., 2019). Although both trauma exposures can result in significant trauma symptoms, the former has a greater negative effect on the nervous system and the development of coping skills than the latter. CPTSD is a risk factor for future victimization (Anda & Brown, 2010; Herman, 1992; Young et al., 2017).

Symptomology of CPTSD include: Impaired affect modulation, self-destructive and impulsive behavior, dissociative symptoms, somatic complaints, feelings of ineffectiveness, shame, despair, or hopelessness, feeling permanently damaged, a loss of previously sustained beliefs, hostility, social withdrawal, feeling constantly threatened, impaired relationships with others, or a change from the individual's previous personality characteristics. (American Psychiatric Association, 2000).

Childhood trauma is a factor in the core components of CPTSD (Cook et al., 2005).

The symptomology required for this diagnosis includes the disturbances seen in PTSD, with the addition of, "...disturbances in self-organization reflected in emotion regulation, self-concept and relational difficulties" (Cloitre et al., 2014, p. 2). These symptoms include: emotional regulation issues, anger management problems, feelings of guilt and

shame, negative core beliefs and self-conceptualization, inability to form healthy attachments, and feelings of depersonalization and derealization, and dissociation (Cloitre et al., 2014; van der Kolk et al., 2005). This protracted expression of dysfunction is termed as “telescoping of trauma”

(Rudofossi, 2017, p. 17). In this expression, the trauma and grief from earlier in life telescopes over the lifespan, and becomes the lens through which an individual views life, others, and himself within that context (Rudofossi, 2007, 2011, 2017).

The regulation of emotional experience and affect are disrupted in CPTSD sufferers (Hyland et al., 2016). In children who have experienced abuse or neglect before the age of 14, 77% of these children manifested with symptoms of affect regulation disorder and anger management issues (van der Kolk, 1994). Children’s ability to regulate emotion comes directly from the child’s caregivers (Schoore, 2003). The parents or caregiver models this ability, and the child’s brain responds in kind (Schoore, 2003). When the brain encounters a new situation for which it cannot cope, the brain creates a new organization of self that can cope with the emerging, novel situation (Kahn, 2013). This ability to organize the self allows for a person to maintain homeostasis in new, stressful, or different situations. The child’s neural pathways mimic those of the parent or caregiver, and the result is a patterned response, etched in the limbic system (Schoore, 2003a, 2003b). If the child has a nurturing, comforting environment, he or she learns to regulate emotional responses and to self soothe. If the child has a fractured, neglectful, or abusive environment, neural pathways are disrupted, and the result is, often, a life-long inability to recognize, regulate, or control emotional responses (van der Kolk, 1994).

Childhood trauma has a much more robust correlation with adulthood emotional dysregulation than does trauma experienced as an adult (Kulkarni et al., 2013). In a study of 150 retired police officers in the United States, researchers sought data as to whether negative mood regulation is connected more to childhood trauma, or traumatic events experienced as an adult. Data collected supports that emotional dysregulation is more of a result from childhood trauma than of adult trauma. This reflects the data results from a 2005 study wherein the data reflected, "...emotion regulation and interpersonal problems were both significant predictors and together made contributions to functional impairment equal to that of PTSD symptoms" (Cloitre et al., 2005, p. 119). Therefore, it is reasonable to assert that emotional regulation issues result from ACEs, and that ACEs are at least as impairing and damaging as PTSD symptomology, and probably more so (Cloitre et al., 2005).

Self-Concept and CPTSD

Self-concept is the belief that one holds about the self, in great part influenced by the actions, and reactions, of others (Ungvarsky, 2019). Self-concept includes several aspects according to Ungvarsky, "...such as personality, behavioral traits, skills and abilities, attributes and characteristics, and all the things that make one person unique" (Ungvarsky, 2019). The conceptualization of the self includes archetypes of the past self, present self, and future self. If these self-schemas are generally positive and able, then the individual has greater self-esteem and self-efficacy. If these schemas are negative, and the person sees the self as worthy only of neglect or abuse, and thwarted, then the individual has, at best, low self-esteem (Ungvarsky, 2019). In some cases, the sense of self may become fractured, and dissociative (Evans et al., 2015). In some cases, fractured

self-concept related to trauma in childhood leads to early onset psychosis, and psychiatric pathology continuing into adulthood (Evans et al., 2015).

CPTSD symptomology may manifest as the continued abuse and neglect of self (Felitti et al., 1998; Poulsny et al., 1995). Chronic trauma often relates to dissociative states and lack of emotional regulation skills (Yates, 2009). The inability to appropriately regulate emotion correlates with higher incidence of self-harm (Howard et al., 2017). Self-harm may mitigate the dissociative symptoms and increase a sense of grounding, with the pain helping the person to reconnect with the present (Low et al., 2000; Rodriguez-Srednecki, 2001). Conversely, dissociative symptomology may also lead to the inability to detect danger, and therefore chronic trauma resulting in numbed fear response correlates with exposure of the self to harmful situations (Low et al., 2000; Rodriguez-Srednecki, 2001).

Career Choice and Complex Trauma

Adults with complex trauma backgrounds may seek volatile situations to re-write the traumatic narrative (Pines, 2005; White, 2007). According to Burke and Shakespeare-Finch, “The experience of a traumatic event prior to joining the police may facilitate positive emotional outcomes from exposure to adverse events on the job” (Burke & Shakespeare-Finch, 2011, p. 1). Burke and Shakespeare-Finch studied 78 police officers in a longitudinal research design from their entry into the police academy until the one-year mark of their time on the force as active police officers. Participants responded to the Traumatic Stress Schedule (TSS) (Norris, 1990) at the time of entry to the force, at the end of the police academy training, and a third time at the end of upon completion of 12 months of active duty as a police officer. There was no comparison group in this

study. The results showed that although negative experiences differed very little between officers who had prior trauma history and those who did not, the officers who had trauma in their past, “returned to an already higher state of positive equilibrium as a result of this prior exposure having been a “growth” experience” (Burke & Shakespeare-Finch, 2011, p. 59). This study did not, however, solely target police officers with childhood complex trauma (Burke & Shakespeare-Finch, 2011).

The Burke and Shakespeare-Finch study was the first to examine trauma prior to active duty police work, and how police officers react and adjust later in their career (Burke & Shakespeare-Finch, 2011). The findings suggested that officers who had a history of trauma prior to joining the force may have a, “resilience capacity” that allowed them to, “develop a sense of comprehension and meaning around the traumatic exposure they had endured prior to joining the police” (Burke & Shakespeare-Finch, 2011, p. 59). The officers with past trauma were able to adjust and adapt to trauma and challenges in their role as police officers more quickly and with less negative effects than did officers without traumatic backgrounds (Burke & Shakespeare-Finch, 2011). Though these officers showed a resilience and adaptive response, police officers still suffered a higher risk of PTST and CPTSD than their civilian counterparts do (McCanlies et al., 2017; Wang, et al., 2010).

Buchanan et al., (1998), suggested there is a “rescue personality” that predicts whether an individual will be drawn to emergency services work, particularly police work (p. 56). This rescue personality type, first posited by Mitchell, is performance driven, wherein the individual possesses high levels of empathy, and is dedicated to their profession (Mitchell, 1983). The rescue personality is further identified as being, “Inner-

directed, action-oriented, and obsessed with high standards of performance, socially conservative, traditional, highly dedicated, and easily bored” (Buchanan et al., 1998, p. 57). Additional characteristics identified include, “Having a desire for control of both the situation and the self, and enjoyment from being needed” (Buchanan et al., 1998, p. 57).

The motivation to help others and guard them from trauma is called the level of public service motivation (Evans & Evans, 2019). In a survey of 386 participants, results indicated that an individual with eight or less ACEs would have less public service motivation, and an individual with nine or more ACEs would have higher public service motivation (Evans & Evans, 2019). This is in keeping with the existential model Pines posits, that the wounded soul seeks to right wrongs (Pines, 2005). This is also reflective of the rescue personality wherein the individual seeks to be victorious and avenge the innocent (Buchanan et al., 1998). These results suggested that police cadets that have prior service trauma may have CPTSD symptomology that is not apparent prior to service, and may be seeking this avocation in an attempt to assuage existential pain (Buchanan et al., 1998; Pines, 2005).

In 2007 Burke utilized the Post-traumatic Growth Inventory (Tedeschi & Calhoun, 1996), to gauge the positive outcomes reported by police officers that had experienced prior-service trauma as opposed to those who reported no prior-service trauma. The results were nothing short of staggering in their differences. Officers who reported “No trauma at point of entry” and “No operational trauma” (*n*-18) reported an average Post-traumatic Growth Inventory (PTGI) score of 13.44 at 12 months of operational experience, or one year on the police force. Officers with “No trauma at point of entry” with “Operational trauma” (*n*-15) had average PTGI scores of 14.8. However,

officers who reported “Trauma at point of entry” and “No operational trauma” (*n*-13) scored an average of 38.77, while officers who reported “Trauma at point of entry” and “Operational trauma” (*n*-12) had average PTGI scores of 34.50 (Burke, 2007). In participants who reported trauma in early life, prior to police work, higher personal growth gains were reported whether they had experienced trauma while a police officer on the job. These gains seem to follow a humanistic-existential journey, in that the officers who experienced trauma in their younger years are beings attempting to make themselves whole, to heal, and to find meaning in existence through a manner of replaying the trauma of their youth, but this time as victor, rather than victim (Greening, 1990; Vacon et al., 2016).

Some unconscious factors may influence career choice. The existential model posits that career choice is a way to heal childhood wounds (Pines, 2005). According to this framework, passion for a particular career is an attempt to resolve metaphoric issues (Pines, 2005). The individual re-lives trauma from his or her past from a different role and attempts to correct or change the results or narrative in a manner preferred by that individual (Pines, 20005). It is akin

to the traumatized child going from being a victim and helpless to a victor and in control. If these attempts do not bear positive results, burnout occurs (Pines, 2005). Very high ACE scores are a predictive factor of a desire toward altruism and public service (Evans & Evans, 2019).

Triplett, Higgins and Payne conducted a study in which they gathered information from non-human services personnel via telephone survey, and from human services personnel who were audited via a survey given at the end of a training seminar (2013).

The survey asked a series of questions, with the response choices being either “agree” or “disagree”. The survey questions included whether or not respondents had been physically abused by parents or witnessed domestic violence in the home. Questions also included whether or not respondents used physical violence against their adult partners, or were the victim of physical violence by their adult partners. Respondents were also asked whether or not they used threats or had threats used against them, as well as if they and their adult partner argued often (Triplett et al., 2013).

No differences in experience of childhood domestic violence were found between the two groups, non-human services and human services workers. A difference between the two groups was found on adult experience of domestic violence, which showed that human services workers were less likely to be victims of intimate partner violence in adulthood (Triplett et al., 2013). It is unknown if this disparity is attributed to career choice itself, education on intimate partner violence, education level, or other factors (Triplett et al., 2013).

Selection processes in police work vary, and there are many factors considered when hiring police officers. One factor considered is resilience, and the ability to tolerate chronic and repeated trauma (Goldfarb & Aumiller, 2004). It is noteworthy that children of parents who experience trauma, “...have higher functioning in the areas of problem solving (perceptual reasoning), higher verbal acuity, process new information faster and have greater working memory...” than those children whose parents do not have a trauma history (Kira et al., 2012, p. 136). These attributes contribute toward success as a police officer. In a study by Goldfarb and Aumiller, many police departments used individual characteristics such as resilience and tolerance of trauma to select candidates (Goldfarb &

Aumiller, 2004). Having shown resilience to experiences of trauma in early life is seen as a predictor of resilience in situations of operational stress and police trauma (Goldfarb & Aumiller, 2004).

Childhood Trauma and Mental Health Problems in Police Officers

Researchers indicate that mental health problems in police officers correlate with childhood trauma (Wang et al., 2010). A longitudinal study is conducted wherein police cadets were surveyed regarding childhood trauma, and then they were followed through their career (Wang et al., 2010). Police officers who had more Adverse Childhood Experiences were more likely to develop PTSD/CPTSD and other mental health problems (Wang et al., 2010). While greater personal growth gains are made in police officers with higher childhood trauma backgrounds, the risk for PTSD and other mental health issues is higher (Burke, 2007; Wang et al., 2010). Burke also compared 158 police recruits as to their prior experiences of trauma to ascertain whether these experiences led to the choice of police work as a career (Burke, 2009). Burke divided the police recruits into “trauma” and “no trauma” groups using the *DSM-IV-TR* criteria (APA, 2000). Burke’s comparison showed that 93 (58%) of the police recruits fit into the category of new police recruits who reported trauma in their childhood and/or adolescent years (Burke, 2009).

Buchanan et al. (2001) studied police officers regarding career exposure to trauma as well as prior-service trauma. The researchers found that for those officers who had experienced trauma prior to their service as police officers, the risks were greater that they would have symptomology that negatively impacted not only their job performance, but also increased the likelihood that they would resign from police service due to these

negative symptoms (Buchanan et al., 2001). This study further gathered statistics as to prior-service trauma. When compared to the samples of others in the same age range (young adults) the police recruits reported traumatic events prior to service at a higher rate than is reported by same-aged peers entering other professions (Buchanan et al., 2001).

The combination of pre-duty trauma, career trauma, and constant stress is not only problematic to the individual officer; it holds potential danger to the public as well. Police officers who are consistently under stress, experiencing traumatic incidents, and repressing their own emotions are more likely to exhibit aggressive behaviors (Kop & Euwema, 2001; Sack, 2009). In a 2013 study of 260 Vietnam War veterans, data supports that there was a higher incidence of violence or abuse for either civilians or prisoners among those veterans with symptoms of PTSD (Dohrenwend et al., 2013). The researchers only assessed combat exposure, and not pre-combat trauma, with the severity or the exposure correlating to the highest incidences of harm to civilians or prisoners (Dohrenwend et al., 2013). In a similar 2019 study researchers examined police officers for higher incidences of abuse upon civilians, and the results also reflect that police officers with symptoms of PTSD are more violent (DeVylder et al., 2019)

In 2019 a study of 137 active-duty police officers in America produced data correlating abusive police practices with PTSD symptoms (DeVylder et al., 2019). The researchers administered the ACEs Questionnaire, and the PCL-5, which measures presence and severity of PTSD symptoms (Blevins et al., 2015). Researchers then used a, “novel 5-item Unusual Situations Involving Use of Force measure to assess self-

reported personal involvement in excessive or abusive police practices” (DeVylder et al., 2019, p. 265). Analysis of the data indicated, “Higher ACEs scores, higher workplace trauma exposure scores, and abusive police practices were significantly associated with higher scores on the PCL-5” (DeVylder et al., 2019, p. 266). Thus, there is an interaction between PTSD symptomology, high ACE scores, and abusive police practices (DeVylder, 2019).

Summary of Chapter II

The literature strongly supports the assertion that toxic stress in children changes the developing brain, and can cause negative effects throughout the lifetime, including biological, mental, and behavioral issues (Bubbi et al., 2016; De Jong, 2016; Felitti et al., 1998; Johnson et al., 2013; Milldebrooks & Audage, 2008). These toxic stressors are measured by 10 Adverse Childhood Experiences, or ACEs (Felitti et al., 1998). As the number of ACEs experienced as a child rise, so does the chance of negative mental, physical, emotional, and re-victimization (Dube et al., Felitti et al., 1998). Maladaptive behaviors may develop in response to the trauma, and these behaviors may continue over the lifespan (Oliver, 1993; White, 2007). The literature presented here supports the hypothesis that there may be a statistically significant difference between Criminal Justice university students and non-Criminal Justice university students on the ACEs.

Changes in the brain are linked to childhood trauma, with those changes affecting several areas of the brain (Bremner, 2006; Dunn et al., 2013; van der Kolk, 2007). Smaller hippocampal volume in the brain from trauma in childhood causes issues with the limbic system, effecting behaviors and emotions, in particular the emotions of anger and fear (Bremner, 2006). This change in the brain’s formation affects the brain’s ability

to react to new situations, and shifts the brain's focus from learning to surviving (Lawson, 2017). This means that the brain is more apt to simply react rather than use logic to navigate new or challenging situations. Childhood exposure to long term abuse or neglect may lead to CPTSD (Cloitre et al., 2019; Cook et al., 2005).

CPTSD relates to trauma that is ongoing and long term, rather than trauma that is linked to a single event (Clausen et al., 2019; Herman, 1992). CPTSD may present with impaired ability to regulate mood, impulsivity, as well as problems with concept of self (Cloitre et al., 2014; Hyland et al., 2016; Rudofossi, 2017; Shore, 2003; van der Kolk, 2005). A child raised in an abusive or neglectful environment may exhibit the inability to regulate and recognize emotions across the lifespan (van der Kolk, 1994). There is a more robust correlation between childhood trauma and emotional dysregulation as an adult, than with that of trauma experienced in adulthood (Cloitre et al., 2005; Kulkarni et al., 2013). Complex trauma further affects the very concept of self, and low self-esteem or dissociation may result, as well as psychosis and other psychiatric disorders (Evans et al., 2015; Ungvarsky, 2019). Self-harm and exposing the self to dangerous situations is another possible consequence of CPTSD (Howard et al., 2017; Low et al., 2000; Rodrigues-Sredneckki, 2001). Adults from complex trauma backgrounds are drawn to public service work, particularly police work (Buchanan et al., 1998). The literature pertaining to CPTSD supports the hypothesis that there may be a statistically significant difference between Criminal Justice university students and non-Criminal Justice university students on PTSD and CPTSD as measured by the ITQ.

Public service motivation correlates to ACE scores, with individuals having ACE scores of 8 or higher being more drawn to public service work (Evans & Evans, 2019).

Post-traumatic growth is also higher in police officers who reported trauma in childhood than those who did not report childhood trauma (Burke, 2007). The attributes of resilience to, and tolerance of, trauma is one of the factors used to select police officer candidates (Goldfarb & Aumiller, 2004). Resilience to childhood trauma is seen by police forces as a predictive factor to withstanding police stress and trauma (Goldfarb & Aumiller, 2004). There is a correlation between childhood trauma and mental health issues in police officers (Wang et al., 2010). Police officers with higher ACE scores are found, over time, to have higher incidences of PTSD, CPTSD, and other mental health issues (Buchanan et al., 2001; Wang et al., 2010). Data supports that officers who have higher ACE scores, higher workplace trauma exposure, and who exhibit abusive practices are more likely to be associated with having PTSD symptomology (DeVylder, 2019). The literature presented supports the hypothesis that there may be specific predictors on the ACEs that most impact whether a Criminal Justice university student or a non-Criminal Justice university student will experience PTSD or CPTSD.

In that the literature supports that higher ACE scores may be a factor in choosing police work as a career, the literature also supports that higher ACE scores robustly correlate to the propensity to develop PTSD or CPTSD over the lifespan (Clausen et al., 2019; Cook et al., 2005; Rudofossi, 2007). Police officers who have childhood histories of trauma are often chosen for police work due to the belief that resilience in early life leads to resilience of police trauma during the career. ACE scores that are very high may even be a factor in career choice involving police work. Further, the literature supports that higher ACE scores, higher police trauma, and higher PTSD symptomology is significantly associated with excessive force or abusive police practices.

The lack of study involving ACE scores, PTSD and CPTSD symptomology before active duty police work demonstrates a gap in the literature. The proposed study has implications not only for more proactive mental health services for police officers, but for greater safety factors for the public served by those officers.

CHAPTER III

Method

The purpose of this study was to assess if Adverse Childhood Experiences (ACEs) and/or complex trauma symptomology are present in police officer candidates, predisposing police candidates to CPTSD prior to joining the force (McCanlies et al., 2017; Wang et al., 2010). The following will be addressed in this section: a) research questions; b) research design; c) sample and selection of participants; d) instrumentation and rationale for the choice in instruments; e) the method of data collection and data analysis.

Research Questions and Hypotheses

Research Question 1. To what extent are there differences between Criminal Justice majors and non-Criminal Justice majors on the ACEs?

H01. There are no differences between Criminal Justice majors and non-Criminal Justice majors on the ACEs.

Research Question 2. To what extent are there differences between Criminal Justice majors and non-Criminal Justice majors on PTSD and CPTSD as measured by the ITQ?

H02. There are no differences between Criminal Justice majors and non-Criminal Justice majors on PTSD and CPTSD as measured by the ITQ.

Research Question 3. To what extent are ACE scores associated with PTSD and CPTSD experiences in Criminal Justice majors and non-Criminal Justice majors?

H03. There is no association between ACE scores and PTSD and CPTSD experiences in Criminal Justice majors and non-Criminal Justice majors.

Research Design

The design for the study is quasi-experimental in that the participants were not randomly assigned to a group, but rather chosen according to their majors, Criminal Justice and non-Criminal Justice (Shadish et al., 2002). The groups were considered nonequivalent in this design, as the study is comparing two groups, Criminal Justice majors and non-Criminal Justice majors, rather than assigning participants to random groups (Shadish et al., 2002) Comparison of the two groups makes the quasi-experimental design appropriate for this study (Shadish et al., 2002). Though a quasi-experimental design increases the likelihood of confounding variables (Shadish et al., 2002), through choosing students from the same university, the participants may have more similar characteristics than if they were chosen from differing universities.

Participants

All students 18 years of age or older and enrolled at the chosen university were eligible to participate in this study. Participants did not have to be experiencing symptoms of trauma-related illness or PTSD/CPTSD to be eligible for participation in this study, nor did students have to have a history of childhood trauma. All participants were students and have not been on active duty as a police officer. All participants gave informed consent before participating in any part of the study. Having students fill out detailed demographic information may expose them to repercussions, including loss of opportunity to become a police officer, therefore demographic information was not requested from students in this study, other than to ascertain if the student was over the age of 18. As the chosen university for this sample has a highly acclaimed College of Criminal Justice, many of the students go into law enforcement following graduation.

The surveyed university also has several other colleges wherein students are enrolled in fields that are not related to Criminal Justice, providing a germane sample for this study. In total, 315 students participated in this study, 207 Criminal Justice students, and 108 students from majors other than Criminal Justice.

Instruments

Student trauma symptoms were assessed on two self-report instruments: The Adverse Childhood Experience Survey (ACEs) and the International Trauma Questionnaire (ITQ) (Cloitre et al., 2018; Felitti et al., 1998).

The first instrument used in this study was the Adverse Childhood Experiences (ACE) Questionnaire (ACEs) (Felitti et al., 1998). This instrument consists of 10 questions that measure a range of Adverse Childhood Experiences before the age of 18. The categories of Adverse Childhood Experiences are: household mental illness, household alcohol and substance abuse, incarceration of a family member, parental separation or divorce, physical, emotional, and sexual abuse (Felitti et al., 1998). The rationale for using the ACE Questionnaire is that it measures childhood trauma before the age of 18, and there is robust evidence that childhood trauma is predictive of higher incidence of developing trauma-related pathologies, including PTSD and CPTSD, in adulthood (Brown et al., 2009; Bucci et al., 2016; Courtois & Ford, 2013; Felitti et al., 1998; McCrory & Viding, 2015). Police officers with higher levels of ACEs are more likely to develop trauma-related mental health problems (Burke, 2007; Wang et al., 2010). Understanding these correlations prompt the need for this study, to ascertain if PTSD or CPTSD symptomology exists prior to active duty in police officer candidates.

The ACEs questionnaire is a 10-item scale that measures childhood trauma prior to turning 18 years of age. Participant scores on the ACEs are more apt to be stable and repeatable, as the survey is measuring past events before age 18, however, the participant's current emotional state and other issues may affect the scores. As all participants were over the age of 18, the responses should not vary much over time (Felitti et al., 1998). This instrument has been widely used by organizations such as the World Health Organization and the United Nations to assess children all over the world (WHO, 2011). The scores from ACEs have shown reliable, repeatable results over time, location, and population (WHO, 2011). External validity threat is mitigated by the large sample size in the original study: 17,337 (Felitti et al., 1998). Construct validity is high in this study, as the concepts of Adverse Childhood Experiences correspond to the measurement instrument, the Adverse Childhood Experiences Inventory (Felitti et al., 1998; Mersky et al., 2017). The threat to generalizability found when a college student is performing data collection through interview is mitigated using the instrument itself (Bernstein et al., 1975). The rationale for the use of the ACEs is that the researcher sought to measure the level of ACEs in students that are future police officers before active service as opposed to the level of ACEs in students that are not heading for a career in law enforcement (Felitti et al., 1998).

The second instrument used in this study is International Trauma Questionnaire (ITQ) Cloitre et al., 2018). This instrument consists of 18 items that measure the core features of PTSD and CPTSD. There is also a question before the 18 items to ascertain when the experience the participant found most troubling occurred, and what that experience was. The instrument delineates between PTSD symptomology and CPTSD

symptomology, meaning that a participant who meets the diagnostic criteria for PTSD will not also receive a CPTSD diagnosis, unless they meet criteria for both PTSD and CPTSD (Cloitre et al., 2018). Although researchers from a 2019 study reported that women were almost twice as likely as men to meet criteria for both PTSD and CPTSD, the prevalence of meeting criteria for a dual diagnosis was not studied (Cloitre et al., 2019).

The rationale for using the ITQ is that incidences of chronic trauma in childhood correlate with higher incidences of PTSD, CPTSD, and other mental health problems (Brown et al., 2009; Bucci et al., 2016; Burke, 2007; Courtois & Ford, 2013; Felitti et al., 1998; McCrory & Viding, 2015; Wang et al., 2010). Further rationale for the use of the ITQ is that the researcher was measuring both PTSD and CPTSD symptoms in both groups of students, as well as the correlation between the type of Adverse Childhood Experience and PTSD or CPTSD symptoms (Cloitre et al., 2018).

Data Collection Process

After approval of the Institutional Review Board (IRB), sampling was used to select only persons age 18 or over that are Criminal Justice majors, as well as students from majors other than Criminal Justice. Informed consent was obtained before filling out the questionnaires. The informed consent document included information that there was minimal risk that the questions asked relating to childhood trauma and symptoms would cause discomfort to the participant. Participants were provided with a description of these possible risks, as well as information on how to contact the university counseling center as well as local crisis lines, had any discomfort occurred. Participants were informed that they were free to discontinue the study at any time, without fear of

repercussions of any sort. Self-reports of ACE's and present PTSD and CPTSD symptomology in participants were studied by virtue of the Adverse Childhood Experiences Inventory (ACE) and the International Trauma Questionnaire (ITQ). Both the ACE and the ITQ are in the public domain, and required no special permission to use them in study. Students participated on a voluntary basis. A demographic questionnaire was used to ascertain whether the student was majoring in Criminal Justice or in a major other than Criminal Justice. Students were contacted via email with a link to the Qualtrics website to participate in the study. Both the ACE and the ITQ were formatted to fit the Qualtrics platform. The rationale for collecting data in this manner was convenience and the lack of ability to assess police cadets due to the COVID 19 pandemic. This manner of sampling was appropriate to this study in that participants must be accessible to be surveyed (Lunenburg & Irby, 2008).

Data Analysis Process

To analyze the first research question, the extent to which there were differences between Criminal Justice majors and non-Criminal Justice majors on the ACEs, t-tests were conducted. The independent variable, student type, consisted of two levels, Criminal Justice majors and non-Criminal Justice majors. The dependent variable was the ACEs score.

To analyze the results of the second research question, the extent to which there were differences between Criminal Justice majors and non-Criminal Justice majors, on meeting the criteria for PTSD and CPTSD as measured by the ITQ, Chi-squared tests were used. This analysis was appropriate because the PTSD and CPTSD designations are nominally scaled (Mertler & Vanatta, 2005).

The third research question evaluated the extent to which there were differences between Criminal Justice majors and non-Criminal Justice majors regarding the degree of associations between ACEs with PTSD and CPTSD as measured by the ITQ.

Correlations were used to determine the relationship between Adverse Childhood Experiences as the independent variable, with PTSD and CPTSD as the intervally-scaled dependent variables. This analysis provides the degree of relationship between ACEs, and PTSD or CPTSD symptoms for the two groups, students pursuing law enforcement and students that are seeking other careers, (Mertler & Vannatta, 2005).

To understand the minimum sample size required to have sufficient power to detect an effect, an a priori power analysis was conducted using GPower for *t*-test, chi-squared and Pearson *r* correlation (Faul et al., 2009). The results of the analysis showed that in order to have a medium effect size, at .05 error probability, and that the tests were sufficiently powered, the highest sample size needed for all tests was at least $N = 279$ participants, so that was the minimum acceptable number of participants for this study (Cohen, 1988; Creswell, 2009).

Summary of Chapter III

The two instruments used in this study were: the Adverse Childhood Experiences (ACE) questionnaire, and the International Trauma Questionnaire (ITQ). These instruments were appropriate for this study in that the ACE measures Adverse Childhood Experiences, or experiences that are negative and traumatic in nature that occur in childhood, before the age of 18. The ITQ measures both PTSD and CPTSD symptomology, respectively, and separates the two diagnoses one from the other. Given that the literature supports a robust connection between childhood trauma and the

development of CPTSD in adulthood, these instruments were appropriate for this study (Brown et al., 2009; Bucci et al., 2016; Courtois & Ford, 2013; Felitti et al., 1998; McCrory & Viding, 2015).

CHAPTER IV

Results

After IRB approval was obtained, the ACE and the ITQ were administered to Criminal Justice majors and non-Criminal Justice majors via an anonymous Qualtrics survey link. Upon examination of the surveys, 6 were identified as incomplete, and therefore removed. After removing the incomplete surveys, $N = 315$, with 207 participants reporting Criminal Justice as their major, and 108 participants reporting a major other than Criminal Justice. Further demographic information was not surveyed.

Research Question 1

An independent samples t -test was conducted to ascertain the equality of means between the Criminal Justice majors and those participants not majoring in Criminal Justice on the ACE. Prior to conducting analyses, statistical assumptions were evaluated. The results indicated that the assumptions for normality of data were met. Homogeneity of variance was met as the Levene's test was $> .05$. No statistically significant difference in the means was found, $(t(313) = .206, p = .837)$. The mean for Criminal Justice majors ($M = 17.86, SD = 2.37$) was not statistically significantly different from the mean for majors others than Criminal Justice ($M = 17.80, SD = 2.45$). The magnitude of the differences in the means (mean difference = $.059$, 95% CI : $.502$ to $.619$). These results indicate that there is no statistically significant difference between Criminal Justice majors and non-Criminal Justice majors on the ACEs, henceforth, H_1 was not supported, and this researcher did not find sufficient evidence to reject the null hypothesis.

Research Question 2

A chi-squared was conducted to ascertain to what extent are there differences between Criminal Justice majors and non-Criminal Justice majors on PTSD as measured by the ITQ. No statistically significant relationship was found between Criminal Justice majors and non-Criminal Justice majors on PTSD, $\chi^2 (1) = .077, p = .782$. These results indicate that there is no statistically significant difference between Criminal Justice majors and non-Criminal Justice majors on the ITQ.

A chi-squared was conducted to ascertain to what extent there were differences between Criminal Justice majors and non-Criminal Justice majors on CPTSD as measured by the ITQ. No statistically significant relationship was found between Criminal Justice majors and non-Criminal Justice majors on CPTSD, $\chi^2 (1) = .952, p = .329$. The results of both tests indicated that H2 was not supported, therefore this researcher did not find sufficient evidence to reject the null hypotheses.

Research Question 3

Pearson r correlations were used to determine the relationship between Criminal Justice majors and non-Criminal Justice majors on ACE scores and PTSD or CPTSD experiences in Criminal Justice majors and non-Criminal Justice majors. There was no statistically significant relationship between the choice of major and ACE score, $r(313) = -.012, p = .837$.

There was a statistically significant relationship between ACE score and PTSD score, with a large positive correlation, $r(308) = .575, p < .001$, indicating that the higher the ACE score, the higher the PTSD score. The effect size is $r^2 = (.575)^2 = .330$, therefore, roughly 33% of the variability observed between the ACE score and the PTSD

score is shared variance. There was a statistically significant relationship between ACE score and CPTSD score, with a large, positive correlation, $r(308) = .575, p < .001$, indicating that the higher the ACE score, the higher the CPTSD score. The effect size is $r^2 = (.575)^2 = .330$, therefore, roughly 33% of the variability observed between the ACE score and the CPTSD score is shared variance. Statistically, both correlations for ACE score and PTSD, as well as ACE score and CPTSD, were identical. The results indicated that while there is no statistically significant relationship between choice of major and PTSD or CPTSD experiences, although there is a statistically significant relationship between scores on the ACEs and PTSD and CPTSD, therefore, this researcher found sufficient evidence to reject the null hypothesis H3.

Summary of Chapter IV

After analyzing the data for the first research question, focused on understanding the extent to which there were differences between Criminal Justice majors and non-Criminal Justice majors on the ACEs, the results from the data denoted no statistical significance between Criminal Justice majors and non-Criminal Justice majors on the ACEs questionnaire. Therefore, the researcher did not find sufficient evidence to reject the null. Regarding the second research question, focused on the extent to which there were differences between Criminal Justice majors and non-Criminal Justice majors on PTSD and CPTSD as measured by the ITQ, the results from the data denoted no statistical significance between the Criminal Justice majors and the non-Criminal Justice majors on PTSD or CPTSD as measured by the ITQ. Therefore, the researcher did not find sufficient evidence to reject the null.

The researcher found sufficient evidence to reject the null hypothesis on the third research question: to what extent are ACE scores associated with PTSD and CPTSD experiences in Criminal Justice majors and non-Criminal Justice majors? Although no statistically significant relationship was found between choice of major and PTSD or CPTSD symptomology, a large, positive correlation was shown between ACEs score on PTSD or CPTSD experiences on the ITQ.

CHAPTER V

Discussion

Chapter I introduced the study by presenting the background, statement of the problem, purpose of the study, rationale of the study, definition of terms, theoretical framework, diagnostic framework and explanation of complex trauma, research questions, limitations, delimitations, assumptions, and organization of the study. Chapter II reviewed the pertinent literature, including, Stress in children, Adverse Childhood Experiences (ACEs), the effects of trauma on the brain, complex trauma, Self-concept and Complex Post Traumatic Stress Disorder (CPTSD), career choice and how career choice relates to complex trauma, and concludes with childhood trauma and mental health problems in police officers. Chapter III, the method section, outlines the research questions and hypotheses of this study, explains the research design, participants, instruments used in the study, as well as data collection and analysis processes. Chapter IV addresses the results of the analyses of the data. Finally, Chapter V includes an overview of the study and results, discussion of the findings through the lens of the theoretical and diagnostic framework, limitations of the study, recommendations and implications for further research, and a concluding summary.

Purpose of the Study

The purpose of this study was to find the extent to which Adverse Childhood Experiences (ACEs) and PTSD/CPTSD symptomology were present in Criminal Justice majors as compared to non-Criminal Justice majors, to build a foundation for further research, study, and treatment of police officers prior to active service (McCanlies et al., 2017; Wang et al., 2010). Childhood trauma has been reported to be a factor in choosing

a career in police work (Pines, 2005). Police officers have also reported experiencing childhood trauma at percentages higher than the expected averages, with 50% to 70.6% of police candidates reporting having experienced trauma in childhood (Buchanan et al., 2001; Burke, 2009). Prior studies did not measure Adverse Childhood Experiences (ACEs) in police candidates, but rather used the Traumatic Stress Scale (TSS), which measures trauma over a lifespan, rather than childhood trauma in particular, thus behooving this study (Norris, 1990). Prior studies also used the PTSD Scale for the DSM-5, but did not measure Adverse Childhood Experiences (Isabirye et al., 2022).

Results of this study are of importance to Counselor Education and mental health practitioners to inform future research, curriculum, interventions, and other programs not only for police officer candidates and college students in Criminal Justice, but also for students in other areas of study. Results of the study confirm the relationship between Adverse Childhood Experiences (ACEs) and PTSD/CPTSD symptomology.

Results of Data Analysis

The first hypothesis postulated that there were no differences between Criminal Justice majors and non-Criminal Justice majors on the ACEs. Therefore, this hypothesis noted that there was not a statistically significant difference between the two groups, Criminal Justice majors and non-Criminal Justice majors. Therefore, this researcher did not find sufficient evidence to reject the null hypothesis. These results indicated that, in this sample, there were not more Adverse Childhood Experiences reported in those seeking a career in police work as opposed to those students not seeking a career in police work.

The results for the second hypothesis were that there were no differences between Criminal Justice majors and non-Criminal Justice majors on PTSD and CPTSD as measured by the ITQ. Indeed, the results indicated that there was not a statistically significant difference between the two groups, Criminal Justice majors and non-Criminal Justice majors. Therefore, there was not sufficient evidence to reject the null hypothesis. These results suggest that PTSD and CPTSD symptomology as measured on the ITQ did not differ according to major in college students. Therefore, there was insufficient evidence to reject the null hypothesis.

The results for the third hypothesis postulated that there was no association between ACE scores and PTSD and CPTSD experiences in Criminal Justice majors and non-Criminal Justice majors. Therefore, there was no statistically significant difference between the two groups as to choice of major associated with ACE scores. The results did indicate that there was a statistically significant relationship between ACE score and PTSD score, as well as a statistically significant relationship between ACE score and CPTSD score. These results indicated that there was a robust correlation between ACE scores and both PTSD and CPTSD symptomology, though this correlation was not related to choice of college major.

Discussion of Results Through Theoretical and Diagnostic Framework

The theoretical framework for this study was through the lens of complex trauma, as conceptualized by Herman (Herman, 1992). According to Herman, long-term trauma, as well as aggregation of trauma, especially in childhood, is related to symptomology that goes beyond PTSD symptomology (Herman, 1992, 1997). The analysis of the data resulted in similar findings to prior studies, wherein research indicated that long-term

childhood trauma begets the need to separate the diagnoses of PTSD and CPTSD (Cloitre et al., 2018; Herman, 1997; van der Kolk, 2005).

Though this study found no differences between the two groups, Criminal Justice majors and non-Criminal justice majors, a strong relationship between Adverse Childhood Experiences and PTSD/CPTSD was found. The results indicated that the higher the ACE score, the higher the symptomology of PTSD and CPTSD. The results of data analysis also indicated that some respondents reported symptomology consistent with PTSD, whilst others reported symptomology that is consistent with CPTSD experiences. Being as the ITQ separates the two diagnosis: PTSD from CPTSD, this study reflected the theoretical framework suggested by Herman, as well as Cloitre et al., and van der Kolk, respectively (Cloitre et al., 2018; Herman, 1997; van der Kolk, 2005).

Limitations of the Study

There are several limitations that may limit this study in generalizability. The sample size of the study may not have been adequate to measure the differences between the two groups, Criminal Justice majors and non-Criminal Justice majors. Larger sample sizes in future studies may, perhaps, result in a difference between the two groups. This study also concentrated on a sample that was from one university, and the inclusion of numerous universities may change the results in future studies. Though it was assumed that participants would answer truthfully, and no demographic information was asked of participants in this study, the subject of childhood trauma is a sensitive matter, and all respondents may not have answered truthfully, especially those heading for a career as a police officer, due to stigmatization of mental health issues in police officers (Soomro & Yanos, 2018).

Implications and Recommendations

Socially desirable responding (SDR) has been shown in numerous studies to effect responses, even when the studies are conducted anonymously (Holden & Book, 2012; Lambert, et al., 2016; van de Mortel, 2008). Prior studies have posited that police officers under-report mental health symptoms due to negative perceptions on mental health issues in police work, and that police officers are also less likely to seek mental health services (Soomro & Yanos, 2018; Velazquez & Hernandez, 2019). Screenings by law enforcement agencies related to mental health issues further complicate and enforce these stigmas, as police officers who report mental health issues prior to employment are unable to ‘pass’ a mental health assessment, and are not hired for active duty as they are deemed unfit (Ramchand et al., 2018). In 2021, researchers studied police officers on self-report instruments to assess mental health symptoms, having the officers respond to the self-report instrument at both their employing departments and again at an independent organization (Marshall et al., 2021). The results of this study indicated that not only did police officers under-report symptoms to their employers, those with severe PTSD and other mental health pathology were significantly more likely to under-report their symptoms (Marshall et al., 2021).

Prior studies indicated that police officers experience PTSD symptoms at a higher rate than the average (Rudofossi, 2007). Prior studies have also reported results wherein police officers have higher rates of depression and other mental illnesses than the general populace (Anderson & Papazoglou, 2015; Papazoglou & Chopko, 2017). Though this study did not find differences between Criminal Justice majors and non-Criminal Justice majors on ACE, PTSD, or CPTSD scores, prior longitudinal studies have reported

findings wherein police officers that had more Adverse Childhood Experiences were more likely to develop PTSD and CPTSD (Wang, et al., 2010). That the participants in this study have not yet experienced active duty as police officers may account for differences between the two groups not being found.

The findings of this study differ in that there was no difference between the two groups according to choice of major, implicating that, perhaps, the re-traumatization of police work may have an effect on the development of PTSD or CPTSD, or the worsening of pathology during active service. Police officers have more difficulty in processing and tolerating negative emotional states than do control groups, and this may account for the re-traumatizing effect of police work in general when childhood trauma is already present in the officer's experience (Berking et al., 2010). The effects of childhood trauma are similar to the difficulties reported by police officers after experiencing distressing situations, and police officers that have experienced childhood trauma may have worsening symptomology after exposure to police work (Banducci et al., 2014; Burns et al., 2012; Choi & Oh, 2014).

Future research in this area should involve the breaking down of each of the Adverse Childhood Experiences to ascertain whether or not there is a difference on each individual ACE between the two groups. Childhood trauma and career choice have been linked in prior studies of human services workers, wherein participants attributed their choice of career to having experienced traumas during childhood (Rompf & Royce, 2013; Triplett et al., 2013). Within the literature reviewed, I could not find any studies wherein individual ACEs were studied for correlation to career choice. Further, the incidences of ACEs in the participants of this study, as well as the reports of PTSD/CPTSD

symptomology points toward the need for more study in this area in general, to better inform universities. In being better aware of university students' experiences of trauma and trauma-linked symptomology, services for those students may be more informed and made more accessible to students. Not only should these services be geared toward students who will be pursuing a career in law enforcement, but to all students as a whole.

In summation, this researcher's findings reflect findings from previous studies, wherein ACEs are correlated to PTSD and CPTSD: the higher the ACE score, the more likely participants are to have PTSD or CPTSD (Cloitre et al., 2018; Herman, 1997; van der Kolk, 2005). University students may present with PTSD/CPTSD prior to not only active service as a police officer, but in other disciplines as well. Individual ACEs and career choice have not been widely studied, denoting a gap in the literature for this issue. Earlier detection and trauma informed treatment of university students may mitigate adverse pathology in the future, particularly for police officer candidates, who are at higher risk for negative outcomes if they have experienced trauma prior to active duty (Buchanan et al., 2001).

Further research recommendations include assessing students in criminal justice programs as to individual ACEs, type of trauma, and symptomology manifestation for comparison to students from other disciplines. Research as to levels of ACEs in university students as a whole would also be beneficial to inform care and services for university students across all disciplines. Intervention programs for the adverse affects of ACEs in students of criminal justice programs, and other disciplines, and the long-term effects of those interventions over time and career span is also recommended.

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<https://doi.org/10.1037/tra0000288>

APPENDIX



Date: Aug 13, 2021 10:25:36 AM CDT
TO: Laurel Fauster David Lawson
FROM: SHSU IRB
PROJECT TITLE: Adverse Childhood Events and Complex Post Traumatic Stress Disorder Symptomology in Criminal Justice Students Prior to Active Service as Police Officers
PROTOCOL #: IRB-2021-232
SUBMISSION TYPE: Initial
ACTION: Exempt
DECISION DATE: August 13, 2021
EXEMPT REVIEW CATEGORY: Category 2.(i). Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording). The information obtained is recorded by the investigator in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subjects.
OPPORTUNITY TO PROVIDE FEEDBACK: To access the survey, [click here](#). It only takes 10 minutes of your time and is voluntary. The results will be used internally to make improvements to the IRB application and/or process. Thank you for your time.

Greetings,

Thank you for your submission of Initial Review materials for this project. The Sam Houston State University (SHSU) IRB has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations. The following is a recommendation from the IRB reviewer:

Before distributing your consent form, you will need to include a couple of checkboxes in your final version that gives participants the ability to check yes or no regarding their decision to participate in your study. Additionally, I found a couple of minor errors in the version that is attached to your application. Please check your Sam email for a draft of your consent form containing the aforementioned corrections in Track Changes.

Since Cayuse IRB does not currently possess the ability to

provide a "stamp of approval" on any recruitment or consent documentation, it is the strong recommendation of this office to please include the following approval language in the footer of those recruitment and consent documents: IRB-2021-232/August 13, 2021.

We will retain a copy of this correspondence within our records.

* What should investigators do when considering changes to an exempt study that could make it nonexempt?

It is the PI's responsibility to consult with the IRB whenever questions arise about whether planned changes to an exempt study might make that study nonexempt human subjects research.

In this case, please make available sufficient information to the IRB so it can make a correct determination.

If you have any questions, please contact the IRB Office at 936-294 4875 or irb@shsu.edu. Please include your project title and protocol number in all correspondence with this committee.

Sincerely,
Chase Young, Ph.D.
Chair, IRB
Hannah R. Gerber, Ph.D.
Co-Chair, IRB

VITA

Laurel Kathleen Fauster, Ph.D.

Sam Houston State University
 Ph.D. in Counselor Education
 CACREP Accredited

Sam Houston State University
 Doctoral Fellow
 Woodlands Community Counseling Clinic

Our Lady of the Lake University
 Master of Science – Psychology
 COAMFTE Approved Program
 Summa Cum Laude

Sam Houston State University
 Huntsville, Texas
 Double Major:
 Bachelor of Science – Criminal Justice
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 Highest Honors Bowers Honors College
 Academic Distinction in Psychology
 Outstanding Undergraduate Student Award - Psychology
 Alpha Chi - President
 Honors Tutor

Lone Star College – Tomball
 Associate of Science – Summa Cum Laude, Phi Theta Kappa

University of Houston – Downtown
 Criminal Justice Training Center
 Texas Commission on Law Enforcement Officer Standards and Training
 1385+ Continuing Education Hours
 Advanced Peace Officer Certificate

Honors Senior Thesis

Fauster, L. K. (2012). *Post-Traumatic Stress Disorder and Intelligence* (Honor's thesis). Chair: Dr. Jerry Bruce. Sam Houston State University. May.

Academic Distinction Project

Fauster, L. K. (2012). *Is Career Choice Influenced by Bias? Bias in University Students of Differing Majors* (Academic Distinction Study). Chair: Dr. Howard Henderson. Sam Houston State University. November.

Research Projects/Papers/Presentations

Fauster, L. K. (2011). *Minority Police Officers in Today's Law Enforcement: Research Coupled With True Experiences*. Presentation. Alpha Chi National Conference. Baltimore, MD.

Fauster, L. K. (2012). *Post-Traumatic Stress Disorder and Intelligence*. Presentation. Alpha Chi National Conference. Nashville, TN.

Fauster, L. K. (2012). Honors Student Guest Instructor: Criminal Profiling. Forensic Science. Faculty Supervisor: Joan Bytheway. Spring.

Fauster, L.K. (2015). *Freak: Profoundly Gifted People and Their Problems*. Presentation. Monarch School. Spring.

Fauster, L.K. (2016). *The Dude is Butt Nekkid: Supervisee Experience in Clinical Supervision*. Article. Presented by Dr. Glen Boyd, with permission. Taos Institute Clinical Supervision Conference. Scotland. Summer.

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Ongoing Research Projects

Body Talk: Reflections on Therapy Integration in Traumatic Brain Injury
Laurel Fauster

Tattoo You – How Trauma Labels Lives
Laurel Fauster

Indigo Grey – Experience of Autism Spectrum Diagnosis Within the Same Family Unit
Laurel Fauster