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## Differences in Criminal Behavior Based on Experiences Involving Parental Incarceration

Brooke Bowie Fitzgerald  
*Walden University*

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# Walden University

College of Allied Health

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Brooke Bowie Fitzgerald

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Walden University  
2023

Abstract

Differences in Criminal Behavior Based on Experiences Involving Parental Incarceration

by

Brooke Bowie Fitzgerald

MS, Walden University, 2020

BS, James Madison University, 2017

Dissertation Submitted in Fulfillment  
of the Requirements for the Degree of

Doctor of Philosophy

Clinical Psychology

Walden University

August 2023

## Abstract

Parental abandonment, a form of abuse and neglect, can be experienced due to various factors, including incarceration. When parents are incarcerated, children may face factors such as housing instability, financial strain, behavioral problems, mental health issues, and criminal justice involvement. Due to little research that is available, there are challenges in terms of providing programs to children in this position that could focus on preventing negative impacts of parental incarceration in order to combat substance abuse and criminal behaviors, promote better adjustment to stressors, and support mental health treatment. The attachment theory, developed by Bowlby, Ainsworth, and Blatz was used for this study as well as the Developmental and Life Course Criminological theories. This research involved identifying the impact of incarceration on children by focusing on the age at which they experienced traumatic events with a focus on number of future arrests, differences between maternal and paternal interaction, and the impact on the age of first arrest using a quantitative approach with an archival data set from the National Longitudinal Study of Adolescent to Adult Health by Harris and Udry. This research involved using binomial logistic regressions to analyze these variables. Results indicated that parental incarceration had no impact on children's future arrest frequency or age of their first arrest. Findings may be used by clinicians for positive social change through helping children of incarcerated parents to combat challenges regarding the changes within the family structure and psychological distress over their lifespan.

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## Dedication

My dissertation is dedicated to my late grandmother who I know would have given anything to be here with me at this time. She demonstrated how to be caring and giving toward others while still being willing to work hard for yourself and your family. My grandmother started a life here in America after immigrating from Ireland with nothing more than the clothes on her back and my grandfather's hand in hers showing her true dedication to making a life worth living. There is not a day that goes by where I do not feel her presence around me, and I know she had a lot to do with completing my degree. Grandma, I love you and miss you more than I could possibly say. Thank you for your everlasting encouragement and love.

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To my family, specifically, my parents and baby brother, the support and encouragement throughout my time in school have been some of the main reasons I have made it as far as I have. With your support, you have also given me the compassion and love that I did not always show myself. I love you infinity, infinity.

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## Table of Contents

Chapter 1: Introduction to the Study.....	1
Background.....	1
Problem Statement .....	3
Purpose.....	4
Nature of the Study.....	4
Research Questions .....	5
Significance.....	5
Theoretical Framework .....	7
Definitions of Terms .....	8
Assumptions.....	9
Scope and Delimitations .....	9
Limitations .....	9
Summary .....	10
Chapter 2: Literature Review .....	11
Literature Search Strategy.....	11
Theoretical Framework .....	12
Attachment Theory .....	13
Developmental and Life-Course Criminology.....	18
Parental Incarceration .....	20
Paternal Incarceration .....	21
Maternal Incarceration .....	23



Juvenile Delinquency .....	25
Adult Criminal Behavior.....	29
Summary .....	32
Chapter 3: Research Method.....	34
Description of the Study .....	35
Research Design.....	37
Research Question and Hypotheses.....	39
Statistical Analyses .....	39
Threats to Validity .....	42
Ethical Assurances .....	43
Summary .....	44
Chapter 4: Results .....	45
Data Collection .....	46
Analysis Results .....	50
RQ1.....	51
RQ2.....	51
RQ3.....	52
Summary .....	53
Chapter 5: Discussion, Conclusions, and Recommendations.....	54
Interpretation of the Findings.....	54
Limitations of the Study.....	55
Recommendations.....	55

Implications.....	55
Conclusion .....	56
References.....	57
Data Analysis Tables .....	66
Appendix.....	73

## List of Tables

Table 1. Demographic Data .....	66
Table 2. Youngest Age Experiencing Parental Incarceration Predicting the Number of Arrests .....	67
Table 3. Multicollinearity Analysis for RQ1 .....	68
Table 4. Youngest Age Experiencing Maternal Incarceration Predicting the Number of Arrests .....	69
Table 5. Multicollinearity Analysis for RQ2 .....	70
Table 6. Youngest Age Experiencing Parental Incarceration Predicting the Age of First Arrest .....	71
Table 7. Multicollinearity Analysis for RQ3 .....	72

## Chapter 1: Introduction to the Study

When considering childhood abuse and neglect, there has been limited research regarding parental incarceration as a form of abandonment of children. Multiple sources of literature identify research has lacked focus on developmental timing of children who experience parental incarceration. Parental abandonment as a form of neglect and abuse can lead to negative impacts for children including increased rates of a child's future arrests, convictions, and incarcerations, as well as higher occurrences of psychological distress (Boland et al., 2021; Muftic et al., 2015). However, factors which can influence these negative impacts of parental incarceration is missing from present literature. In this study, by focusing on the age of children when they experience parental incarceration, which parent was incarcerated, and age of their first arrest, I aimed to provide evidence supporting preventative measures to reduce child criminal behaviors as adults. This chapter includes background information that is currently available about this topic, the purpose and nature of this current study, as well as the theoretical framework.

### **Background**

In the U.S., one-third of adults between the ages of 18 and 29 have experienced parental incarceration, leading to changes in financial security, household roles, and parenting responsibilities that require adjustment (Antle et al., 2020; Morgan et al., 2021). As of 2010, there were 1.7 million children who experienced incarceration in America, while between 52 and 63% of incarcerated adults were parents as of 2015 (Thomson et al., 2018). The most common adverse family experiences resulted from low family economic status and presence of a family member who was convicted (Altintas &

Bilici, 2018). Parental incarceration has been shown to have negative impacts on numerous areas of juvenile life in the present as well as future (Boland et al., 2021). High ACE scores have been associated with a higher total number of convictions, and early life exposure to any form of maltreatment has been connected to psychological distress over the lifespan (Boland et al., 2021). Over 2 million juvenile arrests occur each year in the U.S., with more than 350,000 being held in detention centers and more than 90,000 housed in correctional facilities (Mallett & Kirven, 2015). Offenders were identified to be two times more likely to have mental health disorders and 60 times more likely to have faced maltreatment victimization (Mallett & Kirven, 2015).

Muftic et al. (2015) found those who experienced maternal incarceration were more likely to experience arrest as an adult, as well as conviction and incarceration, and were two times more likely to be involved in the criminal justice system. Specifically, maternal incarceration was more impactful than maternal smoking, maternal education, or paternal incarceration, although each was significant in terms of predicting incarceration (Muftic et al., 2015). Researchers Muftic and Smith (2015) found children of incarcerated parents typically demonstrate more violent behaviors growing up. Not only is participating in violent behaviors more common, but they are also more commonly exposed to household member violence (Turney, 2018). Van Wert et al. (2017) discovered when aggression is present, there is also a significant increase in the likelihood of cooccurring forms of maltreatment during childhood. Children who demonstrate signs of aggression or violence are also found to have increased risks of depression, anxiety, withdrawal, intellectual and developmental disabilities, academic

difficulties, attachment issues, and diagnoses of ADHD (Van Wert et al., 2017).

Household members were also found to have higher rates of mental illness, divorce and separation, substance abuse, and death among children (Turney, 2018). However, there is a lack of information about the importance of focusing on children who do experience parental incarceration in order to identify needs for preventative programs. By focusing on developmental ages of children when parents are incarcerated, my goal was to determine when preventative programs will become the most important and find which factors play a significant role in terms of their own experiences with criminal behaviors.

### **Problem Statement**

Little research has been conducted focusing on the impact of parental incarceration while considering developmental timing of children when first experienced. Although there is research about parental abuse and neglect, parental abandonment due to incarceration is lacking in current literature. By working to identify how the impact of parental incarceration influences adult criminal behavior, it is important to consider ages of children during this time. The ages of 2 and younger is a critical period during which early relationships and attachments can be impacted and will be included in the research questions of this study. In addition, distinguishing between maternal and paternal incarceration was addressed in this study. Understanding the impact parental incarceration can have on children and their future criminal behavior will allow preventative measures to be in place such as youth programs and specific treatment methods.

### **Purpose**

This quantitative study involved using archival data to identify arrest rates based on ages of participants when they first experienced parental incarceration as children. A cut-off age of 2 was used because it was determined to be a critical age period in Bowlby's attachment theory. I divided participants into the following groups: ages 0-2 years, 3-10 years, 11-17 years, and 18+ years in order to compare stages of development involving attachment. Lee et al. (2020) identified that parental incarceration is considered a form of abandonment; therefore, supporting the importance of determining appropriate interventions is vital in terms of reducing risks of both child and adult interactions with the criminal justice system. I also identified differences between incarcerated parents to determine how this may change engagement in criminal behavior, as well as ages of first arrest.

### **Nature of the Study**

This study was quantitative in nature and involved using archival data to determine differences in terms of criminal behavior among individuals based on age they were during childhood when they experienced parental incarceration, age of first arrest, and differences based on which parent was incarcerated. The National Longitudinal Study of Adolescent to Adult Health (Add Health), by K. M. Harris and J. R. Udry includes a public data set that was used for this study in order to provide a nationally-representative sample of U.S. adolescents entering adulthood using in-home interviews with data gathered between 1994 and 2018 in five different phases, or waves, of data collection during these years. In these interviews, participants provided information about

their social, economic, psychological, and physical wellbeing, with contextual data about their families, neighborhoods, communities, school friends, peers, and romantic relationships. Specifically for this study, the data gathered in these interviews regarding participants' knowledge of parental incarceration, age they were the first time a parent was incarcerated, information about which parent was incarcerated, and age of participants' first arrest were used.

### **Research Questions**

RQ1: Is there a significant increase in terms of number of adult arrests if they experienced parental incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009?

H<sub>0</sub>1: There is a significant increase in terms of number of adult arrests if they experienced parental incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009.

H<sub>a</sub>1: There is not a significant increase in terms of number of adult arrests if they experienced parental incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009

RQ2: Is there a significant increase in terms of the number of adult arrests if they experienced maternal incarceration instead of paternal incarceration at the age of 2 or younger when controlling for age between 2007 and 2009?

H<sub>0</sub>2: There is a significant increase in terms of number of adult arrests if they experienced maternal incarceration instead of paternal incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009.



H<sub>a2</sub>: There is not a significant increase in terms of number of adult arrests if they experienced maternal incarceration instead of paternal incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009

RQ3: Is there a significant decrease in terms of the age of adult first arrests if they experienced parental incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009?

H<sub>03</sub>: There is a significant decrease in the age of adult first arrests if they experienced parental incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009.

H<sub>a3</sub>: There is not a significant decrease in the age of adult first arrests if they experienced parental incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009

### **Significance**

The National Child Trauma Stress Network Complex Trauma Task Force has identified parental incarceration to meet criteria for complex traumatic exposure due to the multiple types of traumatic events that occur within the caregiving system (Morgan-Mullane, 2018). However, without research being focused on the traumatic impact of criminal behavior that is potentially impacted by parental incarceration, there are currently no appropriate prevention programs for this population. Further studies need to focus on how to implement specific preventative measures if there is a significant increase in individual criminal behaviors when children experience parental incarceration based on different age categories (0-2 years and 3-17 years). Although there is some

evidence supporting juvenile delinquency programs and specific treatment methods for youth participating in criminal behavior, there is little information about treatment methods for children of incarcerated parents.

Development of symptoms associated with PTSD, depression, anger, aggression, isolation, and self-harming behavior is common due to events such as arrests, visitations, issues with attachment, emotional withdrawal, difficulty sleeping, and cognitive delays due to parental incarceration (Morgan-Mullane, 2018). Examples of a treatment methods include trauma-focused cognitive behavioral therapy (TF-CBT) and multisystemic therapy (MST), which can be used for children's potential development of these symptoms and rehabilitation of youths involved in crime (Cicerali & Cicerali, 2018; Morgan-Mullane, 2018). Also within MST, families are able to focus on coping skills, stress management, cognitive skills, problem-solving techniques, and social communication skills can be promoted for families (Cicerali & Cicerali, 2018). However, Morgan-Mullane (2018) reported there are no documented studies that focus on clinical intervention or treatment methods that reduce effects of this type of trauma.

### **Theoretical Framework**

For the framework of this study, I used the attachment theory by Bowlby and supported by Ainsworth and Blatz, as well as the developmental and life-course criminological theory. Rosa et al. (2020) stated risk and protective factors for offending are not the same for all individuals. In addition, this theory is used to address the onset of criminal behavior, types of risk and protective factors that are dependent on age, and how life events impact the development of criminal behaviors. Using Blatz's security theory

and Bowlby's attachment theory, my goal to address the impact of parental abandonment due to incarceration based on attachment characteristics in relationships. Focusing on the attachment theory and developmental and life-course criminological theory can serve as a framework to understand perspectives of attachment traits in relationships as well as identify risk factors for offending.

### **Definitions of Terms**

*Abandonment:* Situation in which parents' identity or whereabouts are unknown and the child has been left by the parent in circumstances in which the child suffers serious harm or the parent has failed to maintain contact with the child or to provide reasonable support for a specified period (Child Welfare Information Gateway, 2019).

*Abuse and neglect:* Any recent act or failure to act on the part of a parent or caregiver that results in death, serious physical or emotional harm, sexual abuse, or exploitation, or an act or failure to act that leads to an imminent risk of serious harm (Child Welfare Information Gateway, 2019).

*Crime:* Behavior, either by act or omission, defined by statutory or common law as deserving of punishment (Legal Information Institute, n.d.).

*Juvenile delinquency:* Conduct by a juvenile characterized by antisocial behavior that is beyond parental control and therefore subject to legal action.

*Parental Incarceration:* Any kind of custodial confinement of a parent by the criminal justice system, except being held overnight in police cells (Murray et al., 2012).

### **Assumptions**

The following assumptions were made. I assumed original researchers from Add Health who conducted the study where this secondary data was gathered from properly collected the data being used in this current study as well as provided a complete dataset for public use. In addition, I assumed participants responded honestly and openly to questionnaires.

### **Scope and Delimitations**

I focused on the number of participants' arrests based on two independent variables: age when they first experienced parental incarceration and whether their mother or father was incarcerated, with age of participants used as a covariate at the time of data collection for RQ1 and RQ2. In addition, RQ3 involved participants' age of first arrest as the dependent variable while considering occurrence of parental incarceration with the same age covariant. This study is limited to data provided through the initial data set by Add Health. This study does not involve addressing other factors related to children's criminal behavior or parental figures other than biological parents.

### **Limitations**

When looking at secondary data, researchers need to look at how data were collected, how variables were defined, and how the sample was chosen to ensure these factors are appropriate for the proposed research questions (Stewart, 2012). The archival research method can involve specific limitations that may not occur with other types of data. This study relied on secondary sources of data from Add Health. Potential errors can result from data that can lead to concerns about construct validity. Using secondary

data can also create issues with internal validity and creates difficulties in testing causal relationships between variables.

### **Summary**

Considering the number of adults who have experienced parental incarceration, one-third of all adults in the U.S. between 18 and 29, it is vital to understand how these childhood factors are affected by adult involvement in the criminal justice system (Antle et al., 2020; Morgan et al., 2021). Environmental and financial changes, mental illness, substance use problems, and criminal behaviors including higher rates of arrest, convictions, and incarcerations affect children during their youth and adolescence (Boland et al., 2021; Muftic et al., 2015). However, there was a lack of information regarding ages of children when they experience parental incarceration based on which parent was incarcerated and variabilities in age of participants when they were first arrested. By identifying such information, my goal was to identify support for the development of greater preventative measures. In Chapter 2, research involving the conceptual and theoretical framework, parental incarceration, juvenile delinquency, and adult criminal behavior is addressed.

## Chapter 2: Literature Review

Each year in the U.S., over two million adolescents are arrested, more than 350,000 are held in detention centers, and more than 90,000 are housed in correctional facilities (Mallett & Kirven, 2015). Considering the vast number of individuals who are incarcerated, it is easy to lose sight of who is impacted, especially families. Children who are experiencing parental incarceration are often neglected. Among populations who have experienced juvenile delinquency, it is two times more likely for these children to experience mental health problems and 60 times more likely in terms of maltreatment victimization compared to those in the general population (Mallett & Kirven, 2015).

A goal of this study was to address lasting consequences that incarceration can have on children, specifically with a focus on attachment styles leading to an analysis of the role age may play during this process. In this chapter, I analyzed articles discussing the attachment theory and developmental and life-course criminology, differences between paternal and maternal incarceration effects, and juvenile versus adult criminal behavior.

### **Literature Search Strategy**

The Walden University Library was the main resource used for peer-reviewed articles. I used the following databases: Gale Academic OneFile Select, APA PsycInfo, Education Source, ScienceDirect, Social Sciences Citation Index, Academic Search Complete, MEDLINE, Project MUSE, Emerald Insight, Directory of Open Access Journals, and Journals@OVID. In addition, Google Scholar was used for additional searches for an exhaustive search of relevant literature.

Key terms used solely or in combination were: *parental incarceration, adverse childhood experiences, abandonment, delinquency, juvenile detention, juvenile criminal behavior, childhood abandonment, parental abandonment, criminal behavior, incarceration, criminal involvement, childhood trauma, childhood neglect, adverse family experiences, childhood maltreatment, criminal recidivism, childhood development, attachment styles, attachment theory, criminological theories, developmental and life-course criminology, and impact of trauma.*

I include a discussion of search strategies that were used for this literature review of relevant sources. In this literature review, I worked to identify the gap in research regarding changes in criminal behavior involving parental incarceration before the age of 2 as well as differences between maternal versus paternal incarceration and the children's age during first arrest.

### **Theoretical Framework**

In this study, the attachment theory and developmental and life-course criminology theories were used. Using Ainsworth's combination of Blatz's security theory and Bowlby's attachment theory, it may be possible to address the impact of parental abandonment due to incarceration based on ages of children and stage of attachment they are currently experiencing with their parent. In addition, the developmental and life course criminological theories were used to address the onset of criminal behavior in life, types of risks and protective factors that are dependent on age, and how life events influence the development of criminal behaviors (Rosa et al., 2020).

Focusing on developmental and life-course criminology will aid in developing an understanding of risk factors for offending.

### **Attachment Theory**

In Bowlby's attachment theory, he identifies that human infants require consistent nurturing relationships with one or more sensitive caregivers to develop into healthy individuals, and when that is unavailable, it can contribute to abnormal behavior or psychopathology (Harlow, 2021; van Rosmalen et al., 2016). This theory identifies the four stages of attachment development are the preattachment phase from birth to 6 weeks, attachment-in-the-making phase between 6 and 8 months, clear-cut attachment phase between 18 months and 2 years, and formation of reciprocal relationship after 2 years (Harlow, 2021). Bowlby not only focused on these stages, but he also explored the loss and grief found when an infant is separated from their mother and argued that the quality of the attachment creates an internal working model of how that child engages with the world during both childhood and adulthood (Harlow, 2021).

Attachment security, or confidence when one is competent and lovable while others are responsive and supportive, is used for resilience in times of mental health and social adjustment (Mikulincer & Shaver, 2019). Attachment theory identifies that the level of security children have within the home and bonds between children and mothers are the foundation for social development (van Rosmalen et al., 2016). Without attachment security, there are increased risk factors for emotional problems and psychopathology, as well as impacts on future attachments in relationships where the child becomes more likely to suppress negative emotions, have distorted views of



themselves and others, and have poor physical and mental health (Mikulincer & Shaver, 2019). The foundation for social development is impacted by physical separation due to disruptions between bonds and development of personality (van Rosmalen et al., 2016). When physical separation disrupted this bond, there are chances of diminished personality development in the future (van Rosmalen et al., 2016). In terms of physical separation when a parent is incarcerated, this form of abandonment is going to have negative effects on child development.

Bowlby identified that many children who engage in juvenile delinquency had disrupted childhoods, and due to early and extended separation of children from their mothers, could create risks of criminal behaviors (Crittenden, 2017; van Rosmalen et al., 2016). Early attachment experiences can lead to unstable and inadequate distress regulation, preventing the ability to cope with stressors appropriately (Mikulincer & Shaver, 2019). These insecure or avoidant attachments tend to lead individuals to block fear, anxiety, shame, sadness, and other negative emotions in order to ignore attachment needs, making them vulnerable to defensive exclusion, therefore security is needed as a building block of mental health and social adjustments (Mikulincer & Shaver, 2019, p. 7). With healthier attachments, people are more likely to be optimistic about life, make more appropriate appraisals of dangers with confidence to handle challenges, and be more successful in terms of emotional regulation (Chen, 2023; Mikulincer & Shaver, 2019).

Following Bowlby's research, Ainsworth became the cofounder of attachment theory. Alongside her work with Bowlby, Ainsworth worked with Blatz which led to her

ability to provide additional information in her work focusing on attachment (van Rosmalen et al., 2016). Ainsworth developed a method of analysis for the quality of attachments with caregivers breaking them down into three types of attachment: secure, insecure-avoidant, and insecure resistant or ambivalent (Chen, 2023; Harlow, 2021). Although Ainsworth supported Blatz's idea of the mother as a secure base, she expanded upon these ideas of attachment theory by identifying methodological innovations to measure the security of the attachment and endorsed sensitivity as a predictor of security (van Rosmalen et al., 2016). First, Ainsworth encouraged a recognition of the difference between maternal warmth and sensitivity, which Bowlby had failed to differentiate, and stated that warmth was simply a personal characteristic of the mother, whereas sensitivity refers to the appropriate response to the baby (van Rosmalen et al., 2016). Ainsworth believed that attachment is formed by the attachment figure's continuous presence, but the security of the attachment was based on the sensitivity of the attachment figure (van Rosmalen et al., 2016). One way that Ainsworth developed measurement and classifications of security was through the Strange Situation Procedure (SSP) which involved a child and mother entering into a strange environment, a stranger entering the room, the mother leaving and then returning, and observing the child's reaction to her reentering the room (van Rosmalen et al., 2016). The child's level of security was measured and classified based on how soon the child resumed playing with the toys, the quicker they did reflect that the child was more secure, as well as the type of attention paid to the mother (van Rosmalen et al., 2016). Using the SSP, Ainsworth published her categorization of patterns of object relations including conforming, overdependent,

withdrawn/overdependent, ambivalent, mother-rejecting, affectionless, and superficial (van Rosmalen et al., 2016).

Similar to Bowlby and Ainsworth, Blatz is commonly recognized for his work within Attachment Theory when addressing the security of attachments. He believed that a child needed a sense of belonging and reliable caregivers to develop a healthy psyche (van Rosmalen et al., 2016). He defines security as the state of consciousness that comes with accepting the consequences of decision-making behaviors and can be experienced when a person feels confident in another to accept consequences on their behalf (van Rosmalen et al., 2016). Children start life dependent on their parents, otherwise identified as infantile or immature dependent security, and develop into a more secure sense of security where they can explore the world around them and use their parents as their “safe base” (van Rosmalen et al., 2016). As the child can investigate their world, they gain confidence in their abilities, so they can feel more secure in themselves and ideally develop independent security (van Rosmalen et al., 2016). However, when a child grows up in an insecure state, commonly formed due to maltreatment and unstable distress regulation in childhood, they can remain immaturely dependent and rely on concepts such as rationalization, compensation, or sublimation as coping mechanisms to handle feelings of insecurity (Chen, 2023; van Rosmalen et al., 2016). Whereas, with secure relationships, healthier coping skills are in place for these individuals as they often have a more optimistic outlook on challenges throughout life and can engage in more emotion-regulation methods (Chen, 2023). Not only was emotion regulation in childhood identified to be positively influenced by attachment security, but it serves as a predictor

of adulthood regulation as well which can aid in problem-solving within interpersonal relationships (Chen, 2023).

A child's developmental stages were used in Blatz's explanation of the importance of having a mother figure in a child's life to gain a healthy sense of security (van Rosmalen et al., 2016). Research suggests that to avoid attachment insecurity, parents should work to give their children as much availability and satisfaction as possible during early childhood, especially before the age of two (Chen, 2023). The critical period of attachment formation occurs before the age of two years which is utilized in this current study (Chen, 2023; Harlow, 2021). These facts support the research questions surrounding the analysis of which parent is incarcerated as well as the cut-off age of two to use in differentiating between developmental stages.

Understanding that parental incarceration is a form of abandonment, it is possible to use Bowlby's Attachment Theory to analyze the negative impacts of the disturbance in the relationship between the child and parent. The attachment theory is utilized in the present study to assess the impacts of parental incarceration on a child's future criminal behavior based on the potential difficulty to have secure attachments with the caregiver while they are incarcerated. To address the different age groups and attachment periods, analyzing the age difference when parental incarceration is experienced, specifically before two years old and then ages three to seventeen years, was based on Bowlby's Attachment Theory (Chen, 2023; Harlow, 2021). Taking this attachment theory into consideration, using the Developmental and Life-Course Criminology contributes to a focus on risk and protective factors that impact criminal activity over the lifespan

(Piquero, 2022). The combination of these two approaches includes a focus on social structures and life events in addition to developmental processes based on the onset of criminal behaviors (Farrington et al., 2018).

### **Developmental and Life-Course Criminology**

About three-quarters of children who experience a form of maltreatment are found to engage in crime in the future whereas only one-fourth have traits of resiliency preventing their engagement (Benedini & Fagan, 2018). The Developmental and Life-Course (DLC) Criminology theories work to analyze and explain longitudinal patterns of offending and what risk and protective factors are related to criminal activity over the lifespan (Piquero, 2022). This perspective came to be in the 1990s with a focus on the developmental, environmental, psychological, biological, social, and risk and protective factors for offending and identified that these criminal career patterns would not be the same for everyone (Fox et al., 2015). DLC states that childhood criminality is often a representation of a predictor for a life of crime as the child ages (Parker et al., 2020). In addition, the effects of childhood, whether that be happy or comprised of neglect and abuse, there is affect both attitudes and behaviors (Parker et al., 2020). When looking at the impact of mental timing, can allow insight into the stages of an individual's life when they have experienced a significant event (Benedini & Fagan, 2018). Unlike other criminological theories, DLC organizes findings and concepts of offending over an entire-life course based both on between-person differences and within-individual developments (Piquero, 2022).

Life-course theories analyze the importance of stages of life for development. During childhood, there are rapid changes to physical, cognitive, and social development along with biological changes such as brain development and the formation of relationships with peers. Aging into adolescence, major milestones are met that involve personality identity and establishing independence, but when experiencing abuse or neglect, there are increased likelihoods of failing to complete such tasks and adapting which can then influence delinquency (Benedini & Fagan, 2018). However, resiliency is challenged when an individual experiences a form of trauma in multiple developmental periods of their life and can have the greatest impact on issues including engagement with criminal behaviors (Benedini & Fagan, 2018). With a growing number of stressors throughout life, positive adaptation to these issues decreases while engagement in what is referred to as “criminal coping” increases (Benedini & Fagan, 2018, p. 4).

DLC utilized psychopathy and found through longitudinal research that childhood and adolescent psychopathy scores were predictors of adult criminality (Fox et al., 2015). Psychopathic personality features were found to predict all aspects of criminal activity including the age of onset, ability to abstain from offending, recidivism severity, type, and frequency are all found to have a strong heritability supporting biological influences on these behaviors (Fox et al., 2015). In addition, research has focused on antisocial offenders which can include adolescence-limited offenders who demonstrate the antisocial elements during adolescence only and the life course persistent offenders who start showing antisocial traits in childhood and continues into adulthood (Parker et al., 2020). However, some life-course theories suggest that children can recover from

childhood adversities, for example, Sampson and Laub's Age-Graded Theory of Development (Benedini & Fagan, 2018). In recognizing risk factors, this theory identifies the Influence these factors have on involvement in the crime but pointed out that not all children who have psychopathy like antisocial traits may have factors that prevent them from following through with criminal behaviors (Benedini & Fagan, 2018). Within this theory, researchers note that bonding with family is vital in influencing adolescent behaviors and when experiencing abuse or neglect, the bond becomes weaker allowing the child to engage in more criminal acts (Benedini & Fagan, 2018).

Through a literature analysis of these Life-Course and Criminological theories, it is possible to see that much research has been conducted on the ramifications of maltreatment on children's positive and healthy development that can influence all areas of life including emotional, behavioral, and social aspects. However, without focusing on what maltreatment types make an impression on a child specifically, there is a gap in understanding which forms of abuse and neglect have higher likelihoods to lead to delinquency and adult criminal behaviors. To attempt to understand this, the present study focused on addressing this missing piece of literature to understand how parental incarceration as a form of abandonment can play a role in the child's criminal behaviors specifically based on the age of the child when their parent was incarcerated.

### **Parental Incarceration**

In America, one in three individuals between the ages of 18 and 29 has experienced at least one parent being incarcerated and therefore supports the importance of recognizing the impacts that paternal and maternal time spent in jail and prison has on

their children (Antle et al., 2020). In total, as of 2010, there were 1,706,600 children affected by parental incarceration in the US alone, and as of 2015, between 52% and 63% of prisoners are parents with about 65,600 being mothers and the other 744,200 being fathers (Thomson et al., 2018). When a parent is incarcerated, there is a shift in financial security, household roles, and parenting responsibilities that take place and require adjustment (Morgan et al., 2021). There are a variety of effects that stem from parental incarceration including higher rates of mental illness, trauma, antisocial behavior, academic challenges, poor physical health, poverty, stigma-based interactions, homelessness, socio-emotional problems, delinquent behaviors, and cognitive empathy deficits (Morgan et al., 2021; Thomson et al., 2018). Numerous protective factors serve to increase resiliency including social support, positive parenting, and stable caregiver mental health as indicated by the Family Stress and Resilience Theory and Family Inequity Framework (Morgan et al., 2021). Although paternal incarceration as a whole is vital, this study focused on different correlations between paternal and maternal incarceration.

### **Paternal Incarceration**

Paternal incarceration is recognized as a traumatic and stigmatizing adverse childhood experience that can play a role in many areas of a child's life (Turney, 2021). When a father is incarcerated, there are changes within the family structure, finances, negative emotions, less engagement within the family, changes in neighborhood status, and mental health consequences (Turney, 2021). However, there are also considerations of the age when a child experiences parental incarceration. Early childhood paternal



incarceration can have negative effects on adolescent behavior and can impair their functioning; however, when paternal incarceration occurs in middle childhood or early adolescence, there may be more of an impact on adolescent behavior as older children may be able to better comprehend the events of incarceration and family changes (Turney, 2021).

The GST suggests that a strain such as paternal incarceration can lead to negative emotions at which time adolescents may engage in unconventional behaviors (Turney, 2021). Paternal incarceration not only brings out negative emotions in children but can potentially be traumatic if the child is to witness the arrest of their father or attend any of the court hearings (Turney, 2021). These factors may also influence adolescent delinquency due to the stress associated with incarceration (Turney, 2021). This incarceration is also a strain due to the changes in the family unit and parental relationships also connected to an increase in behavior problems (Turney, 2021). Paternal incarceration tends to lead fathers to be less engaged in the child's life, as well as the mother's life, preventing healthy co-parenting (Turney, 2021). Child neglect and maternal physical aggression are connected to paternal incarceration due to caregiver mental health problems and material hardships being faced (Morgan et al., 2021). Mothers are reported to have an increase in rates of neglect and physical aggression toward their children which in turn increases adolescent behavior problems (Turney, 2021).

When considering financial challenges faced through paternal incarceration, it is important to recognize the reduction in financial resources with the loss of a potential

wage earner, plus fees related to the father's incarceration (Leibbrand et al., 2019). Not only does paternal incarceration limit the income for the family, but it also builds up additional costs such as fines, fees, and legal debts associated with court and their crime (Turney, 2021). Upon release from jail or prison, the previously incarcerated father typically provides less financial support to their family and therefore leads to more financial instability for the child (Leibbrand et al., 2019). Given financial strain, there is a connection to housing instability which potentially leads the child and family to live in poor-quality neighborhoods (Leibbrand et al., 2019). Neighborhood socioeconomic status has been associated with children's behavior problems, mental health, college acceptance rates, future incomes, and probability of becoming a single parent (Leibbrand et al., 2019). A neighborhood can impact the child's school quality, job, and peer networks, job opportunities as they grow of age, exposure to crime, and more frequent moving or restrictions on moving due to probation/parole limitations (Leibbrand et al., 2019).

### **Maternal Incarceration**

Maternal incarceration has increased by 700% over the past three decades and, by 2017, there were a total of 225,060 women incarcerated (Zhao et al., 2020). Maternal incarceration is found to have negative impacts on all children, but it is valuable to note that there are differences based on factors such as gender, racial background, and social class (Zhao et al., 2020). When a mother is incarcerated, it has been found that 37% of mothers report their child is living with the other biological parent and is more likely to be looked after by relatives or placed into foster care which leads to housing instability (Aiello & McCorkel, 2017; Thomson et al., 2018). In addition to this, there are changes

in financial resources and an experience of a traumatic separation both impact the child of the incarcerated mother (Thomson et al., 2018).

When a mother is incarcerated, it is more likely that the child will be involved in incarceration-related events like the arrest or sentencing process compared to times when the father is arrested (Zhao et al., 2020). Commonly, mothers are incarcerated further away from their homes as there is a lack of prisons that hold women and therefore makes visitation and communication more challenging for the children (Aiello & McCorkel, 2017; Zhao et al., 2020). Visitation is an important time when the child gains socialization but is recognized as the most demanding piece of incarceration as it involves surveillance, regulation, humiliation, and status degradation (Aiello & McCorkel, 2017). Secondary prisonization occurs when the child visits the parent who is incarcerated and encounters the staff at the jails and prisons who are said to discipline the child and control their emotional reactions which are found to be intense and terrifying to the child and in 24mpactt the visitation (Aiello & McCorkel, 2017).

Muftic et al. (2015) found that those who experienced maternal incarceration had two times the likelihood of experiencing their arrest, conviction, and incarceration. Zhao et al. (2020) identified children of incarcerated mothers are also found to be at a higher risk of criminal justice involvement with an average of being six times more likely to be incarcerated. However, not all researchers agree that maternal incarceration can impact the child's behaviors. Some suggest that there is no significant influence from the incarceration itself, but rather from disadvantages that were preceding the incarceration including family disruption, exposure to drug use and antisocial behaviors, domestic

violence, and economic strain (Zhao et al., 2020). Since these factors stem from the mother's lifestyle, when the mother becomes incarcerated, some researchers believe that the child's delinquent behaviors may become 25mpactul or even decrease altogether (Zhao et al., 2020).

### **Juvenile Delinquency**

Every year in the U.S., millions of juveniles are arrested for a variety of crimes, some of which carry over into adult criminal behavior (Smith, 2019). Due to the number of juveniles arrested each year, the American criminal justice system has worked to understand the reasons for the high rates of delinquency. Some researchers claim that there is no connection between social class and delinquency, while some believe that there are associations between race and delinquency with a two-time higher rate of African American juveniles being arrested compared to their white peers in 2016 (Smith, 2019). However, others believe this is because crimes committed by African American juveniles are more likely to be noticed by police (Smith, 2019). In addition to race, there are differences between the age of arrests and gender, for example, property crimes are reported to peak around age sixteen while violent crimes top off around eighteen (Smith, 2019). As far as gender, boys have a higher rate of delinquency overall and engage in more serious offenses at higher rates of frequency than girls (Smith, 2019). There are only two crimes identified where girls are arrested more often than boys which include prostitution and running away. Juveniles differ from adult criminal behaviors as they typically engage in a variety of crimes rather than specializing in one specific type, and a small percentage commit a combination of minor and serious offenses (Smith, 2019).

A strong predictor of future criminal behavior is the age a child first offends. When a juvenile engages in delinquent behaviors during early childhood, they usually continue it into adulthood with higher rates and more violent crimes (Smith, 2019). In comparison, adolescent onset is more common, and the crimes committed are commonly less serious and will terminate engagement in delinquency during late adolescence (Smith, 2019). Other risk factors in addition to the age of delinquency onset include poverty or socioeconomic status, biological factors, and individual traits of the juvenile (Smith, 2019). Poverty prevents parents and communities to provide successful guidance and supervision to juveniles and the child is more likely to grow up in dysfunctional environments where aggressive behaviors are encouraged leading them to continue these behaviors (Smith, 2019). Research has found that criminal behavior is more likely when there are connections in genetic predispositions towards delinquency and living in environments where this type of behavior is common. Lastly, individual traits such as low verbal intelligence have been found to increase the probability of delinquency as there is difficulty in attaining goals healthily and positively (Smith, 2019).

Family and school factors are additional pieces that have the potential to serve as either risk or protective factors. For example, there is an increased risk of delinquency including having parents involved in the criminal justice system, living in large families, not having structure and delinquency growing up, rejection by the parent, and frequent changes of residence (Smith, 2019). In situations where the parents are attending church, have community support, emphasize academic achievement, have few serious family conflicts, and express love openly while demonstrating interest in the child's activities,

engagement in delinquency is decreased as these serve as protective factors for the juvenile (Smith, 2019). Children who have low academic performance, misbehave in and out of school, have a weak attachment to school staff, and are not involved in school-related activities have all served as risk factors for delinquent behaviors (Smith, 2019). Protective factors in the school include high teacher-student ratios, enough supplies and materials, established rules, and enjoyable working conditions (Smith, 2019).

Additional developmental factors that contribute to juvenile delinquency include temperamental, personality, and health factors along with the previously mentioned socioeconomic, family background, and peer relationship factors. Adverse childhood experiences (ACEs) have been identified as a prominent area of research in criminology to determine if traumatic exposure has an impact on behavioral outcomes (Jahic et al., 2021). Research has identified an increase in delinquent behaviors including homicide, interpersonal aggression, robbery and burglary, carrying weapons, and sexual assault for those that have experienced trauma (Jahic et al., 2021). ACE scores for both boys and girls related to physical and sexual abuse and household dysfunction such as alcohol and drug use and physical violence were connected to bullying, physical fighting, dating violence, and weapon carrying (Jahic et al., 2021). However, boys experiencing physical and sexual abuse and household drug use had an increase in delinquent behaviors, although household alcohol use and witnessing violence were associated with a decrease in delinquent actions (Jahic et al., 2021). ACE exposures have been found to increase the odds of serious, violent, and chronic delinquency by 35%, but the most influential ACE factors on these behaviors have been found to have an incarcerated household member,

physical, sexual, and emotional abuse, physical neglect, household violence, and household substance use (Jahic et al., 2021).

Youth gangs are common across the United States and are linked to many arrests for violent acts (Smith, 2019). Most gang members are reported to be African Americans between the ages of sixteen and twenty where most are boys who instigate, and girls are typically labeled as followers (Smith, 2019). They commonly join these gangs when they have poor social skills, negative experiences at school, a desire for money, and/or have stressful living conditions where the gang services as a membership to a sense of belongingness (Smith, 2019). Research has found that youth gang involvement is significantly associated with childhood maltreatment and can also serve as a predictive factor for delinquent behaviors including the use of drugs and violent crimes (Chui et al., 2023; Smith, 2019). Gang involvement also leads to the use of drugs which can in turn encourage violent crimes to gain money to purchase such substances (Smith, 2019). Using the social learning theory and social bonding theory, research suggests that group participation in gangs and delinquent activities can impact antisocial, criminal, and/or delinquent behaviors, and offenders who did experience childhood maltreatment were found to admire or emulate their anti-social peers (Chui et al., 2023).

Considering the vast number of influential factors in a child or adolescent's life that can impact juvenile delinquency can be overwhelming. From biological predispositions, abuse, environmental factors, support systems, and neglect, it is clear to see the negative impacts these can have on a child's life and decision-making. Engagement in criminal behaviors before the age of eighteen can provide insight into the

childhood experiences that influence these actions without adulthood experiences potentially playing a role. However, considering adult criminal behavior is very relevant to this study to see if these childhood experiences can provide information regarding future involvement with the justice system.

### **Adult Criminal Behavior**

Boland et al. (2021) reported that early life exposure to maltreatment has been connected to psychological distress over the course of an individual's life including a later development of personality psychopathology. Multiple personality characteristics that have been connected to childhood maltreatment are commonly found in the criminal offender populations such as traits related to disinhibition, psychopathy, and borderline and antisocial personality disorders (Boland et al., 2021). Psychopathy has been identified as a risk factor for deviant and criminal behavior along with associations with criminal friends that increase their offending behaviors (Shagufta, 2020). In addition to these risk factors, engagement in antisocial or criminal behavior at a young age (before the age of 12), being involved in delinquency and drug use, and having a negative or antisocial attitude have been found to increase criminal behavior in early adulthood (Segeren et al., 2020).

It has been identified that offenders are found to have higher ACE scores than the general population and a higher number of total convictions (Boland et al., 2021). Low family economic status and family member convictions were found to be the most common adverse family experiences (Altintas & Bilici, 2018). Levenson and Socia (2016) used a nonrandom convenience sample of sexual offenders in outpatient and civil



commitment treatment programs and gathered quantitative data through surveys of dichotomous items, forced-choice categorical responses, and ACE scores. They conducted research that found ACEs had a significant impact on arrests when analyzing the number of non-sex arrests, sex crime arrests, and total arrests (Levenson & Socia, 2016). In addition, they found that sex offenders who had adult victims had higher ACE scores than those with child/adolescent victims (Levenson & Socia, 2016). ACE scores were also found to predict all crimes except DUIs, and other significant predictors of criminal behavior included age, gender, parent's marital status, substance abuse in the household, and if they had a household member who was incarcerated (Levenson & Socia, 2016). As identified through the Rochester Youth Developmental Study, maltreatment in childhood and adolescence is found to be influential on delinquent and criminal behaviors throughout adolescence and young adulthood, and other research was able to find that offenders who experienced abuse during childhood or were witnessing violence growing up were more likely to engage in violent or aggressive acts during adulthood (Segeren et al., 2020). Shin et al. (2016) identified psychological abuse was the only type of maltreatment that had a direct connection to property, fraudulent, and violent crimes while emotional abuse had a path to urgency; however, both physical and emotional abuse, as well as neglect, were all connected to attention seeking behaviors. Neglect was also found to lead to a lack of premeditation and perseverance (Shin et al., 2016).

Kim et al. (2016) utilized the Childhood Trauma Questionnaire and Mini International Neuropsychiatric Interview to gather data from a population of probationers

including the presence of psychiatric disorders, emotional dysregulation, and resilience. As a result of their research, they concluded that there were greater numbers of probationers within the childhood maltreatment group of the study who had lower levels of education and a higher rate of mental illness, specifically Major Depressive Disorder, and higher rates of suicidality scores (Kim et al., 2016). In addition to this finding, they also determined that the presence of mental illness and childhood maltreatment was significantly related to recidivism (Kim et al., 2016). However, they stated that there were no significant differences between the maltreatment and no maltreatment groups regarding gender, age, living situation, or type of crime committed (Kim et al., 2016). Suggestions for future studies included using a larger sample with a prospective longitudinal analysis as well as detailed evaluations of the importance of victimization and treatment methods for criminal offenders (Kim et al., 2016).

In addition to adult criminal behavior being connected to childhood maltreatment, research has also identified that children may develop maladaptive cognitive processes such as distorted beliefs about themselves and others, and then utilize these same processes later in life (Cuadra et al., 2014). The social processing perspective suggests that maladaptation in encoding and interpreting information, identifying goals, brainstorming solutions, and executing responses can stem from aggressive behaviors (Cuadra, et al., 2014). Cognitive distortions are more commonly associated with adult criminal behavior which may include minimizing the seriousness of criminal acts and looking to blame others (Cuadra et al., 2014). Proactive criminal thinking styles have been connected to these distortions which include mollification, entitlement, power

orientation, and super-optimism (Cuadra et al., 2014). Proactive and reactive aggression have both been connected to cognitive distortions that serve to be protective or cutoff experiences of negative emotions (Cuadra et al., 2014).

Given this exhaustive search of relevant literature, numerous areas of future studies were suggested that were used to support the development of this current study. Specifically, Van Wert et al. (2017) identified that future research should emphasize abandonment in adolescence due to it being understudied which prohibits the development of successful prevention methods to be in place. In addition, Muftic et al. (2015), Shin et al. (2016), and Turney (2018) summarized their research with recommendations for future studies to focus on the developmental stages of the child during the experiences of parental incarceration. In addition, Muftic and Smith (2015) and Turney (2018) wrote that determining the difference in maternal and paternal impacts of incarceration should also be considered. To address these gaps in the literature, this study utilized a quantitative approach with archival data to assess if parental incarceration leads to (a) an increase in involvement with the criminal justice system, (b) more involvement if they experienced maternal versus paternal incarceration, and (c) if there is a decrease in age of the first arrest in individuals who experienced parental incarceration before the age of two to support the need for preventative programs.

### **Summary**

While considering the vast amount of literature available regarding negative effects on criminal behavior for both juveniles and adults, it is notable that few articles focus on the impacts of parental incarceration, especially when considering the age of

children who experienced this. After conducting this literature review, it is apparent that based on the attachment theory and life-course and developmental criminology theory, the age children are when experiencing any type of abandonment can critically impact confidence, security, and social and personality development as well as patterns of engaging in criminal behaviors over their lifespan. Studies involving parental incarceration have identified areas of children's lives that become affected. Financial security, household roles, and parenting responsibilities all change due to incarceration and can lead to mental illness, trauma, antisocial behavior, academic challenges, poor physical health, poverty, homelessness, socioemotional problems, delinquent behaviors, and cognitive empathy deficits (Morgan et al., 2021; Thomson et al., 2018).

To fill a gap in literature, I used a quantitative approach with archival data to assess if parental incarceration leads to whether there were differences in terms of numbers of arrests in terms of maternal versus paternal incarceration, and if age of first involvement was a factor in terms of the criminal justice system among individuals who experienced parental incarceration before the age of 2 to support the need for preventative programs. Chapter 3 includes the research design, methodology, data analysis plan, and threats to validity.

### Chapter 3: Research Method

The purpose of this archival study was to determine how parental incarceration impacted children's experiences with the criminal justice system. In addition, I analyzed if there were different influences dependent on which parent was incarcerated. Archival data were used to answer the following research questions:

RQ1: Is there a significant increase in terms of number of adult arrests if they experienced parental incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009?

H<sub>0</sub>1: There is a significant increase in terms of number of adult arrests if they experienced parental incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009.

H<sub>a</sub>1: There is not a significant increase in terms of number of adult arrests if they experienced parental incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009

RQ2: Is there a significant increase in terms of the number of adult arrests if they experienced maternal incarceration instead of paternal incarceration at the age of 2 or younger when controlling for age between 2007 and 2009?

H<sub>0</sub>2: There is a significant increase in terms of number of adult arrests if they experienced maternal incarceration instead of paternal incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009.

H<sub>a2</sub>: There is not a significant increase in terms of number of adult arrests if they experienced maternal incarceration instead of paternal incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009

RQ3: Is there a significant decrease in terms of the age of adult first arrests if they experienced parental incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009?

H<sub>03</sub>: There is a significant decrease in the age of adult first arrests if they experienced parental incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009.

H<sub>a3</sub>: There is not a significant decrease in the age of adult first arrests if they experienced parental incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009

Using an archival dataset from Add Health allowed for access to a diverse participant population across the US and the ability to use longitudinal assessments even with limited resources and access. In this chapter, the study methodology is outlined, descriptions of populations of participants and data collection is provided, and I address how statistical analysis was completed.

### **Description of the Study**

I aimed to compare differences regarding ages of participants when they first experienced parental incarceration, differences between maternal and paternal incarceration, and ages of participants during their first arrest. Regarding RQ1, the dependent variable was number of arrests for each arrest, and the independent variable

was two groups based on the experience of abandonment due to parental incarceration (experienced or not experienced), and the covariate was age of participants. For RQ2, the dependent variable was number of arrests; the independent variable was two groups based on the experience of maternal or paternal incarceration with the covariate remaining the same. Lastly, RQ3 involved the dependent variable of age of first arrest while the independent variables were groups based on occurrence of parental incarceration, and the covariate was current age of participants. The dataset was retrieved from Add Health. This study included a nationally representative sample of over 20,000 adolescents within the U.S. who participated by completing in-home and in-school questionnaires and interviews. Data were gathered between 1994 and 2018 and included information about demographics as well as social, familial, socioeconomic, behavioral, psychosocial, cognitive, and health survey data from participants and their parents. I gained access to this dataset through the Inter-University Consortium for Political and Social Research (ICPSR) within the Institute for Social Research at the University of Michigan with access via Walden University. Public use datasets and information about informed consent appears in Appendix A.

As instructed by ICPSR, the following statement is made with the use of their dataset: “This research uses data from Add Health, a program project designed by J. Richard Udry, Peter S. Bearman, and Kathleen Mullan Harris, and funded by a grant P01-HD31921 from the Eunice Kennedy Shriver National Institute of Child Health and Human Development, with cooperative funding from 17 other agencies. Special acknowledgment is due Ronald R. Rindfuss and Barbara Entwisle for assistance in the

original design. Persons interested in obtaining Data Files from Add Health should contact Add Health, The University of North Carolina at Chapel Hill, Carolina Population Center, Carolina Square, Suite 210, 123 W. Franklin Street, Chapel Hill, NC 27516 (addhealth\_contracts@unc.edu). No direct support was received from grant P01-HD31921 for this analysis.”

### **Research Design**

To compare differences in terms of rates of arrests based on adults’ ages when their parents were incarcerated, which parents were involved, and the age at which they first were arrested, a quantitative nonexperimental design was used to examine archival data to assess relationships between these variables. Archival data were chosen for this study from a diverse participant population. This study was longitudinal and conducted across the U.S., allowing for over 20,000 responses to be gathered over five waves of dates between 1994 and 2018. However, only one wave of data was used for this study which was Wave IV, with a total of 5,114 participants. This was the most recently gathered data involving areas of focus needed for this study. Although Wave V was considered, the format of data collection was altered as it included different questions than previous waves of data collection and did not include necessary variables for this study. Data were located via the ICSPSR through the Institute for Social Research at the University of Michigan which was accessed through Walden University and was downloaded through user guides and codebooks that were analyzed using SPSS. Data were collected and published by Add Health and included both public and restricted data sets.



Originally, Add Health was developed due to a U.S. congressional mandate to determine causes of adolescent health and health behavior with a focus on multiple contexts of adolescent life (Add Health, 2018). The data collected included demographic, social, familial, socioeconomic, behavioral, psychosocial, cognitive, and health survey data from participants and parents along with information about the participant's school provided by the principals (Add Health, 2018). Each participant also provided biological data including genetic markers, blood-based assays, anthropometric measures, and medications to understand biological impacts (Add Health, 2018). The research was planned to be longitudinal in nature so researchers could follow adolescents into adulthood over five waves of data collection beginning in 1994 and ending in 2018 (Add Health, n.d-a).

During the first wave of data collection, a random sample of all 26,606 high schools in the United States was conducted to determine if they were eligible. To be eligible, the school was required to have the eleventh grade and there was a minimum enrollment of thirty students. The sampling frame was derived from the Quality Education Database (QED) and a sample of 80 high schools was selected through a stratified sample with probability proportional to size (Harris, 2013; Harris & Udry, 2021). For each of the 80 high schools selected, a feeder school was also identified and recruited with probability proportionate to its student contribution to the high school. As a result, there was one school pair participating from 80 different communities in urban, suburban, and rural areas in all 50 states (Harris, 2013; Harris & Udry, 2021). After determining these schools' eligibility, in-school questionnaires were given to over 90,000

students in grades 7-12. In addition, there was an in-home sample of 27,000 students who were determined to be eligible based on their responses to the in-school questionnaire given to participants by researchers from Add Health (Harris, 2013).

For my study, the researcher's fourth wave was utilized which consisted of 5,114 participants from the first wave, now ages 24 through 33, who were determined to be eligible from the original sample of participants. Based on their eligibility status, they were chosen to complete in-home questionnaires administered by researchers during this wave of data collection between the years 2007 and 2009. Researchers were able to locate 92.5% of the sample allowing them to interview 80.3% of the eligible sample members. The total number of participants from Wave IV was used in this study rather than collecting a random sample to increase the power of the data without focusing solely on generalizability. 158 participants were identified by G\*Power as the minimum sample size to be used, which was taken into consideration during the analysis.

### **Research Question and Hypotheses**

RQ1: Is there a significant increase in terms of number of adult arrests if they experienced parental incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009?

H<sub>0</sub>1: There is a significant increase in terms of number of adult arrests if they experienced parental incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009.

H<sub>a1</sub>: There is not a significant increase in terms of number of adult arrests if they experienced parental incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009

RQ2: Is there a significant increase in terms of the number of adult arrests if they experienced maternal incarceration instead of paternal incarceration at the age of 2 or younger when controlling for age between 2007 and 2009?

H<sub>02</sub>: There is a significant increase in terms of number of adult arrests if they experienced maternal incarceration instead of paternal incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009.

H<sub>a2</sub>: There is not a significant increase in terms of number of adult arrests if they experienced maternal incarceration instead of paternal incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009

RQ3: Is there a significant decrease in terms of the age of adult first arrests if they experienced parental incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009?

H<sub>03</sub>: There is a significant decrease in the age of adult first arrests if they experienced parental incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009.

H<sub>a3</sub>: There is not a significant decrease in the age of adult first arrests if they experienced parental incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009

### **Statistical Analyses**

To analyze the archival data, Binomial Logistic Regressions were performed to predict the probability that an observation fell into one of two categories of the dichotomous dependent variables based on the independent variable (Laerd Statistics, 2018). Regarding the first research question for this study, there were multiple groups based on the experience of parental incarceration based on the multiple different age groups used and the dependent variable is the number of an adult's criminal arrests which was measured dichotomously as once or more than once. The third variable, or the covariate, was the controlled variable, which was age in the years 2007-2009 when this data was gathered as this factor is believed to affect the results of engagement in criminal behavior (Harris & Udry, 2021). Similarly, for the second research question, the independent groups would be the experience of maternal incarceration based on age group with the dichotomous dependent variable being the number of an adult's criminal arrests (once vs more than one). This would still utilize the covariate which was the age in the years 2007-2009. Differing from these first two questions, for the third research question, the independent groups were still the experience of parental incarceration based on age group and the covariate would still be the age in years 2007-2009; however, the dependent variable would be the age of the participant's first arrest measured dichotomously for age groups 0-17 and 18+ years.

By using G\*Power software, it was determined that the minimum sample size would need to be 158 participants, which is accessible using this archival data where there are 5,114 participants. Also provided by this software is the effect size of 0.25

which represents a minimal meaningful difference or strength of relationships between the variables (Kang, 2021). It is also important to recognize Type I and Type II errors through recognition of the alpha and power levels. In this study, the alpha of 0.05 confirms the maximum number of false positives, or Type I errors, considered to be acceptable, while the power of 0.8 reflects the minimum limit of correctly accepting the alternative hypothesis (Kang, 2021).

### **Threats to Validity**

The validity of research refers to the ability of results to represent true findings that can be applied outside of the study (Patino & Ferreira, 2018). There are two domains of validity which include internal and external validity. Internal validity is the extent to which the results of the study represent accuracy in the population and are not occurring due to any type of methodological error. After internal validity is confirmed, there can be a consideration of external validity, or the ability of the research results to apply to similar individuals in a different setting (Patino & Ferreira, 2018). In this study, there were no threats to the validity of the public dataset as the present research assumed that the data regarding age, parental incarceration rates, and history of criminal behavior were accurate. Also, external validity is confirmed as the outcomes of this study may be generalized to additional population groups. This current data was nationwide when collected and includes both jail and prison sentences which both support the data's generalizability.

### **Ethical Assurances**

Walden University's IRB approval was obtained before the start of this study (#03-29-23-0896328). The IRB is a federally mandated-and locally administered group that is organized to review and monitor research involving human subjects (APA, 2017). They work to protect the rights and welfare of humans participating as subjects in the research through a review of research protocols and materials (APA, 2017). The IRB reviewed the dissertation proposal including purpose, methodology, and implications as well as analyzing permissions to access archival data, the protection of anonymity of data, and storage of information. In addition to the review by the IRB, I also considered the method, design, and data collection process to ensure that these were appropriate for the study to prevent ethical issues and no risk was identified. There is no conflict of issues with anonymity, confidentiality, privacy, or coercion to cause concern as all respondents' identifying information was not published in the data set and all agreed to participate in the study. On the Add Health website under the FAQ section, they describe that written informed consent for participation in all aspects of the research conducted (Appendix A). This informed consent is described by the University of North Carolina School of Public Health Institutional Review Board as guidelines based on the Code of Federal Regulations on the Protection of Human Subjects 45CFR46 (Add Health, 2018). The data is stored in ICPSR and is stored on my laptop which is password protected and I will maintain complete and accurate records of the research activities for at least five years per requirements by the IRB.

### **Summary**

This quantitative archival study was conducted to identify differences in terms of arrest rates depending on what age participants were when they experienced parental incarceration, differences in terms of maternal versus paternal incarceration effects, and ages of first arrest. The data set from Add Health was used in this study to analyze this data, binomial logistic regressions were conducted through SPSS to identify potential relationships between the variables while controlling for the covariate (current age). In Chapter 4, data collection is described, as well as descriptive statistics and inferential hypothesis tests.

## Chapter 4: Results

This chapter discusses the method of data collection and results of the statistical analysis completed regarding the research questions for this study. The purpose of this study was to determine significant differences in terms of criminal behaviors based on experiences involving parental incarceration. Using archival data from Add Health, which was analyzed using binary logistic regressions in SPSS, I tested hypotheses for the following three research questions:

RQ1: Is there a significant increase in terms of number of adult arrests if they experienced parental incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009?

H<sub>0</sub>1: There is a significant increase in terms of number of adult arrests if they experienced parental incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009.

H<sub>a</sub>1: There is not a significant increase in terms of number of adult arrests if they experienced parental incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009

RQ2: Is there a significant increase in terms of the number of adult arrests if they experienced maternal incarceration instead of paternal incarceration at the age of 2 or younger when controlling for age between 2007 and 2009?

H<sub>0</sub>2: There is a significant increase in terms of number of adult arrests if they experienced maternal incarceration instead of paternal incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009.



H<sub>a2</sub>: There is not a significant increase in terms of number of adult arrests if they experienced maternal incarceration instead of paternal incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009

RQ3: Is there a significant decrease in terms of the age of adult first arrests if they experienced parental incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009?

H<sub>03</sub>: There is a significant decrease in the age of adult first arrests if they experienced parental incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009.

H<sub>a3</sub>: There is not a significant decrease in the age of adult first arrests if they experienced parental incarceration at age 2 or younger compared to 3 to 17 when controlling for age between 2007 and 2009

In this chapter, I discuss methods of data collection, where archival data for this study were derived, and results of conducting binomial logistic regressions in SPSS.

### **Data Collection**

The Add Health longitudinal study is nationally representative and was conducted between 1994 and 2018, involving five waves of data centered around adolescent health and health behaviors with a focus on different contexts of adolescent life using a multi-survey multi-wave interdisciplinary design. Data collected included biological data (genetic markers, medications) as well as demographic, social, familial, socioeconomic, behavior, psychosocial, cognitive, and health survey data gathered from participants and

their parents along with additional information from principals where children were attending school.

In 1994, the first wave of data was collected after choosing a random sample from all 26,606 high schools within the U.S. These schools were then determined to be eligible for the study if they had an 11th grade and minimum enrollment of 30 students.

Following this, high schools were sorted by size, school type, census region, level of urbanization, and percentage of White students, at which time 80 schools were selected from a sampling frame determined by the Quality Education Database (QED). Fifty-two of these 80 high schools were selected to participate based on their eligibility, and the remaining 28 schools were replaced by high schools similar to those originally chosen that were sorted according to eight variables: school size, school type, level of urbanization, percentage of White students, grade span, percentage of Black students, census region, and census division (Add Health, n.d.). The high schools that were chosen to participate were then asked to identify a junior high or middle school that was expected to provide at least five students to the entering class of the high school as a feeder school (Add Health, n.d.). This was required to be proportional with the percentage of high school entering classes, with four of the schools having no eligible feeders and 20 serving as their own feeder schools (Add Health, n.d.). For Add Health researchers to access the participants, parental consent was required through passive consent forms, when possible; however, some schools specifically required active consent forms (Add Health, n.d.). To protect identities of participants, a security system

prevented access to any identifying information, and data were collected using identification numbers.

In total, Wave I involved 145 middle, junior high, and high schools participated in this study with a total of 90,118 students completing a 45-minute questionnaire, and each school completed a school administrator questionnaire (Add Health, n.d.). In-school questionnaires included general descriptive information about students, their parents' backgrounds, their friends, school life, schoolwork and activities, and general health status and health-related behaviors (Add Health, n.d.). The school administrator questionnaire included information about educational setting and environment such as general characteristics of the school and student body as well as curriculum, school services, and programs offered to students (Add Health, n.d.).

In addition to in-school questionnaires, in-home questionnaires were given to a sample of adolescents in grades 7-12 who were interviewed in the first two waves of this study (Add Health, n.d.). These in-home interviews required written informed consent from the parent or guardian of the adolescent participating and utilized a Computer-Assisted Personal Interview (CAPI)/Audio Computer-Assisted Self Interview (ACASI) for administration (Add Health, n.d.). However, if the section required responses to more sensitive questions, they were asked these in the self-administered portion of the interview (Add Health, n.d.). The participant's parent or guardian was also interviewed during the first wave of the study to gather additional information about the family composition and the adolescent's health history including demographic and health-related information about the parent or guardian, and general questions about the adolescent

(Add Health, n.d.). A core sample of in-home adolescents was selected from rosters supplied by the school at which time a sample of the study of relationship patterns was selected from two schools as well as a genetic sample of siblings and twins and a sample of unrelated adolescents within the same household (Add Health, n.d.). The researchers note that they gathered an oversample of black adolescents with college-educated parents, physically disabled students (Wave I only), as well as Cuban, Puerto Rican, and Chinese adolescents (Add Health, n.d.) for their study.

Wave IV, used in this present study, was a follow-up of the Wave I respondents. This data collection occurred between 2007 and 2009 when the participants were between 24 and 33 years old and completing their transition into adulthood. They were able to locate 92.5% of the participants and had an 80.3% response rate totaling 15,701 participants (Add Health, n.d.). In this wave, 5,114 of the participants participated in a 90-minute computer-based survey, a 30-minute biomarker collection, and an Intra-Individual Variation (IIV) study (Add Health, n.d.). Wave IV used an integrative approach with interviews collecting biological data for Add Health to understand social, behavioral, and biological connections in health outcomes as the original sample of participants aged through adulthood (DSDR, 2022). For this study, 158 participants was the minimum sample size identified by G\*Power to be used of the 5,114 total participants. There was a relatively even distribution between males (44.4%) and females (52.1%) with most of their ages falling between 27 and 30. Only 3.5% of the participants had a mother who served time in jail or prison, whereas 13.7% had a biological father

who was incarcerated. Frequencies and percentages of the demographic data are presented in Table 1.

### **Analysis Results**

A total sample of 5,114 participants were utilized for this research while taking into consideration the minimum sample size identified by G\*Power. This was decided to increase the power of the findings rather than focusing solely on generalizability by using a random sample approach. In addition, given the lack of equal variances, groups for each of the variables were created in SPSS, making continuous variables into categorical ones. These groups for the independent variables were changed to include more age groups than originally planned due to the lack of equality of variances as well, so the ages were broken up into smaller groups (0-2, 3-10, 11-17, 18+ years) when analyzing the age of experiencing parental/maternal incarceration and the participant's first arrest. To analyze the data, Binomial Logistic Regressions were utilized for each of the three research questions. Within the analyses, any missing data from the original data set and any responses that were labeled as "refused," "legitimate skip," "before birth," and "don't know" were not utilized for the study to focus the analysis on the participants who did experience parental incarceration or their own arrests. For each of the three research questions, preliminary analyses were conducted to assess the assumption of outliers, multicollinearity, and linearity as discussed in detail below to ensure proper use of the Binomial Logistic Regression approach.

**RQ1**

Binary logistic regression was conducted to examine the relationship between the age a participant experienced parental incarceration, the participant's number of arrests, and their age when completing the questionnaire. The results of the preliminary analyses indicated that there were no outliers as identified in the casewise plot produced in SPSS. There was no multicollinearity as  $VIF = 1.004$  for both variables. The results of the Box-Tidwell test indicated the linearity assumption was not violated ( $p > .05$ ). The Hosmer and Lemeshow Test was used to identify a good fitting model when there is no difference between the observed and model-predicted values which determined that there is a good model fit and was not violated ( $p > .05$ ) (Sinthupundaja et al., 2017).

The logistic regression results were not significant,  $X^2(5, N=277) = 2.674, p = 0.750$ , indicating the model could not distinguish between respondents' number of arrests. The model explained between 1% (Cox & Snell  $R^2$ ) and 1.3% (Nagelkerke  $R^2$ ) of the variance in arrest status and correctly classified 63.2% of the cases. Sensitivity was 98.9%; however, specificity was 0%. There were no significant predictors identified in the analysis, therefore the null hypothesis for this research question cannot be rejected.

**RQ2**

Binary logistic regression was conducted to examine the relationship between the age a participant experienced maternal incarceration, the participant's number of arrests, and their age when completing the questionnaire. The results of the preliminary analyses indicated that there were no outliers as identified in the casewise plot produced in SPSS. There was no multicollinearity as  $VIF = 1.026$  for both variables (see Table 5). The

results of the Box-Tidwell test indicated the linearity assumption was not violated ( $p > .05$ ). The Hosmer and Lemeshow Test was used to identify a good fitting model when there is no difference between the observed and model-predicted values which determined that there is a good model fit and was not violated ( $p > .05$ ) (Sinthupundaja et al., 2017).

The logistic regression results were not significant,  $X^2(5, N=79) = 4.618$   $p = 0.464$ , indicating the model could not distinguish between respondents' number of arrests (See Table 4). The model explained between 5.7% (Cox & Snell R<sup>2</sup>) and 7.9% (Nagelkerke R<sup>2</sup>) of the variance in arrest status and correctly classified 68.4% of the cases. Sensitivity was 96.2% and specificity was 11.5%. There were no significant predictors identified in the analysis, therefore the null hypothesis for this research question was not rejected.

### **RQ3**

Binary logistic regression was conducted to examine the relationship between the age a participant experienced parental incarceration, the age the participant was when they were first arrested, and their current age when completing the questionnaire. The results of the preliminary analyses indicated that there were no outliers as identified in the casewise plot produced in SPSS. There was no multicollinearity as  $VIF = 1.000$  for both variables (See Table 7). The results of the Box-Tidwell test indicated the linearity assumption was not violated ( $p > .05$ ).

The logistic regression results were not significant,  $X^2(5, N=178) = 1.451$ ,  $p = 0.919$ , indicating the model could not distinguish between respondents' age when they

were arrested (see Table 6). The model explained between 0.8% (Cox & Snell R<sup>2</sup>) and 1.1% (Nagelkerke R<sup>2</sup>) of the variance in arrest status and correctly classified 59% of the cases. Sensitivity was 86.5% and specificity was 26.8%. There were no significant predictors identified in the analysis, therefore the null hypothesis for this research question was not rejected.

### **Summary**

As a result of binomial logistic regressions, null hypotheses were not rejected for any research question. Although the literature review provided evidence of the effects of parental incarceration on children's future behaviors, mental health, and substance abuse, I was not able to determine relationships between parental incarceration and participants' future criminal behaviors. In Chapter 5, limitations of this study are discussed with suggestions for future research to focus on promoting positive social change.



## Chapter 5: Discussion, Conclusions, and Recommendations

The goal of this study was to determine if there were any relationships between parental incarceration and future arrests depending on the age the child was when they first experienced this form of abandonment. After completing binomial logistic regressions for the three research questions presented in this study, I was unable to identify a relationship between experiences involving parental incarceration and participants' number of arrests or age of first arrest. In this chapter, an interpretation of the results and limitations of this study will be discussed along with suggestions for future research considerations.

### **Interpretation of the Findings**

The findings of the regressions used to analyze the variables of this study in SPSS indicated that the null hypotheses for all research questions could not be rejected. Therefore, the information found as a result of this study does not support the information shared in the literature review of other research conducted on this area or the framework used for this study comprised of Attachment Theory and the Developmental and Life Course Criminological Theories. Researchers were previously able to identify higher rates of delinquent behaviors due to experiences of parental incarceration while other researchers found those who had incarcerated mothers had a higher risk of criminal justice involvement (Thomson et al., 2018; Zhao et al., 2020).

### **Limitations of the Study**

Since I used archival data, there were multiple limitations in this study. As other researchers gathered data, I had to rely on their methods and processes of gathering information with potential errors in data collection leading to concerns about construct validity. In addition, I did not take into consideration other influential factors that could be impacting criminal behavior as I only focused on the link between parental incarceration and participant arrests. Future studies should address whether there are differences between biological parents and caretakers, mental illness, and socioeconomic status. In addition, data were collected between 2005 and 2007 as the most recent wave of data collection was not applicable to this study.

### **Recommendations**

Future research should consider addressing factors that could impact criminal behavior involving parental incarceration such as types of crimes, length of time of parent incarceration, and how results may have been affected by looking at other caregiver roles rather than just biological parents such as stepparents, grandparents, adoptive parents, etc. In addition, addressing variables such as mental health diagnoses or impacts of socioeconomic status could have an impact on criminal behaviors.

### **Implications**

It is valuable to understand the negative impacts that experiences involving parental incarceration can play on children's lives. With more programs focusing on youth who are experiencing major family structure changes involving incarceration, it is valuable to address their need for interventions. This may include mental health programs

to address presenting symptoms, family therapy focusing on household changes during and after incarceration, and/or after-school programs in order to limit free time when youth may be engaging in criminal behaviors. Although I was unable to provide insights regarding relationships between parental incarceration and future criminal behavior, literature does support the need for childhood and adolescent interventions.

### **Conclusion**

Being able to identify risk factors and life-changing outcomes for youth who experience parental incarceration can play a vital role in their lives, family functioning, and society as a whole. Based on literature regarding challenges among youths after experiencing parental incarceration, there is a need for interventions for this population that is not currently being offered. Research focused on parental incarceration is still prevalent, and future research should continue identifying risk and outcome factors for this group.

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## Data Analysis Tables

**Table 1***Demographic Data*

Variable		<i>N</i>	%	Valid%	Cumulative%	
Biological Sex	Male	2353	44.4	46.0	46.0	
	Female	2761	52.1	54.0	100.0	
	Total	5114	96.5	100.0	--	
	Missing	186	3.5	--	--	
Current Age	24	5	--	.1	.1	
	25	247	--	4.8	4.9	
	26	665	--	13.0	17.9	
	27	832	--	16.3	34.2	
	28	888	--	17.4	51.6	
	29	898	--	17.6	69.1	
	30	887	--	17.3	86.5	
	31	573	--	11.2	97.7	
	32	102	--	2.0	999.7	
	33	17	--	.3	100.0	
	Missing	186	--	--	--	
	Bio Mom Served Time Jail/Prison	No	4888	92.3	96.5	96.5
		Yes	177	3.3	3.5	100.0
Missing		235	4.4	--	--	
Bio Dad Served Time Jail/Prison	No	4093	77.2	84.9	84.9	
	Yes	727	13.7	15.1	100.0	
	Missing	480	9.1	--	--	

**Table 2***Youngest Age Experiencing Parental Incarceration Predicting the Number of Arrests*

Predictor	B	df	P	Exp(B)	95% CI for EXP(B)	
					Lower	Upper
(constant)	-125.140	1	.379	.000		
Age 0-2		3	.887			
Age 3-10	.421	1	.619	1.523	.290	8.005
Age 11-17	.310	1	.790	1.363	.139	13.392
Age 18+	.589	1	.674	1.803	.116	28.069
Current age	-1.941	1	.365	.144	.002	9.597
Natural log of current age	54.129	1	.372	3.219E +23	.000	1.483E+75

a. Dependent Variable: Number of times arrested by the police

**Table 3***Multicollinearity Analysis for RQ1*

Variables	Collinearity Statistics	
	Tolerance	VIF
Current Age	.996	1.004
Age of Parental Incarceration	.996	1.004

**Table 4***Youngest Age Experiencing Maternal Incarceration Predicting the Number of Arrests*

Predictor	B	df	P	Exp(B)	95% CI for EXP(B)	
					Lower	Upper
(constant)	167.659	1	.562	6.510E +72		
Age 0-2		3	.500			
Age 3-10	1.386	1	.186	3.999	.512	31.211
Age 11-17	.634	1	.546	1.885	.241	14.764
Age 18+	1.064	1	.301	2.897	.386	21.724
Current age	2.314	1	.591	10.117	.002	46353.517
Natural log of current age	-69.858	1	.570	.000	.000	1.843E+74

a. Dependent Variable: Number of times arrested by the police



**Table 5***Multicollinearity Analysis for RQ2*

Variables	Collinearity Statistics	
	Tolerance	VIF
Current Age	.975	1.026
Age of Maternal Incarceration	.975	1.026

**Table 6***Youngest Age Experiencing Parental Incarceration Predicting the Age of First Arrest*

Predictor	B	df	P	Exp(B)	95% CI for EXP(B)	
					Lower	Upper
(constant)	13.687	1	.932	879317.947		
Age 0-2		3	.782			
Age 3-10	-.003	1	.995	.997	.450	2.211
Age 11-17	.180	1	.711	1.197	.462	3.105
Age 18+	.429	1	.403	1.536	.561	4.202
Current age	.271	1	.910	1.311	.012	142.949
Natural log of current age	-6.377	1	.925	.002	.000	1.384E+55

a. Dependent Variable: Age when first arrested by the police

**Table 7***Multicollinearity Analysis for RQ3*

Variables	Collinearity Statistics	
	Tolerance	VIF
Current Age	1.000	1.000
Age of Maternal Incarceration	1.000	1.000

## Appendix

### Email correspondence from Add Health with permissions and informed consent information.

Thanks for your inquiry. Please see the Add Health FAQs (<https://addhealth.cpc.unc.edu/documentation/frequently-asked-questions/>) about informed consent:

#### Was informed consent required for participation in Add Health?

Add Health participants provided written informed consent for participation in all aspects of Add Health in accordance with the University of North Carolina School of Public Health Institutional Review Board guidelines that are based on the Code of Federal Regulations on the Protection of Human Subjects 45CFR46: <https://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.html>.

Examples of these forms are available in the Wave III Documentation and Wave IV Documentation found on the Add Health Codebooks page at <https://addhealth.cpc.unc.edu/documentation/codebooks/>. Have provided the specific links below.

W3 Data Documentation.pdf, [https://addhealth.cpc.unc.edu/wp-content/uploads/docs/restricted\\_use/Wave-III-In-home-Interview-Data.zip](https://addhealth.cpc.unc.edu/wp-content/uploads/docs/restricted_use/Wave-III-In-home-Interview-Data.zip)

Wave IV Data Documentation.pdf, [https://addhealth.cpc.unc.edu/wp-content/uploads/docs/restricted\\_use/w4inhome.zip](https://addhealth.cpc.unc.edu/wp-content/uploads/docs/restricted_use/w4inhome.zip)

Here is a description of the public-use data as mentioned in the FAQs:

#### How does the Public-Use data set compare to the Restricted-Use data set?

Public-use data contains all the data from the In-home Interviews, just a smaller sampling. The smaller sample limits deductive disclosure risk. It is 1/3 of the total Add Health Sample Members (AHSM) who fall into the Core and High Education Black samples. (Note: because some AHSMs are in both samples, one cannot simply add the core sample total to the high education black sample total.) Add Health public-use data can be downloaded from the three sources listed on the [Add Health Public-Use Data page](#).

The sample drawing for public-use data is wave specific. New samples are drawn based on the final N at each wave.

3rd of W1	3rd of W2	3rd of W3	3rd of W4
6915	4913	5066	5294
3rd of Core & Hi Ed BI Samples W1 3rd of Core & Hi Ed BI Samples W2 3rd of Core & Hi Ed BI Samples W3 3rd of Core & Hi Ed BI Samples W4			
6504	4834	4882	5114

Public-use data does not contain ID numbers of friends, siblings or romantic partners, so the data cannot be linked. The public-use data also does not contain files on the following. These require a restricted-use contract

1. Obesity and Neighborhood Environment
2. Genetics, disposition,
3. Political context
4. Alcohol density