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# ADVERSE CHILDHOOD EXPERIENCES: THE INFLUENCE OF POLY-VICTIMIZATION ON ADOLESCENT DELINQUENCY AND ADULT CRIMINALITY

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ADVERSE CHILDHOOD EXPERIENCES: THE
INFLUENCE OF POLY-VICTIMIZATION
ON ADOLESCENT DELINQUENCY
AND ADULT CRIMINALITY


A Thesis Submitted in Partial Fulfillment
of the Requirements for the Degree of
Master of Arts


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This Thesis by: Samantha M. Qualkenbush

Entitled: *Adverse Childhood Experiences: The Influence of Poly-Victimization on Adolescent Delinquency and Adult Criminality*

has been approved as meeting the requirement of Degree of Master of Arts in College of Humanities and Social Sciences in Department of Criminology and Criminal Justice, Program of Criminology and Criminal Justice

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ABSTRACT

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Adverse childhood experiences (ACEs) are under-researched and a large part of unrecognized child victims. Although there is considerable research on trauma and adverse experiences in children, there are gaps in research concerning specific types of offending and specific ACEs. The purpose of this study is to determine if specific types of ACEs, or combinations of ACEs, influence children in differing ways related to adolescent delinquency and adult criminality. Analyses of previously collected data, specifically considering information on differences in the average number and likelihood of offenses for both juveniles and adults provides intriguing results. In concurrence with previous research, this study suggests that not only does the occurrence of any ACE significantly influence offending, specific ACEs also significantly increase the likelihood of juvenile and adult offending. Results suggest that there are four specific ACEs that significantly influence adult offending and five specific ACEs that significantly influence juvenile offending. This research also includes a variable measuring poly-victimization, which is one of three variables that significantly influences both juvenile and adult offending. Based on results of this research, it is highly recommended that policy incorporates ways to increase reporting of child victimization and increase research on different types of victimization. There should also be an increase in interventions that

focus on emotional bonds, familial relationships, cumulative continuity, and multiple

types of victimization.

TABLE OF CONTENTS

CHAPTER

LIST OF TABLES

TABLE

CHAPTER I

INTRODUCTION TO ADVERSE
CHILDHOOD EXPERIENCES

**Prevalence and Exposure**

Many children are exposed to traumatic life experiences that can impact their

futures, decisions, and quality of life as adults. Adverse childhood experiences (ACEs)

are representative of 10 highly influential events that children may experience, including

various types of household violence and exposure to drugs and alcohol. According to the

United States Department of Justice (2014), 61% of children in the United States

personally experienced or witnessed multiple types of violence between 2007 and 2008.

Poly-victimization is also common in respect to violence and ACEs. More than 38% of

children have experienced two or more victimizations within one year and more than

10% of children experienced five or more victimizations within one year (U.S.

Department of Justice, 2009). Children are exposed to these types of experiences as

witnesses and victims far too often. ACEs are also widely underreported throughout the

United States and as a result, many victims are unrecognized. Despite underreporting, the

numerous cases of children with adverse childhood experiences have prompted research

on types of trauma and the influence of trauma within psychological and criminological

fields.

**Importance and Purpose**

Psychology and criminal justice research typically focus on the 10 types of ACEs discussed in this study, although some literature suggests there are more. The purpose of this study is to determine if specific types of ACEs, or combinations of ACEs, influence children in differing ways related to adolescent delinquency and adult criminality. Patterns within these differences have also been identified, especially concerning instances of poly-victimization. Inspecting these influences based on each type of ACE can allow for a more targeted analysis of these experiences and their individual psychological, social, physical, and emotional trauma. Additionally, controlling for demographics within research on ACEs allows us to understand how children are impacted aside from differences in characteristics.

In order to fulfill the purpose of this study, as well as examine the specific topics that are addressed, there are three main research questions to be answered. These research questions are as follows:

Q1    Are there meaningful differences in the occurrence of adult criminal behavior between children who have experienced ACEs and those who have not?

Q2    Are there meaningful differences in the occurrence of juvenile delinquency between children who have experienced ACEs and those who have not?

Q3    Are certain types of ACEs, or combinations of ACEs, more influential than others on the likelihood of a child to commit offenses as an adult and a juvenile?

This study seeks to fill gaps in literature on poly-victimization by providing a deeper analysis of data that has been previously examined. Specifically, this analysis is

focused on poly-victimization, addressing various types of adverse childhood experiences and their influence on adolescent delinquency and adult criminal behavior.

CHAPTER II

DEVELOPMENTAL THEORY AND
ADVERSE EXPERIENCES

Child abuse, maltreatment, and neglect have been broadly studied as influencing

factors for future criminal and delinquent behavior. Although there are some areas of

research that lack specific investigation, there is no shortage of literature on the effects of

adverse childhood experiences. Thousands of published works can be found on the

inferences and impacts of these experiences, which have been studied for decades,

primarily as areas of abuse that influence children. Despite the extensive history on the

literature of ACEs, there are still unexplored areas of influence. ACEs are most

commonly identified as 10 experiences a child may have that are adverse, traumatizing,

and heavily influence their outcomes in life. These 10 experiences include physical

abuse, sexual abuse, emotional abuse, physical neglect, emotional neglect, witness to

intimate partner violence or mother treated violently, substance misuse within the

household, mental illness within the household, parental separation or divorce, and

having a member of the household that is incarcerated (Craig, Baglivio, Wolff, Piquero,

& Epps, 2017).

These 10 ACEs do not include all aspects of abuse that are reported, but they do

include the primary traumatic events that children experience. In 2017, there were over

787,000 child victims of maltreatment, which includes neglect, psychological

maltreatment, physical abuse, and sexual abuse (U.S Department of Health & Human

Services, 2019). Compared to previous years, the rates of child maltreatment are slowly increasing. Per every one thousand children in the United States, 8.8 were victims of maltreatment in 2012 while 9.1 were victims of maltreatment in 2016 (U.S. Department of Health & Human Services, 2018). Although it is nearly impossible to determine exactly how many cases of child abuse, maltreatment, and other forms of adverse experiences are unreported, it is assumed that most cases go unreported because family members are typically involved in the harm of the child (Karmen, 2016).

Children that are victims of adverse childhood experiences are often under four years old and have been victims for most of their lives (U.S Department of Health & Human Services, 2019). There are many reasons why these young children are at highest risk for ACEs, but it is typically dependent upon the characteristics of their offenders. Younger, less experienced, and less patient parents are more likely to harm their children (Karmen, 2016). Parents that are offenders for other crimes unrelated to child maltreatment, neglect, and abuse are also more likely to commit offenses against their children (U.S. Department of Justice, 1996). Family members that are alcohol or substance dependent have an increased likelihood of harming their children because of the inability to use appropriate judgment. Children heavily rely on their caregivers and guardians to ensure they are taken care of, especially under the age of four (Lord, Boudreaux, Jarvis, Waldvogel, & Weeks, 2002). This is consistent with research on extremely young children as they are at the highest risk to experience ACEs (Karmen, 2016).

**Adverse Childhood Experiences and Offending**

Considering that a large amount of children in the United States experience maltreatment, abuse, neglect, or other traumatic experiences, it is no surprise many children within the juvenile justice system and adults within the criminal justice system have had these experiences. Some research suggests it is more common to see offenders that have histories as victims than non-offenders with histories as victims (Fox, Perez, Cass, Baglivio, & Epps, 2015; Garia-Gomis, Villanueva, & Jara, 2017). The history of victimization is consistent for child, adolescent and adult offenders. Child victims are more likely to be re-victimized later in life (Desai, Arias, Thompson, & Basile, 2002) and have other emotional, psychological, or physical problems related to their victimization (Shannon, Beauchaine, Brenner, Neuhaus, & Gatzke-Jopp, 2007).

The 10 adverse childhood experiences are most commonly linked with later adult criminality, (Jung, Herrenkohl, Lee, Klika, & Skinner, 2015; Reckdenwald, Mancini, & Beauregard, 2013) as well as increased behavioral problems related to attachment and delinquency (Asscher, Van der Put, & Stams, 2015; Smith & Thornberry, 1995).

Another issue related to ACEs and violence is the cyclical nature that appears in families. This cycle of violence is often explained as generationally continuing abuse, neglect, maltreatment, or exposure to violence. As a child grows up exposed to violence and victimization by their parents or family members, they also become prone to exhibit violent behavior themselves and mirror what they have learned as appropriate actions through adult criminality (Murrell, Christoff, & Henning, 2007). These children start as victims and can become offenders, transferring the abuse and exposure to violence onto their own children and the next generation of family members as well. Not only does

exposure to violence or repeated violence increase the likelihood of offending, it also increases the risk of poly-victimization (Farrell & Zimmerman, 2017).

**Cycle of Violence**

Research concerning the cycle of violence and adult criminality is commonly investigated within the scope of adverse childhood experiences and their influence. Children that experience abuse, maltreatment, neglect, or any of the other adverse childhood experiences are more prone to continue the cycle of violence that began with their parents (Reckdenwald et al., 2013). These adults may not continue the violence directly through their children, but they may continue to commit other violent offenses, such as robbery or assault, that are not related to adverse childhood experiences. Both sexual abuse and physical abuse have been linked to contributing to the cycle of violence, especially for assaults and violent behavior (Herrera & McCloskey, 2003).

Children are influenced by the effect of ACEs in many different ways and it shows through their behavior, actions, and development. These influences may include offending, acting out, physical or health-related changes, and even changes in grades or interests. As many as nine out of 10 violent offenders have been physically or sexually abused by someone they knew (U.S. Department of Justice, 1996). Nearly 86% of offenders that victimized adults and 95% of offenders that victimized children also reported prior abuse as children (U.S. Department of Justice, 1996).

There are a few predominant explanations as to why children who have been victimized seem to continue the cycle of violence and offend as adults more often than children who are not victimized. One of the most common is that children who are raised around violence and adverse experiences assume this behavior is normal or expected and

continue the violent behavior throughout the next generation (Cunningham, 2003). Even being a witness to violence can heavily influence a child to use violence later in life on their own children (Cunningham, 2003). Parents and guardians who use violence within a household provide examples for their children on how to react and adjust to situations (Murrell, et al., 2007). Modeling the behavior of their parents, whether they are victims themselves or witnesses to violence, children learn to exhibit the same behavior of their family members that use violence within the home (Murrell, et al., 2007).

**Differences in Impact**

Many studies focus on the impact ACEs have on adults and children, but fail to differentiate between the types of ACEs that are experienced. The influence of physical abuse, neglect, and sexual abuse are identified as having varying levels of impact in at least two studies that examine these differences across ACEs (Maxfield & Widom, 1996; Widom & Maxfield, 1996). These studies also highlight two of the main problems in research related to ACES; not specifically looking at all 10 ACEs and outdated research. Maxfield and Widom (1996) suggest that both childhood abuse and neglect influence delinquency, adult criminality, and violence. They also suggest that there are differences in the effects of abuse and neglect, specifically related to the age, race, ethnicity, and sex of the child. The need for more research in this area that specifies the differences on the influence of each adverse childhood experience is clear within their research.

ACEs can range from substance abuse within a household to sexual abuse, which may be drastically different considering their impact on a child. Although it is important to address the effects of these ACEs, it is also important to distinguish which ACEs have the largest impact on offending and how each ACE has differing levels of impact on

offending. Experiences affect children differently depending on the child and circumstances, but establishing patterns within different types of impacts can help with how problems are addressed later in life (Tyler & Johnson, 2006). This type of research can show how different types of ACEs impact children and it is extremely important in addressing how these children are taught to handle the violence and situations they grow up in. Some children that experience maltreatment, neglect, or abuse never become involved in criminal activity or continue the abuse, while others become career criminals and abuse their children as they were abused, continuing the cycle of violence.

**Common Types of Impact**

It is more likely for child victims to run away, engage in delinquency, engage in sexual activity at an early age, and be victimized later in life than children who were not victims (Tyler & Johnson, 2006). They also tend to engage in riskier behavior compared to children who have not been victimized and have a higher likelihood of suicide (Chen, Chen, Liu, Kuo, & Huang, 2018). Childhood adversity has also been associated with higher rates of delinquency that begin earlier in life and slower rates of decline in delinquent behavior during the transition into adulthood (Connolly & Kavish, 2019). Children that have been physically or violently abused are more likely to become physically violent or antisocial as juveniles. As adults, abused children are also more likely to become physically or violently abusive with their own children than children that were not physically or violently abused (Savage, Palmer, & Martin, 2014). Severe maltreatment has been linked to increased risk of arrest for both adults and children, as well as increased risk of recidivism (De Sanctis, Nomura, Newcorn, & Halperin, 2012) and a shorter time from release to recidivism (Wolff, Baglivio, & Piquero, 2017).

Children with multiple ACEs have a higher risk of becoming serious, violent, and chronic (SVC) offenders and their risk increases with each additional adverse childhood experience (Fox et al., 2015). For example, a child that has experienced five ACEs may have a higher risk of becoming a SVC offender than a child that has experienced one ACE. SVC offenders may also have increased severity and risk for recidivism if they have previous experiences of non-specific victimization, family criminal history, physical abuse, and emotional abuse (Mulder, Brand, Bullens, & van Marle, 2011). Despite significant research on ACEs, delinquency, and offending, there is still limited research on the differing impacts of types of ACEs and poly-victimization on children.

Although the main focus of this research is on the impact of ACEs on offending, ACEs can also impact other areas of life during childhood and adulthood. There is considerable research on the overall impact for adult health and some research on the influences on juvenile delinquency, but limited research on the specific influence of each type of experience and their cumulative impact. There is some evidential support for trauma having a cumulative impact, although differences between types of trauma and types of victims are still under-researched (Messman-Moore, Long, & Siegfried, 2000).

Adults that have experienced ACEs have a higher risk of poor health compared to adults that did not experience childhood adversities (Font & Maguire-Jack, 2016). There are limited explanations as to why this occurs, but it is suggested that child maltreatment and abuse differ in their impact on adult health. Socioeconomic status may also influence how these childhood experiences influence poor health in adults (Font & Maguire-Jack, 2016; Shaefer, Lapidos, Wilson, & Danziger, 2018). As there are differences in the impact on adults based on the types of ACEs experienced in childhood, it is important to

also identify if there are differences in the impact on children based on the types of ACEs experienced.

**Perception of Adverse Childhood
Experiences**

The differing impacts of ACEs on children are vastly under-researched. This makes it difficult to specifically determine how the short-term and long-term effects differ between maltreatment, various types of abuse, and neglect. Physical abuse and other types of experiences that are labeled as more serious typically receive the most attention in research with respect to offending and delinquency. Neglect is the most common and deadly type of reported victimization for children and has a significant impact on the life of a child. Neglect has specifically been associated with juvenile conduct problems through a lack of parent-to-child trust, monitoring, and bonding relationships (Ryan, Williams, & Courtney, 2013). Neglect, defined as poor supervision and a disorganized, chaotic home environment, has also been linked to future adult delinquency (Maughan & Moor, 2010).

Socially and culturally, it is assumed that abuse, especially sexual abuse, is the worst type of experience for a child. Sexual abuse is also thought to be the most traumatizing or influential on a child, but other types of ACEs, such as neglect, can also influence a child in an extremely traumatizing manner (Berzenski, Bennet, Marini, Sullivan, & Lewis, 2014). Neglect and maltreatment are physically, emotionally, and psychologically damaging, similar to all other forms of abuse, even though these types of ACEs are assumed to be less damaging. It is pre-mature to suggest which types of ACEs are most influential on a child because of the lack of research cross-examining their influences. Some preliminary research does suggest that sexual abuse and an additional

ACE for the same child may increase risk-taking behaviors more than other combinations (Hahm, Lee, Ozonoff, & Van Wert, 2010).

The severity of ACEs can also play a role in how they impact children. Despite terminology and the cultural assumptions that certain forms of abuse may be more harmful, it can depend on the type of abuse, the child, the duration, and many other factors. Neglect and maltreatment are far more common and deadly than other types of abuse, which makes the actual level of harm from this type of adverse experience potentially as severe as physical or sexual abuse (Ryan et al., 2013). Abuse is typically intentional and requires more definitive actions, while neglect and maltreatment can also include passive actions and carelessness with dependents. Type of ACE, severity of ACE, length of victimization throughout life, total number of times of a child has been victimized, characteristics of the victim, and overall level of trauma felt by the child can influence how these traumatic events influence children throughout their lives.

### Adverse Childhood Experiences as Influences

The differences between the impact of adverse childhood experiences has been linked to offense type, sex, and many other variables, but not each individual experience. The 10 ACEs are typically grouped together in previous research to determine if there are significant relationships between ACEs collectively and other variables such as race, sex, socioeconomic status, and offending. Most research that is conducted on specific ACEs combines at least a few of them, such as all types of abuse, while also focusing on other characteristic-based factors. Comparisons are not usually provided between the types of experiences as the focus is primarily on the interrelated relationships between an adverse childhood experience and a characteristic of the victim such as age, race, sex,

socioeconomic status, offense type, or background. There is a clear gap in research concerning these comparisons in ACEs and the various types of children that are victimized.

**Under-Researched Adverse
Childhood Experiences**

A few of the adverse childhood experiences are more understudied than others and tend to be left out of the literature. Although these experiences may not be combined with others, they are far less researched compared to the more commonly discussed ACEs. Physical, emotional, and sexual abuse, which typically are intertwined in previous research into one category of abuse, are researched more often when focusing on children than intimate partner violence (IPV) or household substance abuse.

Intimate partner violence and household substance abuse are more commonly found in literature concerning adult arrests and violence instead of adverse childhood experiences. Intimate partner violence is gradually becoming integrated with research on childhood experiences. IPV as an adverse childhood experience is directly related to the psychological and emotional trauma that a child may experience from witnessing or being involved with the abuse between two partners, typically their parents (Shannon et al., 2007). This abuse does not necessarily have to be physical, but any type of abuse or violence that a child witnesses can be influential to their development and childhood.

**Violence and trauma.** Violent treatment of the mother and parental separation or divorce may also be related to the influence of IVP during childhood and adulthood. Intimate partner violence, violent treatment of the mother, and parental separation or divorce have the potential to put a child in the position to witness repeated emotional, physical, or psychological traumatic experiences. Despite the multiple levels of influence

and wide-ranging experiences these three ACEs have on children, they are far less researched in respect to the influence on a child.

Similar circumstances, such as emotional trauma, the loss of a parent through death, and exposure to violence during early development have been researched in respect to impact on children. These events are not directly defined as adverse childhood experiences, although they are similar in concept and much more pronounced in research. Emotionally traumatic experiences cover a much wider range of events compared to the 10 definitions of ACEs, although they are relatively similar to the less traditional ACE definitions. These less traditional ACEs include violent treatment of mother or exposure to intimate partner violence, parental separation or divorce, substance abuse within the household, mental illness within the household, and incarcerated household member.

Intimate partner violence exposes children to violent behavior and may predispose them to exhibit their own violent behavior through watching their parents (Savage et al., 2014). Children that are exposed to IPV are more likely to become violent during their childhood and to continue the cycle of domestic violence with their own children later in life compared to children who are not exposed to IPV. Children that are exposed to violence tend to also exhibit violent behavior (Savage et al., 2014). As adults, children that have been exposed to violence early in life are more likely to become parents that expose their own children to violence compared to children that have never witnessed IPV (Huang, Vikse, Lu, & Yi, 2015). Caregivers that are domestic violence victims are also more likely to contribute to the maltreatment, abuse, and neglect of a child (U.S. Department of Health and Human Services, 2019).

**Substance and alcohol abuse.** Substance and alcohol abuse by a caregiver can also serve as risk factors for contributing to the maltreatment, abuse, or neglect of a child, and even child fatalities. Parents and caregivers that abuse substances or alcohol influence their children to begin abusing at a young age, which can lead to earlier involvement with law enforcement, delinquency, and dependency (Shannon et al., 2007). These parents are more likely to have violent outbursts or harm their children because of substance or alcohol abuse. In extreme cases, this dependency can also lead to increased risk in maltreatment, abuse, and neglect because of the amount of time and resources that parents put into getting substances instead of caring for their children (Walsh, MacMillan, & Jamieson, 2003). Research on the various ways that substance abuse within a household can influence a child through criminal or deviant behavior is rather limited as most of the focus is on the abuser, not the effected child.

Despite the limited amount of research on household substance abuse, there are a few things that we do know about its influence on children. Household substance abuse is the act of a household or family member exposing a child to substances and the emotional or physical impact they have on people within the household. Early substance abuse is the act of a child or underage adolescent using substances illegally, which can be influenced through household substance abuse. Early substance and alcohol abuse increases the likelihood that juveniles become involved in the justice system and continue to commit similar offenses in adulthood (Baglivio et al., 2014). Household substance abuse may also contribute to earlier use and abuse of both substances and alcohol by children who are witnesses to this abuse.

Household substance abuse has also been associated with an increased risk for ACEs (Clemens, et al., 2019). Childhood trauma has been correlated with opioid addiction, but not specifically with drug related criminal charges (Garami, et al., 2019). Increased severity of childhood trauma and increased number of childhood traumatic experiences may also increase the likelihood of addiction and substance abuse (Garami et al., 2019). The research that focuses on children witnessing alcohol or substance abuse is concerned more on the psychological factors that are influenced by these circumstances instead of delinquency or criminal behavior.

**Mental illness within household.** Mental illness within the household is also a factor that contributes to the adverse experiences of a child. Not only are children of parents with mental illnesses more likely to have a mental illness themselves, they are also more likely to feel the emotional impact of the parents' illness within their family (Clemens et al., 2019). Many people that are involved with the juvenile justice system or criminal justice system also have mental illness and struggle with finding proper help to maintain a life away from crime (Lamb & Weinberger, 2017). Although mental health is acknowledged as a contributing factor for incarceration, there is limited research on the impact on a child from exposure to mental illness within a household and if this exposure may lead to the delinquency or criminality of the child. The concept of mental illness within a household having an impact on a child that does not have mental illness is fairly new with respect to the scope of criminal justice. Research tends to focus on the generational and familial influence of mental illness unrelated to influences on later offending and delinquency. This suggests yet another gap in research concerning the influence of ACEs on adolescent delinquency and adult criminality.

**Incarcerated household member.** One ACE that has been increasingly studied within the last decade is having a member of the same household that is incarcerated. The impact of having an incarcerated parent on a child is better understood than some of the other under-researched ACEs. A child that has a parent who is incarcerated is more likely to have behavioral problems and become involved in criminal activity (Reed & Reed, 1997). The absence of a parent impacts the development, consistency, and role models in a child's life. Children may also become exposed to the criminal justice system at a young age because of a family member or caregiver's incarceration. It is not yet clear if the absence of a particular member of the household is more influential than the exposure to the criminal justice system. Current research does support that having a member of the same household that is incarcerated can impact children negatively and urge them towards delinquent or criminal behavior (Thombre, Montague, Maher, & Zohra, 2009).

This cycle of incarceration, or intergenerational incarceration that occurs in families, is fairly common. Once a parent becomes involved in the criminal justice system and is incarcerated, their children also become exposed to the influence of serving time. Not only are children's parents, guardians, or other family members absent for a period of time, children also become exposed to the familiarity of the criminal justice system, incarceration, and the consequences for breaking the law. Children that become part of the cycle of incarceration will likely continue the cycle with their own children. When this cycle of incarceration occurs, it is common to see families with many generations that have been incarcerated, break the law, and accept illegal activities as a regular part of life.

All 10 adverse childhood experiences have been shown to influence children negatively as risk factors for delinquency and adult criminality. A few of the ACEs, such as physical and sexual abuse, have much more information on their impact on children's lives, especially related to the juvenile or criminal justice system. Both of these ACEs have specifically been linked to increased problems within the family (Walrath, Ybarra, Sheehan, Holden, & Burns, 2006) and increased risk of re-victimization later in life Messman-Moore, et al., 2000). It is clear that more research needs to be done with ACEs as a whole, especially for the more under-researched ACEs such as IPV and incarcerated household members. Specific types of abuse are focused on more often as negative influences compared to the impact of household mental illness, exposure to intimate partner violence, or having an incarcerated family member. Current literature does not account for the impact of all 10 ACEs and does not differentiate between the varying influences of each experience or the cumulative impact of these experiences.

**Theoretical Background**

Developmental theories focus specifically on the age-crime curve and the way that development throughout the life-course influences offending behaviors. Experiences during development influence the prevalence of offending through individual changes in a child as a result of everything experienced and witnessed throughout life. Development can be influenced through numerous factors including parents, siblings, environment, social influences, and traumatic events. Although many criminological theories strive to explain aspects of the behaviors of adolescents, developmental theories focus on this period of offending especially. Developmental and age-graded theories, by Moffitt (1993) and Sampson and Laub (1993) provide excellent explanations for the relationship

between adverse childhood experiences and offending during adolescence and adulthood. Developmental theories also consider the cumulative effect of ACEs on children.

Developmental theories factor in the increased risks that adolescents are pre-disposed to between the ages of 12 and 18, also known as the age-crime curve. Developmental theories, as proposed by Sampson and Laub (1993), attempt to explain juvenile delinquency, behavioral transitions, and adult criminal behavior. Both familial contextual factors and background structural factors influence the likelihood that a child will become involved in the juvenile justice system. An intimidating demeanor towards children by parents, lack of supervision, parent-to-child rejection, and child-to-parent rejection are all familial context factors that influence children. The influence of family, especially parents, is crucial to the development of children and adolescents. Many of the adverse childhood experiences can lead to the parent-to-child and child-to-parent rejection (Sampson & Laub, 1993). Background structural factors such as cumulative continuity, previous delinquent behavior, and prior involvement with the juvenile justice system also influence the likelihood that a child will be involved in the juvenile justice system (Sampson & Laub, 1993).

In relation to adverse childhood experiences, previous research and theoretical support seem to agree on the significance of familial influences and cumulative impact. Each additional adverse childhood experience (cumulative continuity) significantly increases the likelihood that a child will have more problems related to severity of offense and continuous offending (Fox et al., 2015). Cumulative continuity accounts for the cumulating experiences that a child accrues continuously throughout their life. This concept also suggests that a child who has experienced multiple ACEs throughout their

life may have a greater risk of offending compared to a child that has only experienced

one ACE for a brief period in their life. Cumulative continuity also addresses the core of

developmental theories, which suggests that development is influenced through people

we interact with, experiences from those interactions, and overall differences between the

development of each child through influences in their lives (Moffitt, 1993).

Moffitt has also contributed to the theoretical development of explaining age-

related offending patterns in juveniles (Moffitt, 1993). Adolescence-limited and life-

course persistent offenders explain the differences between adolescents that offend during

the peak of the age-crime curve and adolescent offenders that continue offending into

adulthood. Adolescence-limited offenders tend to offend because of peer influence, strain

felt from experiencing the maturity gap, and from interactions with life-course persistent

offenders (Moffitt, 1993). Life-course persistent offenders are more likely to have

adverse childhood experiences and are more serious, violent offenders compared to

adolescence-limited offenders. Life-course persistent offenders must also have

neurological problems and disadvantaged environments (Moffitt, 1993). These types of

experiences and problems could be exaggerated or brought on through ACEs.

Moffitt (1993) suggests that a small group of offenders are truly life-course

persistent and most offenders are adolescence-limited, which means that most juvenile

offenders age out of crime. Examining characteristics of life-course persistent offenders

is especially important in research concerning ACEs. Adverse childhood experiences

have quite a bit of influence on development for both types of offenders, but especially

for life-course persistent offenders. These more serious offenders may also have weaker

bonds in childhood and, in addition to their neurological problems and disadvantaged

environments. ACEs may contribute to the life-course persistent offenders because of the negative influence during their development, in addition to the disadvantage in their environment. Adolescence-limited offenders are more influenced by the age-crime relationship; however, adverse experiences may also influence these types of offenders, especially for continuing offenders that offend during both early childhood and adolescence.

**Adverse Childhood Experiences**
**and Developmental Theory**

Research on adverse childhood experiences often incorporates multiple theoretical perspectives. Developmental psychology, developmental theories within criminal justice, developmental theories of antisocial behavior, and other variations of development-related theories are most commonly suggested as explanations for the links between ACEs and offending. Moffitt's (1993) theory on developmental taxonomy is commonly utilized for examining the intricate ways that development and experiences that occur during development can influence adolescence-limited and life-course persistent offenders. Inadequate parenting and behavioral problems are two primary factors within the development of life-course persistent offenders that can be explained through adverse childhood experiences and are incorporated into developmental theory (Baglivio, et al., 2016).

ACEs add circumstances into a child's life that are specifically identified within developmental taxonomy as experiences that are present in a life-course persistent offender. Inadequate parenting, childhood behavioral problems, and neurocognitive problems are all associated with life-course persistent offenders and adverse childhood experiences (Baglivio et al., 2016). The offending patterns identified in life-course based

theories on development begin in childhood and may be explained through early

exposure to offending, adversity, violence, and trauma (Fox et al., 2015). Based on the

criteria for more serious offenders that are life-course persistent and chronic,

developmental taxonomy explains the most amount of behavior and justifies the

theoretical support for the influence of ACEs on children and offending. Children that are

in the process of developing learn from their experiences, surroundings, and especially

from adults they trust, which explains most of their behavior (Baglivio et al., 2016).

CHAPTER III

REVIEW OF METHODS, VARIABLES,
AND SAMPLE

**Purpose**

The purpose of this study is to determine if specific types of ACEs, or combinations of ACEs, influence children in differing ways related to adolescent delinquency and adult criminality. While controlling for sex, race, age, and approximation of family socioeconomic status, date of birth, hospital of birth, and class in elementary school the following research questions assess the relationship between ACEs and offending. Examining the direct influences of each type of ACE on children can allow for a more targeted approach to addressing these experiences and their individual psychological, social, physical, and emotional trauma.

In addition, many studies on the impact of parental incarceration, abuse, maltreatment, exposure to violence, and other traumatic experiences have a considerable gap in the research on combinations of these experiences. The few studies that examine more than one ACE and their influence on children are outdated and need to be readdressed. Patterns in influence and outcome differences between children who have experienced ACEs and children who have not experienced ACEs are also neglected as topics within the research on ACEs.

**Research Questions**

This analysis is designed to address these gaps in previous research while also

adding to the current research on the influence of ACEs on children related to poly-

victimization. The following research questions address the purpose of this study:

Q1    Are there meaningful differences in the occurrence of adult criminal
behavior between children who have experienced ACEs and those who
have not?

This research question addresses the purpose of the study by looking at the

influence of adverse childhood experiences on adult offending. It is important to

distinguish specific outcomes of these influences related to adult criminal behavior.

Combining the affect of ACEs on juvenile and adult criminal behavior can be

problematic, as theoretical development suggests. Different types of offenders

(adolescence-limited and life-course persistent) can be influenced differently by ACEs

and may have different life outcomes (offending and non-offending).

Q2    Are there meaningful differences in the occurrence of juvenile
delinquency between children who have experienced ACEs and those who
have not?

This research question addresses the purpose of this study by broadly examining

the influences that each ACE has on children related to their delinquent behavior.

Determining the types of influences that ACEs have on children allows us to examine the

impact within the sample. This is primarily analyzed through determining if children who

have experienced ACEs have a higher average number of offenses during their childhood

compared to children who have not experienced ACEs.

Q3    Are certain types of ACEs, or combinations of ACEs, more influential
than others on the likelihood of a child to commit offenses as an adult and
a juvenile?

This research question addresses the purpose of this study by looking deeper into the phenomenon of poly-victimization. It is rare to find research that examines the influence of multiple ACEs on a single child where there are multiple instances of different types of victimization. It is important to distinguish if there are differing impacts on children based on the combination of ACEs that they experience in addition to the individual ACEs they experience. If some ACEs are more influential than others, certain combinations of ACEs may also be more influential than other combinations. For the purpose of the study, poly-victimization refers to combinations of ACEs, specifically the occurrence of two or more different types of ACEs for the same child. Poly-victimization can also refer to the number of times someone is victimized, whether that is the same crime multiple times or different crimes multiple times. For this study, poly-victimization only refers to the occurrence of two or more different types of ACEs for one child.

**Institutional Review Board**

This research qualified for exempt status. The data used were de-identified secondary data that were publicly available through the Inter-University Consortium for Political and Social Research (ICPSR). There was no risk to participants for their records (initially collected data) to be used in this secondary analysis. Research involving the collection or study of existing, documents, records, pathological specimens, or diagnostic specimens that is publicly available is qualified for exempt status. The original investigator also collected and recorded the data in a manner that de-identifies the participants and they cannot be linked back to the data. This also qualified this research

for exempt status. The project title is listed on IRBNet as follows: Adverse Childhood

Experiences: Specific Influences on Adolescent Delinquency and Adult Criminality[1].

Data were stored on a password protected encrypted hard drive. These data are

publicly accessible through the ICPSR database. Specifically for this research, it was only

accessible to the primary researcher. Data were de-identified and only corresponding case

numbers can identify the participant across files. These case numbers cannot specifically

identify each child or adult. These are not the numbers used to identify the official case

records. Subjects were completely anonymous and the data cannot be traced back to the

original records or identifiers. The region was identified where this data originated from,

although "Midwestern area" is widely interpretable and was not precisely identified.

There were no potential risks to the participants or the records of the participants

that were used in these analyses. The data were de-identified and the participants cannot

be directly identified. There were no foreseeable risks and no necessary protection

against risks required. Discomfort, stress, or physical fatigue were not applicable risks for

participants. There were also no direct benefits for the participants from the sample. As

subjects were de-identified and they were not directly contacted, debriefing was not

necessary. Subjects did not stand to benefit directly from their participation.

Compensation was not provided for this research as the data were secondary and

no direct data collection was conducted specifically for this analysis. Subjects were not

compensated for inclusion in the secondary data analysis. There were no costs to the

participants for this research because the collection process was already complete and

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[1] IRBNet ID: 1502202-1. Board Action: Exempt Status.
Date Submitted: 10/09/2019. Effective Date: 10/18/2019
Date Submitted: 10/09/2019. Effective Date: 10/18/2019 scriptions, see Appendix A,

only official records were used during the initial collection. No significant risks or benefits were present or needed to be communicated to the participants. Information and data was de-identified during the initial collection process and secondary data analysis did not pose any additional risks or offer additional benefits directly to the participants.

**Population and Sample**

This study provided a suitable transition from sample to population as there were a large number of people that this study was relevant to. Children who have previously experienced ACEs can learn and understand the impact of their experiences on the rest of their lives from a more applicable perspective. Adults who have a history of ACEs and potential effects from the impact of their ACEs can also benefit from understanding the effects of their childhood experiences. The relevance of this study can also be directly applied to people who feel the potential effects of ACEs, such as deviancy, incarceration, delinquency, and physical or mental health problems. Not only can children and adults better understand how adverse childhood experience impact themselves, professionals within the criminal and juvenile justice system can also benefit from understanding the impact of these experiences on their clients.

The data used for this analysis was secondary data originally collected between 1986 and 1988. These cases were collected using a prospective cohort design over a large geographic area that was representative of the population. The data used to examine adverse childhood experiences and the effects of these experiences, especially criminal behavior, were collected from a Midwestern metropolitan area within the United States. Data were obtained from adult arrest records, juvenile court and probation records, birth records, Bureau of Motor Vehicles (BMV) records, and marriage licenses. All children

under the age of 12 from 1967-1971 within this Midwestern area were included in the data collection from 1986-1988. The data were collected during the delayed time frame in order to allow for these children to become adults and for official records to be finalized. Adults and juveniles with criminal records who also had cases of abuse or neglect were compared to a matched control group that had no documented records of abuse or neglect. This dataset consisted of 908 children who had experienced at least one ACE and 667 children who had not experienced an ACE as determined through official records. Compared to previous research, this prospective design incorporated a larger sample, more closely matched control group, and the separation of abuse and neglect events.

The initial sample collected from cases of adverse childhood experiences included 2,623 children. In some of the juvenile court cases, incidents were not specifically related to ACEs, although the records initially indicated otherwise. For example, adoption of the child as an infant, "involuntary" neglect only, placement only, and failure to pay child support cases were all omitted from the sample (Widom, 1989). It should be noted that cases where abused or neglected children who were adopted into different families were thrown out in addition to the four other conditions listed. The nature of these types of cases, such as name changes and expunged criminal histories, made it exceedingly difficult to obtain accurate records. Based on this omitted information, research utilizing this dataset, including this study, is not generalizable to children who have experienced an ACE and were later adopted into a different family.

Although this dataset is nearly 50 years old, it is rare to find data that includes both juvenile and adult records within one dataset. The original purpose for this dataset was to examine if there were relationships between child abuse or neglect and criminal or

violent behavior (Widom, 1989). It was also designed to examine if being a victim of adverse experiences in childhood leads to adolescent offending, adult offending, or violent offending (Widom, 1989). For an analysis designed to examine the impact of ACEs, it was crucial to obtain data that represents both children who have recently had adverse experiences and adults who may feel more of the impact later in life. It was also important to identify more than one or two types of ACEs within the data in order to determine the effects and life outcomes of each different type of experience. Most data collected on this topic include only a single ACE or compare two without considering the rest of the ACEs. This dataset included nine of the 10 ACEs specifically addressed in this analysis, which was extremely important in comparing the effects and differences between each.

The original purpose of the data used in this analysis was to examine relationships between ACEs, especially child abuse and neglect, and criminal or violent behavior (Widom, 1989). Childhood victimization and exposure to violence that leads to offending in adolescence and adulthood was also a key component. The design was used specifically to examine relationships between abuse or neglect and arrests as juveniles or adults with a focus on violent offenses (Widom, 1989). As these data were rich in identifying the information unique to each adverse experience and each relationship to offending, it was ideal for the analysis conducted in this study.

**Variables**

The variables are organized into five different datasets that have been merged into one. The first file consists of all demographic information, including race, sex, and date of birth. The second file includes specific details on the adverse experience such as

duration, type, and incident. The third file explains details on the offender and family dynamics. Files four and five incorporate the adult and juvenile offense information, respectively. The five files were merged based on case number and group variable. The case number identifies the matched control case to each case in the experimental group and the group variable identifies each person and their corresponding records for offending and ACEs. The final merged file includes corresponding records for each child in respect to the absence or presence of a criminal record and adverse childhood experience. In total, 1,575 individuals were included in the original, finalized data collection.

Developmentally-based research may include variables that measure interactions between offenders and their environment that influence behavior within development. Adverse childhood experiences are one of the primary variables that can be measured to examine these changes in behavior. There are many components of development where children can be influenced to become delinquent and offend later in life, especially within their environment and familial relationships. Both independent and dependent variables are informed through core theoretical foundations, such as influences that can change behavior (independent) and records that measure these changes in behavior (dependent).

**Independent Variables**

Adverse childhood experiences are the primary focus of this analysis. Nine of the 10 identified ACEs are measured as independent variables within the data. Substance misuse within the household is not specifically measured as a part of this dataset and therefore cannot be included in the analysis. Each of the nine other ACEs are specifically included in the dataset. Type of ACE and the occurrence of multiple ACEs with one child

are extremely important variables for this analysis as well. These variables are used to measure the type of ACE experienced and poly-victimization.

All nine ACEs, or independent variables, are measured dichotomously (i.e. 1=ACE occurred and 0=ACE did not occur) and coded separately to ensure that each one is identified as occurred or did not occur. There is also a dichotomous variable that determines if poly-victimization occurred (i.e. 1=poly-victimization occurred and 0=poly-victimization did not occur). For example, a child that has experienced more than one type of ACE would be coded as one and a child that has either not experienced any ACE or has only experienced one type of ACE would be coded as zero.

Up to four different instances of ACEs are recorded and coded in the original dataset as 18 different potential injuries for physical abuse. Neglect also allows for up to four different instances to be recorded, but with 15 different descriptions for neglectful care. Sexual abuse can be recorded as two separate instances with 16 different description codes. Each of these ACEs also have five different codes explaining the duration of each instance. Three separate experiences of other adverse, traumatizing events are also recorded in the original dataset, including violence at home, incarcerated parent, or household alcohol and drug use. There are 12 coded descriptions for these ACEs that are not directly considered abuse, neglect, or maltreatment as specifically outlined through the other coded categories.

For each ACE that is coded as occurred, each specific description is also recoded for that ACE. For example, if neglect occurs, it is coded as 1 for occurring in the dichotomous variable and 1-99 based on the description of the neglect in the second variable for the same instance of neglect. Neglect is coded up to four separate instances

as follows: 0=no neglect to child or other children in the family, 1=no neglect to child, but neglect to sibling is present, 2=physical neglect (i.e. not clean, not provided for with food, clothing, housing etc. unclean home and body), 3=physical neglect (i.e. adequate medical attention not provided, physical complaints such as pain, fatigue not attended to), 4=neglect related to skin disorders such as infections, 5=does not provide supervision (i.e. left child at home for periods of time, but did not abandon), 6=educational neglect (cannot keep child in school), 7=abandoned by mother and father, 8=mother or father does not want to keep child (temporarily or permanently), 9=other guardian does not want to keep child (temporarily or permanently), 10=verbal abuse (swearing or threats), 11=not keeping appointments with welfare or school officials, 12=confinement, 51=emotional neglect, 99=not certain of incidence of neglect. The same child can have up to four separate instances for neglect and physical abuse (coded as 1,2,3, and 4 depending on the instance).

Physical abuse is coded up to four separate instances as follows: 0=no physical abuse to child or other children in the family, 1=no physical abuse to child, but physical abuse to sibling is present, 2=mention of physical abuse but no mention of injuries, 3=bruises or welts, 4=sprains or dislocations, 5=malnutrition, 6=freezing, 7=burns or scalding, 8=abrasions or lacerations, 9=wounds, cuts, or punctures, 10=internal injuries, 11=bone fractures, 12=skull fractures, 14=teeth knocked out, 51=failure to thrive, 52=tied up, 98=other physical abuse, 99=physical injuries possibly sustained (i.e. old scars, etc.).

Sexual abuse is coded up to two separate instances as follows: 0=no sexual abuse to child or other children in the family. 1=no sexual abuse to child, but sexual abuse to

sibling is present, 2=fondling or touching in obscene manner, 3=sexual abuse but specifics not provided, 4=vaginal penetration with penis, 5=vaginal penetration with something other than penis, 6=sodomy or anal penetration, 7=forced to perform sexual acts, 8=evidence of sexually transmitted disease, 9=evidence of sibling incest, 10=forced to perform oral sodomy, 11=forced to submit to oral sodomy, 12=evidence of parental incest, 13=exposing to child, 14=tried to entice into a car, 51=allegations of sexual abuse but uncertain. Sexual abuse also contains an injuries sustained as a result of abuse variable that is coded as 0=none, 1=yes, 2=not applicable, 3= unknown.

Other types of abuse and neglect that do not match criteria specifically for neglect, physical abuse, or sexual abuse can be recorded up to three separate instances for the same child. Other types of abuse or neglect are coded up to three separate instances as follows: 0=none, 1=needed wardship placement of child (i.e. clinic or half-way home), 2=wardship needed as guardians able to care for child wish to establish legal guardianship (the state), 3=mother or legal guardian temporarily unable to care for child (medical reasons), 4=mother or legal guardian temporarily unable to care for child (financial reasons), 5=mother or legal guardian temporarily unable to care for child (in prison or jail), 6=mother or legal guardian temporarily unable to care for child (in a mental hospital or mentally incapable), 7=mother or legal guardian temporarily unable or unwilling to provide for child (institutionalized, type unknown), 8=mother or legal guardian temporarily unable to provide for child (unknown reason), 9=questionable moral environment (i.e. frequent pregnancies of unmarried mother, alcohol or drug use, and mother living with unmarried partner), 10=death of guardians, 11=violence within the home not directed at the child (intimate partner violence). Family disruption is

measured within another variable that is not grouped with the other abuse variables. Evidence of family disruption is a dichotomous variable coded as 0=none and 1=yes, indicating divorce, separation, or death of a family member.

In order to identify the nine specific ACEs that are analyzed in this study, there was a significant amount of recoding conducted in order to isolate the specific descriptions included from the original four types of ACEs as they were labeled. For the purpose of addressing the third research question, each description provided for the ACEs is grouped into the nine experiences that are be specifically analyzed. Physical abuse, sexual abuse, emotional abuse, physical neglect, emotional neglect, witness to intimate partner violence or mother treated violently, mental illness within the household, parental separation or divorce, and having a member of the household that is incarcerated are all re-coded from the existing descriptions as some overlap in the original codes and may be defined within the same type of ACE. For example, the recoded variable "physical abuse" includes the original descriptive codes 2-99 (2=mention of physical abuse but no mention of injuries, 3=bruises or welts, 4=sprains or dislocations, 5=malnutrition, 6=freezing, 7=burns or scalding, 8=abrasions or lacerations, 9=wounds, cuts, or punctures, 10=internal injuries, 11=bone fractures, 12=skull fractures, 14=teeth knocked out, 51=failure to thrive, 52=tied up, 98=other physical abuse, 99=physical injuries possibly sustained (i.e. old scars, etc.) because these descriptions are all considered types of physical abuse.

Sexual abuse includes the original descriptive codes 2-51 (2=fondling or touching in obscene manner, 3=sexual abuse but specifics not provided, 4=vaginal penetration with penis, 5=vaginal penetration with something other than penis, 6=sodomy or anal

penetration, 7=forced to perform sexual acts, 8=evidence of sexually transmitted disease, 9=evidence of sibling incest, 10=forced to perform oral sodomy, 11=forced to submit to oral sodomy, 12=evidence of parental incest, 13=exposing to child, 14=tried to entice into a car, 51=allegations of sexual abuse but uncertain) as these are all descriptions that fall under sexual abuse. Emotional abuse includes original descriptive codes 7-10 under the neglect variable (7=abandoned by mother and father, 8=mother or father does not want to keep child (temporarily or permanently), 9=other guardian does not want to keep child (temporarily or permanently), 10=verbal abuse (swearing or threats)) as these most specifically describe instances of emotional abuse.

Physical neglect is described in codes 2-4, 12, and 99 (2=physical neglect (i.e. not clean, not provided for with food, clothing, housing etc. unclean home and body), 3=physical neglect (i.e. adequate medical attention not provided, physical complaints such as pain, fatigue not attended to), 4=neglect related to skin disorders such as infections, 12=confinement, 99=not certain of incidence of neglect) as these most closely describe instances of physical neglect. Emotional neglect is specifically coded as 51 under the original neglect variable. This is its own variable with only one code as there are not multiple codes that descriptively match emotional neglect. Witness to intimate partner violence, violence within the household, and violent treatment of mother also only has one code from the original data that adequately describes the event, which is code 11 under other types of abuse and neglect.

Mental illness within the household is denoted in the original codes 6 and 7 (6=mother or legal guardian temporarily unable to care for child (in a mental hospital or mentally incapable) and 7=mother or legal guardian temporarily unable or unwilling to

provide for child (institutionalized, type unknown)) as these most closely describe the presence of mental illness within the household. Parental separation or divorce is within its own dichotomous variable and was not measured within the abuse or neglect variables. As stated previously, family disruption is a dichotomous variable coded as 0=none and 1=yes, indicating divorce, separation, or death of a family member. Finally, having a member of the household that is incarcerated is coded as 5 under the other abuse and neglect category.

Household substance abuse is identified within questionable moral environment (i.e. frequent pregnancies of unmarried mother, alcohol or drug use, and mother living with unmarried partner), which is coded as 9 under other abuse and neglect. As the information concerning household substance abuse is merged with two other descriptions that are not considered ACEs, this measurement of ACEs was thrown out. There is no discernable way to determine which children were in environments of alcohol or drug abuse compared to households where the biological mother was living with an unmarried partner or had frequent pregnancies as they were all coded the same.[2]

**Dependent Variables**

Juvenile arrest record and adult arrest record are dependent variables measured within this analysis. These are official records collected between 1986 and 1988 for all children under the age of 12 from 1967-1971 within the Midwestern area. In order to determine if ACEs influence children and adults by increasing their likelihood of criminal behavior, juvenile and adult arrest record are measured. These variables are measured

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[2] For a table including a list of all re-coded ACEs and descriptions, see Appendix A, Table V- ACE Codes and Descriptions Table.

through official arrest records and are the primary focus of the effects ACEs have on

children.

Number of offenses, including recurring similar offenses and completely different

offenses are recorded. Fifty-five different codes are used to specifically identify what

type of offense was committed and they are coded as follows: 7=theft, conversion,

shoplifting, and offenses against property act, 8=burglary and attempted burglary,

9=unlawful entering and breaking and entering, 10=robbery, 11=possession of stolen

property and intention to receive stolen property, 12=larceny, 13=arson, 14=fraud,

forgery, bad checks, and false ID, 15=embezzlement, 16=conspiracy and assisting a

criminal, 17=gambling, 18=criminal mischief, vandalism, trespassing, and recklessness,

19=disorderly conduct and breach of peace, 20=visiting a common nuisance and keeping

a common nuisance, 21=alcohol offenses, public intoxication, and violations of the 1935

Beverage ACT, 22=violation, controlled substance act, and drug offenses, 23=resisting

arrest, fleeing from a police officer, taunting a police officer, resisting law enforcement,

leaving the scene of a crime, refusing ID, and interfering, 24= intimidation,

25=possession of a firearm and violation of the firearms act, 26=assault, 27=assault and

battery, 28=battery with injury, 29=battery, 30=aggravated assault, 31=manslaughter,

reckless homicide, involuntary manslaughter, and vehicular manslaughter,

32=confinement, 33=kidnapping, 34=murder and attempted murder, 35=injury to morals,

36=prostitution, 37=incest, 38=child molestation, 39=ALB with intent to gratify, 40=rape

and sodomy, 41=peeping, 42=public indecency, 43=criminal deviant conduct, 44=other

sex crimes, 45=driving while intoxicated, 46=traffic violation, 47=violation of probation

or parole, 48=burglary with injury, 49=robbery with injury, 50=child abuse or neglect,

51=contempt, 52=bribery, 53=habitual offender, 54=vagrancy, 55=fugitive, 56=failure to appear, 57=escape, 58=contributing to the delinquency of a minor, 59=false crime report, 98=other offense, 99=unknown offense type and missing data.

These codes are used for juvenile and adult offenses. Although these codes are differentiated within the data as either juvenile or adult, there are also seven additional codes for juvenile-only offenses. These are coded as follows:0=delinquent child, 1=runaway, 2=beverage act or minor in possession, 3=truancy, 4=ungovernable or incorrigible, 5=curfew violation, and 6=injury to health. It is also important to note that there were no specific indications of age-related marker between juvenile and adult offending based on the codebook for this secondary dataset. Although it is assumed that crimes committed while the offender was under 18 are juvenile offenses and crimes committed while the offender was 18 or over are adult offenses, there is no specific identifying factors to confirm this. Without this information from the secondary data source, it is impossible to know exactly at what age a juvenile offense becomes an adult offense within this dataset. Based on the differentiation within the influences on both types of offending for this research, this is an important piece of the information to separate types of offending that is missing. This limitation will be further addressed in the discussion and limitations section.

For the purpose of this study, both juvenile and adult offenses needed to be recoded. For the t-tests, these are recoded into number of offenses committed. This is indicated by how many different types of crimes are committed as they are coded into separate variables per each instance to differentiate between each different type of crime committed. For example, one participant may have three separate instances coded by

description of offense within their case in the original data. This suggests there were three

different crimes committed at three different times. In the recoded data, this would

simply be coded as the number three for the variable, indicating three offenses committed

for one participant. The same method was used for both the adult offenses and the

juvenile offenses data.

For the purpose of the bivariate logistic regression, a dichotomous variable

indicating if an offense was committed or not was necessary. Instead of recoding the data

for both juvenile and adult offenses into the number of crimes that were committed, these

were simply recoded into at least one crime was committed or none at all. Juvenile crimes

and adult crimes were kept as two separate, dichotomous variables.

**Control Variables**

Matched comparison was used in the original data analysis in an effort to

determine the different outcomes of children solely based on the absence or presence of

adverse childhood experiences. The control group was matched to the experimental group

based on variables such as sex, race, date of birth, and family socioeconomic status in

order to ensure that the differences between each group is minimized to experiencing an

ACE or not experiencing an ACE. Previous research suggests that race and gender may

especially influence offending and recidivism, which makes it especially important to

control for these variables (Campbell, Papp, Barnes, Onifade, & Anderson, 2018).

For children who experienced an ACE prior to being enrolled in school, matches

were also determined based on county birth records, sex, race, date of birth, and hospital

where the child was born. Children who were enrolled in school, or at least of schooling

age were matched through sex, race, date of birth, and similar classes within the school

system. Date of birth matches were based on closeness within a few days, not necessarily exact same date of birth between the control and experimental groups. Characteristics such as date of birth, race, sex, and family socioeconomic status, are used to determine if frequency and type of arrest record are dependent upon prevalence and type of ACE. These controls are also be used to ensure the additional influences from extraneous variables are controlled in order to isolate the effect of adverse childhood experiences. The matched comparison has already been incorporated into the data during the original data collection and compilation.

The matched comparison groups are coded as 1=control group and 2=abuse or neglect group. Race/ethnicity is coded as 1=Black, 2=White, 3=Hispanic, and 4=race/ethnicity unknown. The original dataset does not differentiate between race and ethnicity, which is why Hispanic (ethnicity) is coded within the same variable as Black and White (race). This is a limitation within the data, which is more extensively considered in the results and discussion. Sex is a dichotomous variable, coded 1=female and 2=male. Match type is also coded to explain how the groups were matched. Matched by birth date=1 and matched by school or class=2. Matched comparison is utilized in order to limit the amount of characteristic differences between the group that has experienced ACEs and the group that has not experienced ACEs that are potentially influential towards the dependent variable (extraneous variables).

CHAPTER IV

ADDRESSING RESEARCH QUESTIONS
AND RESULTS

Each analysis is unique to address every research question that is asked within

this study. Comparisons of descriptive statistics, t-tests, and bivariate logistic regression

analyses are utilized to answer each research question. These three analyses are

conducted separately in order to answer all three research questions as they are

addressing different components of the data and provide different answers to each

inquiry.

**Adult Offending**

Q1     Are there meaningful differences in the occurrence of adult criminal
behavior between children who have experienced ACEs and those who
have not?

In asking this question, the occurrence or absence of an ACE is taken into

account with respect to the occurrence or absence of an adult offense. This type of

analysis allows for comparisons between the control and experimental groups based on

number of offenses. Independent samples t-tests are conducted to determine the mean

differences between these groups in respect to the number of offenses committed. As

these groups are already matched, comparing them based on the experience or absence of

an ACE provides isolated information on offending. These initial tests are used to

examine the differences between the means in adult offenses. It also introduces

informative data leading into the second and third analyses.

**Juvenile Offending**

Q2    Are there meaningful differences in the occurrence of juvenile delinquency between children who have experienced ACEs and those who have not?

In asking this question, it is important to differentiate between the control group that has not experienced ACEs and the experimental group that has experienced ACEs. Independent samples t-tests are conducted to determine the mean differences between these groups in respect to the number of offenses committed. This type of statistical analysis allows for the distinction between the group of children who have experienced at least one ACE and the control group who has not experienced an ACE. This distinction is accomplished through measuring the average number of offenses of both groups and comparing them. Determining the differences between these means also answers the second research question by examining the influence of ACEs on number of offenses. Answering this research question through examination of independent samples t-tests also provides additional information that can be used to provide informative data leading into the third research question.

**Differences Within Adverse Childhood Experiences**

Q3    Are certain types of ACEs, or combinations of ACEs, more influential than others on the likelihood of a child to commit offenses as an adult and a juvenile?

The third research question addresses if there are differences in the effect of ACEs based on whether or not an offense was committed as an adult or as a juvenile. This research question more specifically looks at the group that has experienced ACEs and the types of ACEs or combinations of ACEs they have experienced. Bivariate logistic regression models are utilized in determining if the impact between variables are

statistically significant within each of the overall models. This statistical analysis is designed to determine if the presence of certain ACEs increase the likelihood of an offense occurring, as well as determine if specific combinations of ACEs further increase the likelihood of an offense occurring. This research question addresses the purpose of this study by looking deeper into the phenomenon of poly-victimization as an influence on offending, both for juveniles and adults. As stated previously, poly-victimization is specifically addressing the occurrence of two or more different ACEs for the same child.

**Justification for Models**

Considering the already matched characteristics and control group incorporated into the original dataset, it is feasible to use a bivariate logistic regression analysis to answer the third research question. A regression model that controls for confounding variables is not necessary because of the matched nature of this dataset. There is no need to further control for confounding variables as the cases have already been matched across these variables within the dataset through the prospective cohorts research design with matched cohorts of abused or neglected and not abused or neglected children.

**Explanation of Models**

Each model in the bivariate logistic regression is specifically designed to test the influence of one ACE on a juvenile's likelihood of offending, and then an adult's likelihood of offending. For example, one model includes physical abuse and adult offending and another model includes physical abuse and juvenile offending. This is conducted for all nine independent variables for both dependent variables, totaling 18 models.

In addition to looking at the nine ACEs separately, there are also two additional independent variables to further the address the topic of poly-victimization. The first independent variable dichotomously measures if any ACE has occurred and the second dichotomously measures if any two different ACEs have occurred for the same child, indicating a case of poly-victimization. Both of these independent variables are also paired with the dependent variables adult offending and juvenile delinquency. This brings the total number of models for the bivariate logistic regression to 22.

## Results

### Descriptive Statistics

Fifty-seven percent of the sample had experienced at least one ACE at the time data were collected. Thirty-one percent had experienced two or more different ACEs, indicating cases of poly-victimization at the time data were collected. The most common ACE to occur for this sample was physical neglect, of which nearly 30% had this experience. Parental separation or divorce and emotional abuse were also fairly common. About one in five children, or 20% of the sample, had experienced either one of these ACEs. Cases of physical abuse occurred in about 10% of the sample. All other ACEs, which include sexual abuse, emotional neglect, mental illness for a member within the household, incarceration for a member within the household, and exposure to IPV or violent treatment of mother, occurred in less than 10% of the sample.

About 22% of the sample had at least one case of juvenile offending and 26% had at least one case of adult offending. A little more than half of the sample identified as female and a little under half identified as male. Race is distributed somewhat unevenly, although the specific area the data were collected from is unknown for comparison of

representation. About two-thirds of the participants are White and about one-third of the

participants are Black. There are also a few participants who identified as Hispanic,

although this is technically an ethnicity, not a race. There was also a small percentage of

the sample that had unknown race characteristics or that information was not available in

the records used within the data. Descriptive statistics are provided below for all

dichotomous variables and demographic characteristics.

Table 1

*Descriptive Table*

| Variable Name | Attributes | *f* | % | Attributes | *f* | % |
|---|---|---|---|---|---|---|
| Any Adverse Childhood Experience (ACE) | Yes | 908 | 57.7 | No | 667 | 42.3 |
| Any Adult Offense | Yes | 417 | 26.5 | No | 1158 | 73.5 |
| Any Juvenile Offense | Yes | 348 | 22.1 | No | 1227 | 77.9 |
| Two or More Different Types of ACEs (Poly-Victimization) | Yes | 490 | 31.1 | No | 1085 | 68.9 |
| Physical Abuse | Yes | 163 | 10.3 | No | 1412 | 89.7 |
| Emotional Abuse | Yes | 330 | 21.0 | No | 1245 | 79.0 |
| Sexual Abuse | Yes | 149 | 9.5 | No | 1426 | 90.5 |
| Emotional Neglect | Yes | 3 | 0.2 | No | 1572 | 99.8 |
| Physical Neglect | Yes | 454 | 28.8 | No | 1121 | 71.2 |
| Mental Illness for a MWHS | Yes | 70 | 4.4 | No | 1505 | 95.6 |
| Incarceration for a MWHS | Yes | 26 | 1.7 | No | 1549 | 98.3 |
| Parental Separation or Divorce | Yes | 348 | 22.1 | No | 1227 | 77.9 |
| Exposure to IPV or Violent Treatment of Mother | Yes | 19 | 1.2 | No | 1556 | 98.8 |

*Note.* Dichotomous Variable Codes-Yes=1, No=0.
Sex Variable Codes-Female=1, Male=2
Race Variable Codes-Black=1, White=2, Hispanic=3, Unknown=4.
MWHS-Abbreviation for Member Within Household

**Independent Samples T-Tests**

The first independent samples t-test was conducted to answer the following

research question and address these hypotheses:

Q1    Are there meaningful differences in the occurrence of adult criminal behavior between children who have experienced ACEs and those who have not?

H1    There are meaningful differences in the means in the occurrence of adult criminal behavior between the control and experimental groups.

H01[3]    There are no meaningful differences in the means between the control and experimental groups based on the occurrence of adult criminal behavior.

The p-value for this t-test is .02, which is below .05, indicating that the results are significant (see Table 2). The mean number of adult offenses committed for the group that has experienced an ACE is 6.81 and the mean number of adult offenses committed for the group that has not experienced ACEs is 5.01. The group that has experienced an ACE has committed adult offenses at a higher rate than the group that has not experienced an ACE. Based on the p-value for this t-test, the null hypothesis is rejected. As a result, there are meaningful differences in the mean number of adult offenses committed between the group that has experienced an ACE and the group that has not experienced any ACE. In the population, we should see that there is a significant difference in the mean number of adult offenses based on having a previous adverse childhood experience. Children who have experienced an ACE compared to children who have not may have a higher average number of adult offenses later in life.

The second independent samples t-test was conducted to answer the following research question and address these hypotheses:

Q2    Are there meaningful differences in the occurrence of juvenile delinquency between children who have experienced ACEs and those who have not?

H2    There are meaningful differences in the means in the occurrence of juvenile criminal behavior between the control and experimental groups.

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[3] Q-Research Question, H-Alternative Hypothesis, H0-Null Hypothesis

H02     There are no meaningful differences in the means between the control and
experimental groups based on the occurrence of adult criminal behavior.

The p-value for this t-test is .49, which is above .05, indicating that the results are

not significant. The mean number of juvenile offenses committed for the group that has

experienced an ACE is 2.67 and the mean number of juvenile offenses committed for the

group that has not experienced an ACE is 2.49. The group that has experienced an ACE

has committed juvenile offenses at a higher frequency than the group that has not

experienced an ACE. Based on the p-value for this t-test, the null hypothesis will not be

rejected. As a result, there are no meaningful differences in the mean number of juvenile

offenses committed between the group that has experienced an ACE and the group that

has not experienced any ACE. We should see the same similarities in the population.

Juveniles that experienced an ACE had a slightly higher number of average juvenile

offenses, but considering that this was not significant, this is not probable to see in the

population.

Table 2

*Independent Samples T-Test Summary Table*

| Independent Variable | Dependent Variable | Mean Difference | P-Value |
|---|---|---|---|
| Any Adverse Childhood Experience (ACE) | Number of Adult Offenses | 6.81-5.01=1.8 | .02* |
| Any Adverse Childhood Experience (ACE) | Number of Juvenile Offenses | 2.67-2.49=.18 | .49 |

*Note.* Range for Adult Offenses-91. Range for Juvenile Offenses-16.

The average number of offenses for juveniles and adults may be influenced by the

range, which is indicated in the footnote below. Adult offenses had an especially high

range, indicating that at least one offender had 92 different recorded offenses. At least one juvenile offender had 17 recorded offenses. Outliers, such as the unusually high number of offenses for at least one offender in both juveniles and adults, increase the overall average for offenses. The relationship between variable average and range is important to note, as it is influential to the overall results.

**Bivariate Logistic Regression**

Many different bivariate logistic regression models were constructed to answer the following research question and address these hypotheses:

Q3      Are certain types of ACEs, or combinations of ACEs, more influential than others on the likelihood of a child to commit offenses as an adult and a juvenile?

H3      There is a significant difference in the likelihood of adult or juvenile criminal behavior occurring based on the previous existence of a specific ACE or combinations of ACEs.

H03     There is not a significant difference in the likelihood of adult or juvenile criminal behavior occurring based on the previous existence of a specific ACE or combinations of ACEs.

In order to obtain the greatest details from the data, each of the nine dichotomously coded ACEs are separately included in its own model, along with a dichotomous offending variable for adults. These are nine different models. Considering separate information was gathered on juvenile offending, the same process was repeated with the nine dichotomously coded ACEs with juvenile offending. The dependent variable for these models is also dichotomous. These models are different from the adult offending models, but they also include all nine independent variables. Two additional variables that dichotomously indicate the overall occurrence or absence of an ACE or the overall occurrence or absence of poly-victimization have also been incorporated as

separate models. These are divided into models with adult offense occurring or juvenile

offense occurring, which adds four additional models to the study. The total number of

models included is 22.[4]

**Adverse childhood experiences and adult offenses.** Four models for this

outcome (adult offending) were statistically significant. The significant findings on ACEs

and their influence on adult offending are discussed in the subsequent paragraphs.

The model including any occurrence of an ACE (independent variable) and adult

offense (dependent variable) provides a broad view of the main topics this research aims

to address concerning adult offenses. The p-value for this model is .00, too small to be

reported through statistical software. The coefficient is .40 and the odds ratio value is

1.49. This is significant, and it suggests that there is an increase in the likelihood of adult

offending occurring if any ACE has already occurred. According to the odds ratio, the

likely odds of adult offending increase by 49% if any ACE has already occurred. Based

on the p-value for this regression, which is below .05, the null hypothesis will be rejected.

As a result, there is a significant difference in the likelihood of adult criminal behavior

occurring based on the previous existence of any ACE. On average, we would see a 49%

increase in the likely odds of adult offending occurring for people within the population

that had previously experienced any ACE compared to people that had not previously

experienced an ACE. Although this was already found based on previous t-tests, a

regression can tell us more specific information for the same variables, such as the

average percentage increase in likely odds of offending.

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[4] For a complete list of regression models and variables, see Appendix B, Table 6
Bivariate Logistic Regression Models Table.

The model including the occurrence of poly-victimization (independent variable), defined as any two or more ACEs occurring for the same child, and adult offense (dependent variable) provides a look at the most intriguing relationship concerning this study. The p-value for this model is .01, the coefficient is .33, and the odds ratio value is 1.39. This is significant, and it suggests that there is an increase in the likelihood of adult offending occurring if poly-victimization has already occurred. According to the odds ratio, the likely odds of adult offending increase by 39% if poly-victimization has already occurred. Based on the p-value for this regression, which is below .05, the null hypothesis will be rejected. As a result, there is a significant difference in the likelihood of adult criminal behavior occurring based on the previous existence of poly-victimization. In the population, we would likely see that there is a significant difference in the occurrence of adult offending based on having a previous adverse experience of poly-victimization. On average, we would see a 39% increase in the likely odds of adult offending occurring for people within the population that had previously experienced poly-victimization compared to people that had not experienced poly-victimization.

The model including physical neglect (independent variable) and adult offense (dependent variable) is one of the specific ACE models that is significant for this type of offense. The p-value is .05, the coefficient is .25, and the odds ratio is 1.28. This is significant and it suggests that there is an increase in the likelihood of adult offending occurring if physical neglect has already occurred. According to the odds ratio, the likely odds of adult offending increase by 28% if physical neglect has already occurred. Based on the p-value for this regression, which is below .05, the null hypothesis will be rejected. As a result, there is a significant difference in the likelihood of adult criminal behavior

occurring based on the previous existence of physical neglect. In the population, we would likely see that there is a significant difference in the occurrence of adult offending based on having a previous adverse experience of physical neglect. On average, we would see a 28% increase in the likely odds of adult offending occurring for people within the population that had previously experienced physical neglect compared to people that had not experienced physical neglect.

      The model including parental separation or divorce (independent variable) and adult offense (dependent variable) is the second ACE specific model that is significant for this type of offense. The p-value is .01, the coefficient is .34, and the odds ratio value is 1.41. This is significant, and it suggests that there is an increase in the likelihood of adult offending occurring if parental separation or divorce has already occurred. According to the odds ratio, the likely odds of adult offending increase by 41% if parental separation or divorce has already occurred. Based on the p-value for this regression, which is below .05, the null hypothesis will be rejected. As a result, there is a significant difference in the likelihood of adult criminal behavior occurring based on the previous existence of parental separation or divorce. In the population, we would likely see that there is a significant difference in the occurrence of adult offending based on having a previous adverse experience of parental separation or divorce. On average, we would see a 41% increase in the likely odds of adult offending occurring for people within the population that had previously experienced parental separation or divorce compared to people that had not experienced parental separation or divorce.

Table 3

*Bivariate Logistic Regression Adult Offense (DV)*

| Independent Variable | Change in Likelihood (B) | Odds Ratio (Exp (B)) | P-Value |
|---|---|---|---|
| Any Adverse Childhood Experience (ACE) | .40 | 1.49 | .00*** |
| Two or More Different Types of ACEs (Poly-Victimization | .33 | 1.39 | .01*** |
| Physical Abuse | .17 | 1.18 | .36 |
| Emotional Abuse | .24 | 1.27 | .08 |
| Sexual Abuse | -.30 | .74 | .15 |
| Emotional Neglect | 22.23 | ---- | .99 |
| Physical Neglect | .25 | 1.28 | .05* |
| Mental Illness for a MWHS | .18 | 1.20 | .49 |
| Incarceration for a MWHS | .56 | 1.75 | .17 |
| Parental Separation or Divorce | .34 | 1.41 | .01*** |
| Exposure to IPV or Violent Treatment of Mother | .49 | 1.63 | .31 |

*Note.* Exponentially Reported Odds Ratio For Emotional Neglect (Exp (B)) = 4.519E+9

The remaining seven models for adult offending are not significant, but still provide an abundance of information on the relationship between ACEs and adult offending. The non-significant findings on ACEs and their influence on adult offending are discussed in the subsequent paragraphs.

The model including physical abuse (independent variable) and adult offense (dependent variable) is not significant. The p-value is .36, the coefficient is .17, and the odds ratio value is 1.18. This suggests that there is an increase in the likelihood of adult offending occurring if physical abuse has already occurred, although it may not be significant in the population. According to the odds ratio, the odds of adult offending increase if physical abuse has already occurred. Based on the p-value for this regression, which is above .05, the null hypothesis will not be rejected. As a result, there is not a significant difference in the likelihood of adult criminal behavior occurring based on the

previous existence of physical abuse. In the population, we would likely see that there is not a significant difference in the occurrence of adult offending based on having a previous adverse experience of physical abuse.

The model including emotional abuse (independent variable) and adult offense (dependent variable) is not significant. The p-value is .08, the coefficient is .24, and the odds ratio value is 1.27. This suggests that there is an increase in the likelihood of adult offending occurring if emotional abuse has already occurred, although it may not be significant in the population. According to the odds ratio, the odds of adult offending increase if emotional abuse has already occurred. Based on the p-value for this regression, which is above .05, the null hypothesis will not be rejected. As a result, there is not a significant difference in the likelihood of adult criminal behavior occurring based on the previous existence of emotional abuse. In the population, we would likely see that there is not a significant difference in the occurrence of adult offending based on having a previous adverse experience of emotional abuse.

The model including sexual abuse (independent variable) and adult offense (dependent variable) is not significant. The p-value is .15, the coefficient is -.30, and the odds ratio value is .74. This suggests that there is a decrease in the likelihood of adult offending occurring if sexual abuse has already occurred, although it may not be significant in the population. According to the odds ratio, the odds of adult offending occurring decrease if sexual abuse has already occurred. This is not in the projected positive direction that was assumed, although it is still not significant. Based on the p-value for this regression, which is above .05, the null hypothesis will not be rejected. As a result, there is not a significant difference in the likelihood of adult criminal behavior

occurring based on the previous existence of sexual abuse. In the population, we would likely see that there is not a significant difference in the occurrence of adult offending based on having a previous adverse experience of sexual abuse.

The model including emotional neglect (independent variable) and adult offense (dependent variable) is not significant. The p-value is .99 and the coefficient is 22.231. These results are significantly skewed as the number of cases that are coded for emotional neglect is only three. The small number of participants within this model violates statistical assumptions. These are not significant results and any true interpretation should be cautioned against, as the values do not necessarily apply to the population considering the exceedingly small amount within the sample that actually had this ACE occur.

The model including mental illness for a member within the household (independent variable) and adult offense (dependent variable) is not significant. The p-value is .49, the coefficient is .18, and the odds ratio value is 1.20. This suggests that there is an increase in the likelihood of adult offending occurring if mental illness within the household has already occurred, although it may not be significant in the population. According to the odds ratio, the likely odds of adult offending increase for a child if a member within the household has a mental illness. Based on the p-value for this regression, which is above .05, the null hypothesis will not be rejected. As a result, there is not a significant difference in the likelihood of adult criminal behavior occurring based on the previous existence of mental illness within the household. In the population, we would likely see that there is not a significant difference in the occurrence of adult

offending based on having a previous adverse experience of mental illness within the household.

The model including incarceration of a member within the household (independent variable) and adult offense (dependent variable) is not significant. The p-value is .17, the coefficient is .56, and the odds ratio value is 1.75. This suggests that there is an increase in the likelihood of adult offending occurring if incarceration within the household has already occurred, although it may not be significant in the population. According to the odds ratio, the odds of adult offending increase if incarceration of a member within the household has already occurred. Based on the p-value for this regression, which is above .05, the null hypothesis will not be rejected. As a result, there is not a significant difference in the likelihood of adult criminal behavior occurring based on the incarceration of a member within the household. In the population, we would likely see that there is not a significant difference in the occurrence of adult offending based on having a previous adverse experience of incarcerated member within the household.

The model including exposure to violence or IPV (independent variable) and adult offense (dependent variable) is not significant. The p-value is .31, the coefficient is .49, and the odds ratio value is 1.63. This suggests that there is an increase in the likelihood of adult offending occurring if exposure to violence or IPV has already occurred, although it may not be significant in the population. According to the odds ratio, the odds of adult offending increase if exposure to violence or IPV has already occurred. Based on the p-value for this regression, which is above .05, the null hypothesis will not be rejected. As a result, there is not a significant difference in the likelihood of

adult criminal behavior occurring based on the previous existence of exposure to violence or IPV. In the population, we would likely see that there is not a significant difference in the occurrence of adult offending based on having a previous adverse experience of exposure to violence or IPV.

**Adverse childhood experiences and juvenile offenses.** Not many of the models for this outcome (juvenile offending) were significant, but there are five models that were statistically significant. The significant findings on ACEs and their influence on juvenile offending are discussed in the subsequent paragraphs.

The model including any occurrence of any ACE (independent variable) and juvenile offense (dependent variable) provides a broad view of the main topics this research aims to address concerning juvenile offenses. The p-value is .00, too small to be reported through statistical software, the coefficient is .55, and the odds ratio value is 1.74. This is significant, and it suggests that there is an increase in the likelihood of juvenile offending occurring if any ACE has already occurred. According to the odds ratio, the likely odds of juvenile offending increase by 74% if any ACE has already occurred. Based on the p-value for this regression, which is below .05, the null hypothesis will be rejected. As a result, there is a significant difference in the likelihood of juvenile criminal behavior occurring based on the previous existence of any ACE. In the population, we would likely see that there is a significant difference in the occurrence of juvenile offending based on having any previous adverse experience. On average, we would see a 74% increase in the likely odds of juvenile offending occurring for people within the population that had previously experienced any adverse childhood experience compared to people that had not experienced an ACE.

The model including the occurrence of poly-victimization (independent variable) and juvenile offense (dependent variable) provides a look at the most intriguing relationship in this study. The p-value is .00, too small to be reported through statistical software, the coefficient is .39, and the odds ratio value is 1.48. This is significant, and it suggests that there is an increase in the likelihood of juvenile offending occurring if poly-victimization has already occurred. According to the odds ratio, the likely odds of juvenile offending increase by 48% if poly-victimization has already occurred. Based on the p-value for this model, which is below .05, the null hypothesis will be rejected. As a result, there is a significant difference in the likelihood of juvenile criminal behavior occurring based on the previous existence of poly-victimization. In the population, we would likely see that there is a significant difference in the occurrence of juvenile offending based on having a previous adverse experience of poly-victimization. On average, we would see a 48% increase in the likely odds of juvenile offending occurring for people within the population that had previously experienced poly-victimization compared to people that had not experienced poly-victimization.

The model including the occurrence of emotional abuse (independent variable) and juvenile offense (dependent variable) is the first ACE specific model that is significant for this type of offense. The p-value is .01, the coefficient is .36, and the odds ratio value is 1.44. This is significant, and it suggests that there is an increase in the likelihood of juvenile offending occurring if emotional abuse has already occurred. According to the odds ratio, the likely odds of juvenile offending increase by 44% if emotional abuse has already occurred. Based on the p-value for this regression, which is below .05, the null hypothesis will be rejected. As a result, there is a significant

difference in the likelihood of juvenile criminal behavior occurring based on the previous existence of emotional abuse. In the population, we would likely see that there is a significant difference in the occurrence of juvenile offending based on having a previous adverse experience of emotional abuse. On average, we would see a 44% increase in the likely odds of juvenile offending occurring for people within the population that had previously experienced emotional abuse compared to people that had not experienced emotional abuse.

The model including the occurrence of physical neglect (independent variable) and juvenile offense (dependent variable) is the second ACE specific model that is significant for this type of offense. The p-value is .04, the coefficient is .27, and the odds ratio value is 1.32. This is significant, and it suggests that there is an increase in the likelihood of juvenile offending occurring if physical neglect has already occurred. According to the odds ratio, the likely odds of juvenile offending increase by 32% if physical neglect has already occurred. Based on the p-value for this regression, which is below .05, the null hypothesis will be rejected. As a result, there is a significant difference in the likelihood of juvenile criminal behavior occurring based on the previous existence of physical neglect. In the population, we would likely see that there is a significant difference in the occurrence of juvenile offending based on having a previous adverse experience of physical neglect.  On average, we would see a 32% increase in the likely odds of juvenile offending occurring for people within the population that had previously experienced physical neglect compared to people that had not experienced physical neglect.

The model including the occurrence of an incarcerated member of the household (independent variable) and juvenile offense (dependent variable) is the third ACE specific model that is significant for this type of offense. The p-value is .02, the coefficient is .97, and the odds ratio value is 2.64. This is significant, and it suggests that there is an increase in the likelihood of juvenile offending occurring if incarceration for a member within the household has already occurred. According to the odds ratio, the likely odds of juvenile offending increase by 64% if an incarcerated member of the household has already occurred. Based on the p-value for this regression, which is below .05, the null hypothesis will be rejected. As a result, there is a significant difference in the likelihood of juvenile criminal behavior occurring based on the previous existence of an incarcerated member within the household. In the population, we would likely see that there is a significant difference in the occurrence of adult offending based on having a previous adverse experience of incarcerated member within the household. On average, we would see a 64% increase in the likely odds of juvenile offending occurring for people within the population that had previously experienced an incarcerated member of the household compared to people that did not experience an incarcerated member of the household.

Table 4

*Bivariate Logistic Regression Juvenile Offense (DV)*

| Independent Variable | Change in Likelihood (B) | Odds Ratio (Exp (B)) | P-Value |
|---|---|---|---|
| Any Adverse Childhood Experience (ACE) | .55 | 1.74 | .00*** |
| Two or More Different Types of ACEs (Poly-Victimization) | .39 | 1.48 | .00*** |
| Physical Abuse | -.17 | .85 | .42 |
| Emotional Abuse | .36 | 1.44 | .01*** |
| Sexual Abuse | .00 | 1.00 | .99 |
| Emotional Neglect | 22.47 | ---- | .99 |
| Physical Neglect | .27 | 1.32 | .04* |
| Mental Illness for a MWHS | .21 | 1.23 | .46 |
| Incarceration for a MWHS | .97 | 2.64 | .02* |
| Parental Separation or Divorce | .23 | 1.26 | .10 |
| Exposure to IPV or Violent Treatment of Mother | .73 | 2.08 | .13 |

*Note.* Exponentially Reported Odds Ratio for Emotional Neglect (Exp (B)) = 5.745E+9.

The remaining six models are not significant, but still provide an abundance of information on the relationship between ACEs and juvenile offending. The non-significant findings on ACEs and their influence on juvenile offending are discussed in the subsequent paragraphs.

The model including physical abuse (independent variable) and juvenile offense (dependent variable) is not significant. The p-value is .42, the coefficient is -.17, and the odds ratio value is .85. This suggests that there is a decrease in the likelihood of juvenile offending occurring if physical abuse has already occurred, although it may not be significant in the population. According to the odds ratio, the likely odds of juvenile offending occurring decrease if physical abuse has already occurred. This is not in the

projected positive direction that was assumed, although it is still not significant. Based on the p-value for this regression, which is above .05, the null hypothesis will not be rejected. As a result, there is not a significant difference in the likelihood of juvenile criminal behavior occurring based on the previous existence of physical abuse. In the population, we would likely see that there is not a significant difference in the occurrence of juvenile offending based on having a previous adverse experience of physical abuse.

The model including sexual abuse (independent variable) and juvenile offense (dependent variable) is not significant. The p-value is .99, the coefficient is .00, and the odds ratio value is 1.00. This suggests that there is an increase in the likelihood of juvenile offending occurring if sexual abuse has already occurred, although it may not be significant in the population. According to the odds ratio, the odds of juvenile offending do not change if sexual abuse has already occurred. Based on the p-value for this regression, which is above .05, the null hypothesis will not be rejected. As a result, there is not a significant difference in the likelihood of juvenile criminal behavior occurring based on the previous existence of sexual abuse. In the population, we would likely see that there is not a significant difference in the occurrence of juvenile offending based on having a previous adverse experience of sexual abuse.

The model including emotional neglect (independent variable) and juvenile offense (dependent variable) is not significant. The p-value is .99 and the coefficient is 22.472. These results are significantly skewed as the number of cases that are coded for emotional neglect is only three. The small number of participants within this model violates statistical assumptions. These are not significant results and any true interpretation should be cautioned against, as the values do not necessarily apply to the

population considering the exceedingly small amount within the sample that actually had this ACE occur.

The model including the occurrence of mental illness within the household (independent variable) and juvenile offense (dependent variable) is not significant. The p-value is .46, the coefficient is .21, and the odds ratio value is 1.23. This suggests that there is an increase in the likelihood of juvenile offending occurring if mental illness within the household has already occurred, although it may not be significant in the population. According to the odds ratio, the likely odds of juvenile offending increase if mental illness within the household has already occurred. Based on the p-value for this regression, which is above .05, the null hypothesis will not be rejected. As a result, there is not a significant difference in the likelihood of juvenile criminal behavior occurring based on the previous existence of mental illness within the household. In the population, we would likely see that there is not a significant difference in the occurrence of juvenile offending based on having a previous adverse experience of mental illness within the household.

The model including the occurrence of separation or divorce (independent variable) and juvenile offense (dependent variable) is not significant. The p-value is .10, the coefficient is .23, and the odds ratio value is 1.26. This suggests that there is an increase in the likelihood of juvenile offending occurring if parental separation or divorce has already occurred, although it may not be significant in the population. According to the odds ratio, the likely odds of juvenile offending increase if separation or divorce has already occurred. Based on the p-value for this regression, which is above .05, the null hypothesis will not be rejected. As a result, there is not a significant difference in the

likelihood of juvenile criminal behavior occurring based on the previous existence of separation or divorce. In the population, we would likely see that there is not a significant difference in the occurrence of juvenile offending based on having a previous adverse experience of separation or divorce.

The model including exposure to violence or IPV (independent variable) and juvenile offense (dependent variable) is not significant. The p-value is .13, the coefficient is .73, and the odds ratio value is 2.08. This suggests that there is an increase in the likelihood of juvenile offending occurring if exposure to violence or IPV has already occurred, although it may not be significant in the population. According to the odds ratio, the likely odds of juvenile offending increase if exposure to violence or IPV has already occurred. Based on the p-value for this regression, which is above .05, the null hypothesis will be not be rejected. As a result, there is not a significant difference in the likelihood of juvenile criminal behavior occurring based on the previous existence of exposure to violence or IPV. In the population, we would likely see that there is not a significant difference in the occurrence of juvenile offending based on having a previous adverse experience of exposure to violence or IPV.

**Differences Between Statistical**
**Tests and Models**

The major difference between the regression models and the previous t-tests that examines similar variables is that the regression models focuses on any offense, juvenile or adult, occurring within the dichotomous variable. The t-test focused specifically on the mean difference in number of offenses, juvenile or adult, committed. This explains why the results for the t-tests and the regression models varied even though they have explained information for the same data. This is also important to note when discussing

the major results because although the variables from the t-tests and the regression

models are similar, they are not the same. The minute differences in the variables explain

how their respective explanations of the examined relationships are different. These

differences in results also explain how the independent variables in both the t-tests and

regression models influence the dependent variables differently.

CHAPTER V

DISCUSSION OF FINDINGS
AND CONCLUSIONS

**Discussion**

In concurrence with previous literature, this study found that there is a
relationship between adverse childhood experiences and offending. Experiencing any
ACE or poly-victimization increase the likelihood of both juvenile and adult offending.
Some ACEs influence juvenile offending, but not adult offending and vice versa. There
are also some that ACEs do not influence either juvenile or adult offending. There are
differences between juvenile and adult offending in respect to which ACEs are influential
for each. The following section will offer in depth explanations of the results and
discussion of its relation to previous literature, theory, and findings.

**Adult Offending**

The t-test measuring the difference in the means between occurrence of an ACE
and the absence of an ACE based on the number of adult offenses showed that the
occurrence of an ACE resulted in higher averages for the total number of adult offenses
by nearly two offenses. These findings are not only consistent in literature, they are also
consistent with the theoretical foundations outlined in developmental theory used to
explain adult offending. There are some additional inferences to be made based on the
specific variables used in this study, but initial results on the influence of ACEs on
offending are supported by previous literature.

Specifically for adult offending, four of the 11 tested models for the logistic regression were significant. Physical neglect, parental separation or divorce, overall experience of any ACE, and poly-victimization were all independent variables that significantly influence the likelihood of an adult offense occurring. For each of these separate models, a previous victimization indicates that the likelihood of an adult offense occurring significantly increases. For adult offenses, each of the significant ACEs increased the likelihood of an offense occurring between 28 and 49%. Interestingly, the overall experience of any ACE has the highest increase in likely odds for adult offense to occur, which is 49%. For adult offenses, physical neglect had the lowest significant increase in influencing likely odds of occurrence, which is 28%. Both poly-victimization and parental separation or divorce increased the likely odds of an adult offense occurring by about 40%.

Poly-victimization, physical neglect, and parental separation or divorce are all ACEs that are difficult to find in research. Physical abuse, sexual abuse, and overall experience of ACEs are abundant in the literature on influences in adult offending, but these three variables need additional research. Based on results from this study, poly-victimization, physical neglect, and parental separation or divorce all significantly influence the likely odds of an adult offense occurring.

Poly-victimization is slowly becoming more integrated as a risk factor for offending in current research. Although it is difficult to find in previous research, there are some recent studies that suggest poly-victimization increased the risk of offending (Farrell & Zimmerman, 2017). Most studies focus on health, trauma, and well-being, not necessarily on offending, which makes it much more difficult to find previous research

on these specific topics. As poly-victimization continues to become a more regularly studied topic in criminal justice, it is important to recognize that the initial studies conducted on its relationship to offending show promising results for poly-victimization as a significant risk factor. This is also supported through the theoretical foundations of developmental theories, as stated previously, and the strong influence of cumulative continuity on both adult and juvenile offending.

There were seven models for adult offending that were not significant. These models include independent variables physical abuse, emotional abuse, sexual abuse, emotional neglect, mental illness within the household, incarceration within the household, and exposure to IPV or violent treatment of mother. Although they were not significant, this is still good information to discuss. Many of these are also difficult to find in previous literature and not much is known about their influence on offending. Aside from sexual abuse, all other models for adult offenses showed increases in the likelihood of an offense occurring based on the prior occurrence of any ACE, poly-victimization, or the one of the other eight specific ACEs that were measured. Six of the specific ACEs were not significant in the sample, but still in the projected direction. This should prompt future researchers to pay more attention to these and their relationships to offending as there are still many under-researched ACEs that we do not know enough information about.

For the specific ACEs that influence adult offending, it is important to address and at least speculate why physical neglect and parental separation or divorce significantly influence the likelihood of adult offending, but the other specific ACEs do not. Physical abuse, emotional abuse, sexual abuse, emotional neglect, mental illness for

a member within the household, incarceration for a member within the household, and exposure to IPV or violent treatment of mother did not significantly influence the likelihood of adult offending. Based on developmental theory and suggestions from previous research, life course persistent offenders may have weakened ties to emotional support and disadvantaged environments (Moffitt, 1993). Parental separation or divorce may be directly related to the disadvantaged environment and broken family aspect that can influence offenders later in life, not just during adolescence.

Physical neglect can have long-term impacts on children, which may explain why it impacts both adult and juvenile offending. Unlike parental separation or divorce, physical neglect seems to increase offending throughout life, not just during adulthood. This is an interesting aspect of the findings from this research, which are further discussed in the comparisons of influences for juvenile and adult offending as this ACE influences both types.

Physical abuse and sexual abuse are the only two that have a significant amount of previous research on their relationship to offending. Interestingly for this sample, neither of these were significant, and one was in the opposite projected direction. Sexual abuse was the only independent variable for all of the models concerning adult offenses to have an inverse relationship, although it was not significant. Contrary to the projected positive direction, it seems that the occurrence of sexual abuse actually reduced the likely odds of an adult offense to occur. This finding is rather different compared to previous research and findings concerning sexual abuse. As this is a highly researched topic, especially related to offending, it is interesting and uncommon to find a sample that suggests the opposite influence of an ACE on offending, although it is not impossible.

Again, this was not significant, but it is interesting to note because this is not the usual finding, especially for this specific independent variable.

The measurement of emotional neglect in this model may be problematic, as suggested by the results and descriptive statistics. These data are secondary and the original coding and collection of records is what was available. Based on the original coding, emotional neglect was identified specifically as one code, not a group of codes or descriptions as the other independent variables were. This limited the amount of applicable cases when re-coding was conducted and the final number of cases where emotional neglect actually occurred was extremely small compared to the other ACEs. It may have been so small that the results are skewed for this model. The small number of participants within this model violates statistical assumptions. Although the results in this study are not significant for emotional neglect, it is highly advisable that future research on emotional neglect incorporates data that includes a representative number of cases for the sample for more accurate results. There is much more information that should be known on the relationship between emotional neglect and offending.

Future research concerning the influence of specific ACEs on adult offending should especially focus on the lesser known adverse experiences, such as mental illness for a member within the household, incarceration for a member within the household, parental separation or divorce, exposure to IPV or violent treatment of mother, and poly-victimization. That is not to suggest that physical abuse, emotional abuse, sexual abuse, emotional neglect, and physical neglect should be ignored; however, these lesser known ACEs are typically rare in this type of research and there is a definite gap to be filled for future studies.

**Juvenile Offending**

In addition to these results, the t-test measuring the average difference in the number of juvenile offenses committed based on overall occurrence or absence of an ACE showed that the occurrence of an ACE did not influence a change in the total number of juvenile offenses. These findings are not necessarily consistent with previous literature, but this may actually be due to the coding of the dependent variable (juvenile offending). The t-test specifically identifies the number of offenses, not the occurrence of an offense. Although the overall occurrence of any ACE may not influence a change in the average number of juvenile offenses, it does increase the likelihood for a juvenile offense to occur based on the bivariate logistic regression model.

Specifically for juvenile offending, five of the 11 tested models were significant. Physical neglect, emotional abuse, incarcerated member within the household, overall experience of any ACE, and poly-victimization were all independent variables that significantly influence the likelihood of a juvenile offense occurring. Each of these separate models indicated that the likelihood of a juvenile offense occurring significantly increased by 32-74% if one of the previous victimizations had occurred. Interestingly, the overall experience of any ACE has the highest increase in likely odds for juvenile offense to occur, which is 74%. For juvenile offenses, physical neglect had the lowest significant increase in influencing likely odds of occurrence, which is 32%. Both poly-victimization and emotional abuse increased the likely odds of a juvenile offense occurring by about 45%. Incarceration for a member within the household increased the likely odds of a juvenile offense occurring by about 64%.

Poly-victimization, physical neglect, incarcerated member of the household, and emotional abuse are all specific variables that are more difficult to find in previous research. Physical abuse, sexual abuse, and overall experience of ACEs are abundant in the literature on influences in juvenile offending, but these four variables need additional research (Baglivio, et al., 2014). Based on results from this study, poly-victimization, physical neglect, emotional abuse, and incarcerated member of the household all significantly influence the likely odds of an adult offense occurring.

The influence of poly-victimization is further supported through the aspect of cumulative continuity in developmental theory (Moffitt, 1993). The more ACEs that a child experiences, the more likely they are to commit both juvenile and adult offenses. This is shown directly in the models on the influence of poly-victimization. In addition to this independent variable, physical neglect is also supported as an influence on offending through previous literature and developmental theory. Not only are these influences immediate during childhood, they also last long-term into adulthood and influence offending throughout life.

Emotional abuse and incarceration for a member within the household were also significant for influencing juvenile offending, but not for adult offending. These ACEs are directly related to the familial structure and relationships built during childhood. As supported in developmental theory (Moffitt, 1993) and through previous literature (Reed & Reed, 1997), fragmented relationships, broken parental or guardian bonds, and unsupported familial relationships through absence of a parent who is incarcerated are all precursory risks for juvenile offending.

The six other models for juvenile offending, which include independent variables physical abuse, sexual abuse, emotional neglect, mental illness within the household, parental separation or divorce, and exposure to IPV or violent treatment of mother, were not significant. These models still provide information on the relationships between ACEs and offending so even though they are not statistically significant, this is still good information to discuss. Many of these are also difficult to find in previous literature and not much is known about their influence on offending. Physical abuse and sexual abuse are the only two that have a significant amount of previous research and their relationship to offending, although most of it is focused on adult offending. It is rarer to find research concerning juvenile offending concerning influences because the time period of study is shorter and there are many other variables that influence juveniles to offend compared to adults.

Physical abuse was the only independent variable for all of the models concerning juvenile offenses to have an inverse relationship, although it was not significant. Contrary to the projected positive direction, it seems that the occurrence of physical abuse actually reduced the likely odds of a juvenile offense to occur. This finding is rather different compared to previous research and findings concerning physical abuse. As this is a highly researched topic, especially related to offending, it is interesting and uncommon to find a sample that suggests the opposite influence of an ACE on offending, although it is not impossible. This may be unique to this sample, and as the results were not significant, it is not necessarily applicable to the population, but it is still something to investigate further. Again, this was not significant, but it is interesting to note because this is not the usual finding, especially for this specific variable.

The measurement of emotional neglect in this model may be problematic, as suggested by the results and descriptive statistics. The same problem occurred for measuring this variable with juvenile offenses as it did for adult offenses. These data are secondary and the original coding and collection of records is what was available. Based on the original coding, emotional neglect was identified specifically as one code, not a group of codes or descriptions as the other independent variables were. This significantly limited the amount of applicable cases when re-coding was conducted and the final number of cases where emotional neglect actually occurred was too small. There is a chance that the results are skewed for the models using this variable specifically. The sample size was so small for this independent variable, statistical criteria was violated and reliable estimates could not be produced. As a result, it is recommended that caution be used in interpretation of results for these two models.

Although the results in this study are not significant for emotional neglect, it is highly advisable that future research on emotional neglect incorporates data that includes a representative number of cases for the sample for more accurate results. There is much more information that should be known on the relationship between emotional neglect and offending, for both juveniles and adults. Larger sample sizes, especially for children with a history of emotional neglect, would ensure that future research does not have the same problem that was experienced in this study.

Future research concerning the influence of specific ACEs on juvenile offending should especially focus on the lesser known adverse experiences, such as mental illness for a member within the household, incarceration for a member within the household, parental separation or divorce, exposure to IPV or violent treatment of mother, and poly-

victimization. That is not to suggest that physical abuse, emotional abuse, sexual abuse, emotional neglect, and physical neglect should be ignored; however, these lesser known ACEs are typically rare in this type of research and there is a definite gap to be filled for future studies.

**Differences Between Adult and**
**Juvenile Influences**

Both adult- and juvenile-based models had one independent variable in the opposite projected direction. Although these variables were not the same, (physical abuse for juvenile offending and sexual abuse for adult offending) it is interesting to note that these two independent variables are the most studied in respect to their influence on offending as an adverse experience. In the case of this sample, they were both found to decrease the likely odds of offending occurring based on their respective models instead of increase the likely odds of offending. This is the opposite of what is typically seen in research and prompts a deeper investigation of these highly researched ACEs independently of other ACEs. Although these were not significant in either model, it contradicts projections of previous research. This is something that should be looked into further with respect to physical abuse and sexual abuse as influences on offending.

Parental separation or divorce significantly influences the likelihood of an adult offense occurring, but not juvenile offenses. This may be something unique to adults as an influence, even though we typically think of separation or divorce impacting a child. Based on findings from this study, parental separation or divorce increases the likelihood of both juvenile and adult offenses. This ACE has significant long-term impacts on offending, but non-significant short-term impacts on offending. This is also something important to note for future research within ACEs because although it may not

significantly influence one type of offending, it can influence another. There is a definitive need to address how parental separation or divorce influences adults. As this study highlights, there are differences in impact based on when the offending behavior occurs (juvenile or adult).

The data used in this analysis is old enough that social and cultural changes have occurred between the original data collection and the use of the data for this analysis. Changes specifically related to family dynamics and the influence of a "nuclear family" may account for discrepancies between significant models from data in the 1960s and 1970s and data that has been collected in the 21$^{st}$ century. For example, parental separation or divorce significantly increased the likelihood for adult offending based on information within this dataset; however, more recent data suggests this may not be the case.

The influence of the dynamics of a family have drastically changed in the last 60 years. Divorce is a common occurrence in today's society, but it was relatively rare during the 1960s. The idea of a nuclear family has also changed in the last 60 years. One parent households are much more common now than they were back then. It is also more socially acceptable now to have non-traditional families. This can change the impact on children based on absence of a parent or stable family because the social acceptance of divorce and the family dynamic changes after divorce have drastically changed. This further solidifies the need to research the influence of parental separation or divorce in today's society in order to determine if this ACE is still as influential as it was in the 1960s on families and children.

Incarcerated member within the household was also a variable that is found to significantly influence the likelihood of one type of offending occurring, but not the other. This variable was significant for increasing the likelihood of juvenile offending occurring, but not necessarily adult offending. Incarcerated member within the household is a unique variable that has been recently increasing in its inclusion of research, although there is still much to be explored as to its influence and why it may increase the likelihood of juvenile offending, but not adult offending. Juveniles with incarcerated parents are considered among the most at-risk for increased likelihood of offending (Reed & Reed, 1997). This prompts a strong need for policies that offer protection against negative exposure at a young age to the criminal justice system and generational incarceration within families.

Physical neglect was significant for increasing the likelihood of both juvenile and adult offending. This is the only independent variable that was significant in both models as an independent ACE. Both any occurrence of an ACE and poly-victimization were also significant in increasing the likelihood of juvenile and adult offending as well, although these combine ACEs and are not coded as one independent ACE like physical neglect. This is also extremely important and should be considered further in future research as this is one of the main five ACEs that does not get much attention in current research related to offending. These results also further suggest that the impact of poly-victimization needs further exploration and is influential with respect to both adult and juvenile offending.

**Conclusion**

Adverse childhood experiences are influential in respect to offending for both juveniles and adults. Some combinations and specific types of ACEs are significantly influential, while others are not. Physical neglect is the only specific ACE that significantly influences both juvenile and adult offending. Both poly-victimization and any occurrence of an ACE also significantly influence juvenile and adult offending. ACEs related specifically to influencing adult offending seem to be related to familial connections and cumulative continuity, not necessarily specific types of abuse. ACEs related specifically to influencing juvenile offending seem to be related to emotional bonds and connections to family, as well as cumulative continuity.

Based on previous theoretical support and research, trauma that is experienced during the crucial time of development during childhood is negatively influential. This study adds to these previous findings by not only continuing to support the negative influences of trauma and importance of family, but also addressing specific differences in types of trauma and how they differ in influencing children's behavior. There is a need to be able to identify children that have experienced trauma, especially for children that experience more than one type of ACE, in order to add skills or factors that will protect them against offending or other types of deviant behavior. Children that have experienced ACEs have additional risk factors to become involved in the juvenile and criminal justice systems. There should be preventative steps taken and programming implemented in order to ensure that these children have additional protective factors to balance the risk factors they have been predisposed to.

**Limitations**

There are a few specific limitations to the dataset used during this research. The three main limitations related to the original data are age-related markers between offending types, the age of the actual data collected, and the coding used to identify race and ethnicity. There is also one limitation that was not part of the original data and became apparent based on re-coding conducted during analyses. This limitation is the extremely small sample size for two of the models, both of them specifically for emotional neglect.

It is important to note that there were no specific indications of an age-related marker between juvenile and adult offending based on the codebook for this secondary dataset. Although it is assumed that crimes committed while the offender was under 18 are juvenile offenses and crimes committed while the offender was 18 or over are adult offenses, there is no specific identifying factors to confirm this. Without this information from the secondary data source or initial collection of data, it is impossible to know exactly at what age a juvenile offense becomes an adult offense within this dataset. Based on the differentiation within the influences on both types of offending for this research, this is an important piece of the information to separate types of offending that is missing.

The comparison groups are matched on multiple variables, including race/ethnicity. The original dataset does not differentiate between race and ethnicity, which is why Hispanic (ethnicity) is coded within the same variable as Black and White (race). This is a limitation within the original data collection. Current research has a much wider range of options considering identifying race and ethnicity and does not group

them together. This limitation is somewhat based on the age of the data and common practices in recording this information at the time.

This dataset is old and outdated compared to most of the data that is used for research today. As discussed previously, the positive reasons for utilizing this specific dataset for the rich data on ACEs and differences in offending are well worth using the older dataset. Records are dated during the late 1960's for this data and collection was conducted in the 1970s, which makes the data approximately 55 years old. There may be some issues with this, but overall, this is not considered a major problem that influences the results of the data. This also draws attention to the desperate need for new research on these topics, specifically updated and current data collection with in depth information on different types of trauma and offending.

The final limitation for this research concerns the recoding of the original data. The measurement of emotional neglect in this model may be problematic, as suggested by the results and descriptive statistics. Based on the original coding, emotional neglect was identified specifically as one code, not a group of codes or descriptions as the other independent variables were. This limited the amount of applicable cases when re-coding was conducted and the final number of cases where emotional neglect actually occurred was extremely small compared to the other ACEs. The group of participants that had these very specific codes may have been so small that the results are skewed for both models with this independent variable. Considering that the small sample size for emotional neglect violates statistical criteria, reliable estimates cannot be produced from these models.

**Policy Implications**

The policy implications for this research span from addressing signs of victimization to increasing protective factors for children with ACEs. There are multiple ways to create or modify policy to better understand and help both children and adults who have been impacted by adverse childhood experiences. For example, more prevention methods, increased awareness, and alternative techniques for addressing trauma are a few ways that policy can influence the understanding of impact for ACEs. Based on results from this research, it is important to identify victims and help provide ways to decrease their likelihood of offending. Children that have experienced ACEs are at an increased likelihood of offending, especially for those that have experienced poly-victimization.

In order to decrease the likelihood for offending, children with ACEs must first be identified. As these types of experiences are extremely under-reported, this is an important step in addressing influences on offending and ensuring that reports are officially filed and identified. One way to increase reporting of adverse childhood experiences is to train teachers, members of the community, and child-care workers how to identify different types of trauma. Although training may already be provided in some areas for identifying cases of childhood trauma, it is not provided everywhere for all types of ACEs. Increasing the training and ability of adults around children to accurately report and identify different types of trauma is one specific way that children can get access to the additional protective factors they may need. It is impossible to give resources to a child in need if their case of victimization has never been identified or reported.

Contacting authorities and official reporting methods are often not used in childhood cases because families prefer to deal with trauma and victimization informally (U.S. Department of Justice, 2012). This decreases the amount of reports and data on child victimization, as well as the amount of help or additional protective factors these children may need. Considering that schools have a greater knowledge of victimization than police and medical authorities, it may be feasible to continue training within schools especially since children spend most of their time in these facilities. In addition to this, the programs and assessments done on child victims should also encompass a component on poly-victimization considering that many children are not recognized as being victims of multiple types of trauma (U.S. Department of Justice, 2014).

Once victims have been accurately identified, the next step in policy is to provide victims with additional help. Considering these victims have an increased likelihood to offend, it is important to ensure that they have additional protective factors to balance the risk factors. Providing programs, support, counseling, therapy, and behavioral interventions for child victims may offer additional protection against behaviors that lead to juvenile or adult offending.

Considering that the ACEs specifically related to both types of offending are related to cumulative continuity (poly-victimization), familial relationships, and emotional bonds, it is especially important to have policy in place to address multiple types of trauma and difficulties with bonding or relationships (U.S. Department of Justice, 2014). Many types of interventions for children only focus on one type of adverse experience. There are multiple reasons why this happens, including unknown secondary victimizations, inability to provide financial support or insurance for different types of

interventions, and programs that are not designed to provide support for multiple types of ACEs. Programs are often specific to address one problem so that they can focus specifically on one intervention, not multiple. This is problematic for victims who have multiple types of trauma that need to be addressed.

As an example, this is a brief description for how to determine the right intervention designed to serve children who are poly-victims: Programs designed to identify children who have had multiple ACEs may be implemented through the use of screening questionnaires. Multiple types of services are often required to help these victims, and understanding their documented history as a victim, as well as their unreported or undocumented history as a victim is extremely important. These types of screening questionnaires could include topics addressing any type of victimization, trauma, or experience that has gone unreported that has yet to be incorporated into an intervention method. Questions could even include information on substance use, mental illness, or incarceration within the household. This will help to implement the program through defining what types of services, especially specific combinations of services, that would best benefit a poly-victim.

**Recommendations**

Based on extensive review of literature, data, and results from the current analyses, adverse childhood experiences are vastly under researched and current policy does not adequately address ways to protect children with ACEs from risk of offending. Current policy also does not accurately identify children with ACEs, especially concerning cases of poly-victimization. It is necessary for these problems to be fixed in the near future in order to reduce offending for both juvenile and adults, as well as

increase the wealth of knowledge in current research to inform future policy on children with ACEs.

Increasing research on poly-victimization will help provide information on how to change or alter programs that do not help children with multiple types of victimization. Program evaluations should be conducted to see how interventions are conducted for children with multiple ACEs. Overall, both research and programming are extremely important to reduce offending for juveniles and adults with adverse childhood experiences. Interventions related to addressing poly-victimization, increasing emotional relationships, and promoting positive familial bonds may be the most helpful to children with ACEs that have a higher amount of risk factors for offending.

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**APPENDIX A**

**ACE CODES AND DESCRIPTIONS TABLE**

Table 5

*ACE Codes and Descriptions Table*

| ACE Type | Description | Codes Included |
|---|---|---|
| Physical Abuse | Mention of physical abuse but no mention of injuries, bruises or welts, sprains or dislocations, malnutrition, freezing, burns or scalding, abrasions or lacerations, wounds, cuts, or punctures, internal injuries, bone fractures, skull fractures, teeth knocked out, failure to thrive, tied up, other physical abuse, possible physical injuries (old scars, etc.) | Recoded 0=No did not occur (includes original dataset codes 0 and 1), 1=Yes occurred (includes original dataset codes 2-99 under "physical abuse") |
| Emotional Abuse | Abandoned by mother and father, mother or father does not want to keep child, other guardian does not want to keep child, verbal abuse | Recoded 0=No did not occur (includes original dataset codes 0 and 1), 1=Yes occurred (includes original dataset codes 7-10 under "neglect") |
| Sexual Abuse | Fondling or touching in obscene manner, sexual abuse but specifics not provided, vaginal penetration with penis, vaginal penetration with something other than penis, sodomy or anal penetration, forced to perform sexual acts, evidence of sexually transmitted disease, evidence of sibling incest, forced to perform oral sodomy, forced to submit to oral sodomy, evidence of parental incest, exposing to child, tried to entice into a car, allegations of sexual abuse | Recoded 0=No did not occur includes original dataset codes 0 and 1), 1=Yes occurred (includes original dataset codes 2-51 under "sexual abuse") |
| Emotional Neglect | Emotional neglect is specifically identified in the neglect variable | Recoded 0=No did not occur, 1=Yes occurred (includes original dataset code 51 only under "neglect") |

Table 5 Continued

| ACE Type | Description | Codes Included |
|----------|-------------|----------------|
| Mental Illness MWHS | Mother or legal guardian temporarily unable to care for child (in a mental hospital or mentally incapable) and mother or legal guardian temporarily unable or unwilling to provide for child (institutionalized, type unknown) | Recoded 0=No did not occur, 1=Yes occurred (includes original dataset codes 6 and 7 under "other, non-abuse/neglect") |
| Incarcerated MWHS | Member of the household that is incarcerated, guardian unable to provide for child because they are in prison/jail | Recoded 0=No did not occur, 1=Yes occurred (includes original dataset code 5 under "other, non-abuse/neglect") |
| Parent Separation or Divorce | Parental separation or divorce, or death of a family member—family disruption | Family disruption is a dichotomous variable coded as 0=none and 1=yes. Not measured within abuse/neglect categories. Original codes kept the same. |
| Exposure to IPV, Violence within Household, Violent Treatment of Mother | Witness to intimate partner violence, violence within the household, and violent treatment of mother—violence within the home not directed at the child | Recoded 0=No did not occur, 1=Yes occurred (includes original dataset code 11 under "other, non-abuse/neglect") |

**APPENDIX B**

**BIVARIATE LOGISTIC REGRESSION MODELS TABLE**

Table 6

*Bivariate Logistic Regression Models Table*

| Independent Variable | Dependent Variable |
|---|---|
| Any Adverse Childhood Experience (ACE) | Any Adult Offense |
| Two or More Different Types of ACEs (Poly-Victimization | Any Adult Offense |
| Physical Neglect | Any Adult Offense |
| Parental Separation or Divorce | Any Adult Offense |
| Physical Abuse | Any Adult Offense |
| Emotional Abuse | Any Adult Offense |
| Sexual Abuse | Any Adult Offense |
| Emotional Neglect | Any Adult Offense |
| Mental Illness for a MWHS | Any Adult Offense |
| Incarceration for a MWHS | Any Adult Offense |
| Exposure to IPV or Violent Treatment of Mother | Any Adult Offense |
| Any Adverse Childhood Experience (ACE) | Any Juvenile Offense |
| Two or More Different Types of ACEs (Poly-Victimization) | Any Juvenile Offense |
| Emotional Abuse | Any Juvenile Offense |
| Physical Neglect | Any Juvenile Offense |
| Incarceration for a MWHS | Any Juvenile Offense |
| Physical Abuse | Any Juvenile Offense |
| Sexual Abuse | Any Juvenile Offense |
| Emotional Neglect | Any Juvenile Offense |
| Mental Illness for a MWHS | Any Juvenile Offense |
| Parental Separation or Divorce | Any Juvenile Offense |
| Exposure to IPV or Violent Treatment of Mother | Any Juvenile Offense |

**APPENDIX C**

**INSTITUTIONAL REVIEW BOARD
LETTER OF APPROVAL**

*Institutional Review Board*

DATE:              October 18, 2019

TO:                Samantha Qualkenbush, 1
FROM:              University of Northern Colorado (UNCO) IRB

PROJECT TITLE:     [1502202-1] Adverse Childhood Experiences: Specific Influences on
                   Adolescent Delinquency and Adult Criminality
SUBMISSION TYPE:   New Project

ACTION:            APPROVAL/VERIFICATION OF EXEMPT STATUS
DECISION DATE:     October 18, 2019
EXPIRATION DATE:   October 18, 2023

Thank you for your submission of New Project materials for this project. The University of Northern
Colorado (UNCO) IRB approves this project and verifies its status as EXEMPT according to federal IRB
regulations.

We will retain a copy of this correspondence within our records for a duration of 4 years.

If you have any questions, please contact Nicole Morse at 970-351-1910 or nicole.morse@unco.edu.
Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of
Northern Colorado (UNCO) IRB's records.