A LONGITUDINAL STUDY EXAMINING CHILDHOOD TRAUMAS AND PROTECTIVE FACTORS ON CRIMINAL OFFENDING IN YOUNG ADULTHOOD

A Thesis by

Karson Quinn

Bachelor of Arts, Wichita State University, 2016

Submitted to the Department of Sociology
and the faculty of the Graduate School of
Wichita State University
in partial fulfillment of
the requirements for the degree of
Master of Arts

May 2018

A LONGITUDINAL STUDY EXAMINING CHILDHOOD TRAUMAS AND PROTECTIVE FACTORS ON CRIMINAL OFFENDING IN YOUNG ADULTHOOD

The following faculty members have examined the final copy of this thesis for form and content and recommend that it be accepted in partial fulfillment of the requirement for the degree of Master of Arts with a major in Sociology.

_____

Lisa Thrane, Committee Chair

_____

Jennifer Pearson, Committee Member

_____

Martha Smith, Committee Member

ABSTRACT

Three waves of The National Longitudinal Study of Adolescent to Adult Health (Add Health) 1994-2008 data were used to examine childhood traumas parental and school protective and risk factors. Deviance was a Wave IV binary measure constructed from an index of 12 items, such as stealing, using a weapon, and damaging property, to assess criminal offending in young adulthood. Using life course theory with a sample of 3,772 respondents, this quantitative analysis evaluated childhood trauma and the role of mediating factors on deviance in adulthood. Youth were about two times more likely to criminally offend in young adulthood after experiencing childhood trauma. Respondents who reported a higher attachment to school and teachers were more likely not to criminally offend as adults. There was evidence of partial mediation as school suspension (Wave I) and parental closeness (Wave III) reduced the effects of trauma on criminal offending. This study discusses policy implications and the role of childhood trauma as a public health problem calling for trauma-informed approaches to handling children acting out.

TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

LIST OF TABLES

CHAPTER 1

INTRODUCTION

The Centers for Disease Control and Prevention (CDC) and Kaiser Permanente found a group of childhood experiences (called Adverse Childhood Experiences or ACEs) to cause much harm to children and their later years of life. This landmark study found ACEs, including psychological, physical and sexual abuse, substance abuse in the home, mental illness of a household member, domestic violence of a mother or stepmother, and imprisonment of a household member to be linked to an increased risk of smoking, depression, suicide attempts, alcoholism, illicit drug usage, sexually transmitted infections, and other physical health related factors (Felitti et al., 1998). It was also found that with each additional co-occurring ACE, the risk increased.

Many people in the United States experience these traumatic events and more during childhood. Child maltreatment rose 3.8% from the Federal Fiscal Year (FFY) 2011 to FFY 2015 (USDHHS et al., 2017). During FFY 2015 an approximated 2.9 million children received an investigation, while more than 500,000 received an alternative response –usually for low- or moderate-risk families, an alternative response is to assess the needs of the family in order to connect them to services and resources. Furthermore, approximately 683,000 children nationally in FFY 2015 were victims of abuse or neglect; that is 9.2 victims per 1,000 children (USDHHS et al., 2017).

In addition to the life outcomes of the ACE study, childhood maltreatment events have been linked to future criminal offending (Currie and Tekin, 2011; Watts and McNulty, 2013). A large percent of youth involved with the juvenile justice system have a history of traumatic experiences, as well as those who are involved in the adult criminal justice system. Dierkhising and colleagues (2013) found that about 90% of juvenile justice cases involved youth who had experienced one or more traumatic events. A study of nine-hundred-eight court cases of childhood abuse or neglect found a 59% increase in juvenile arrest for those who suffered the traumatic experience of abuse or neglect (Widom and Maxfield, 2001).

While it has been shown that childhood trauma has increased the chance of a criminal life trajectory, it is important to note that not everyone affected becomes delinquent (Caspi et al., 2002).

Life course theory helps explain how various experiences across different life domains accumulate and influence the life course trajectory (Elder, 1998). A cumulative disadvantage effect has been noted as early antisocial behavior (associated with experienced physical abuse) predicting later "antisocial behavior in adolescence, and that, in turn, predicts antisocial behavior in adulthood" (Klika et al., 2013, p.1). One traumatic event can influence a cascade of following events throughout the life course. Experiences such as school suspension and childhood trauma, increase the likelihood of criminally offending in future years of life, while influences such as having a close, affirmative relationship with parents can decrease the likelihood of criminal offending. The predicted strength of childhood trauma on the life trajectory is analyzed in the current study by testing childhood traumas on young adulthood. The predicted strength of trauma on young adulthood comes from the idea of cumulative disadvantage. Additionally, school suspension is predicted to act as a further event in life contributing to cumulative disadvantage. While we cannot always prevent childhood trauma from occurring, we can foster protective influences to help survivors change their life trajectory set by trauma for a happier and healthier life.

A recent review of the literature has revealed a lack of research concerning the mediating factors that mediate the relationship between childhood traumas and later-life problematic behaviors (Watts, 2017) and offending. Social bonds could be a potentially important meditating link of childhood trauma and later delinquency (Watts, 2017). The current study not only tests the effect of childhood trauma exposure on criminal offending in young adulthood, but also attempts to aid in the gap of literature by testing potential mediating factors of social bonds, specifically from the domains of school and family.

To demonstrate the concepts of life course theory, Waves I, III, and IV of the National Longitudinal Study of Adolescent (Add Health) dataset were used in the current study of childhood experiences and young adolescent outcomes. Items about many aspects of life, such as personal traits and

behaviors, social life, and family life were collected. This study contributes to the existing literature by first examining the effects of childhood trauma on young adult offending. Second, it fills a gap in the literature on how social bonds such as parental closeness and school and family attachment may mitigate the effects of childhood trauma on adult criminal offending, and it further explores how risk factors like school suspension and school failure may be important intervening mechanisms in reinforcing cumulative disadvantage for youth who have experienced trauma.

CHAPTER 2

THEORY

Life course theory (LTC) is used to explain the importance of different aspects of life on the relationship between childhood trauma and young adult criminal offending, as well as the mediating factors of school and family on adolescent life. LCT is a multidisciplinary perspective (pulling from sociology, demography, history, anthropology, economics, and more) that recognizes the influences of different domains in life, such as school, home, health, culture, and the environment on different stages of the life span. Not only is each domain in life recognized for its own effect on individual's lives, but also is recognized for a comprehensive effect on the life trajectory –looking at each aspect of life and how, together, they affect an individual. The various domains in life are more or less influential depending on the life stage, such as adolescence or young adulthood. The biological, mental and societal development of individuals varies at different stages in the life span, and therefore, has different roles throughout one's life. It is important to note that individuals carry various roles at once (e.g. student and son), sometimes more at one stage in the life span than in others, but that individuals remain embedded in time.

2.1 Trajectories and Turning Points

With this in mind, it is important to note two basic concepts: trajectories and transitions (Sampson and Laub, 1997). Trajectories are "long-term patterns of behavior" explained as, "a pathway or line of development over the life span" (Sampson and Laub, 1997, p.142). Parenthood, work life, and criminal behavior are all given as examples of trajectories. For each social interaction, individuals are interpreting the situation and reacting through the knowledge of their past experiences, with each interaction resulting in an altered future transition (Elder, 1998). Transitions occur within trajectories and cover a shorter amount of time (Sampson and Laub, 1997). A transition is often marked by a life event, such as the start of puberty, graduation, or perhaps first arrest. Transitions can also be known as turning points (Elder, 1998), in which transitions are acting (informally or formally) as a change in life trajectory. A turning

point can come in the form of a specific occurrence or awareness in one's life, and always provides for a substantial change in direction of the life trajectory (Elder, 1998). Multiple transitions can be experienced at once, and effect the subsequent transitions in life. For example, the life transitions of beginning puberty and starting public school (rather than continuing homeschool) can both occur at the same time in life, and both (together or individually) would result in changes to subsequent life events. Sampson and Laub emphasize turning points in criminal trajectories such as how a stable home and school environment has the potential to deter delinquency as do marriage and work in the adult life stage. Stability in life brought by a stable home or marriage can have the power to keep (or turn) the life course in a pro-social direction. They also mention the timing of such stability or attachment in life matters when discussing the most effective preventative influences (Sampson and Laub, 1997).

2.2 Cumulative Disadvantage

Cumulative continuity is explained as the accumulation of social interactions influencing a person's functioning and behavior, and further, the circular effect of a person influencing their social environment (Elder, 1998). Simply, cumulative continuity is a reciprocal interaction between the individual and the social environment. Cumulative continuity can have a negative or positive connotation. Cumulative advantage refers to the reinforcing social environment and individual behavioral interactions producing a positive or socially acceptable life trajectory. Competence and/or social status is rewarded by others with opportunities, and opportunities lead to a more competent, pro-social individual. Thus, the reinforcing social environment on the individual, and visa versa, accumulates advantages in life. The antithesis of this is known as cumulative disadvantage. For example, problem youth receive school suspensions, which further intensify problem behaviors. Rather than correcting problem behavior, school suspensions act more as a reinforcement of said behavior, and visa versa (problem behavior reinforces the suspension). This is similar to the effects of labeling theory, which suggests one's actions and behaviors are due, in part by, the labels placed on them in society (such as delinquent). This leads to cumulative

disadvantage and consequently leads to further delinquency and later criminal involvement. Thus, reinforcing the school-to-prison pipeline (Wolf and Kupchik, 2017).

2.3 The Importance of Timing

Three dimensions of time affect the life course: historical, generational, and individual (Bengston and Allen, 1993). Historical time is more of a macro-level factor, referring to the influences of events happening in the broader social setting. Discussing the influences of major economic and social changes on society, families, or individuals would be an example of using historical time. Johnson, Crosnoe, and Elder, Jr. (2011) use LCT to discuss the influences of economics on educational attainment and family life. They reiterate that the U.S. economy has majorly shifted from manufacturing to service and information. This shifts the middle-class into working some higher paying jobs, but mostly lower paying jobs with instability and fewer-to-no benefits. As the middle-class has grown increasingly smaller, families have grown to aspire to have a college degree for a better job though the cost of such degrees has increased. Public financial support has decreased, such as Pell Grants to individuals, and the allocation of taxes to educational institutions to keep educational costs affordable. With this historical time in mind, one can see why people stay in school longer, putting off marriage, and therefore remaining semi-dependent upon their parents longer than previous generations (Johnson et al., 2011). Current discussions including terms of *extended adulthood* and *delayed adulthood* speak to the "profound implications for what preparedness for adulthood now entails" (Johnson et al., 2011, p.3). Generational time refers to the events and transitions across the generation in which the individual is situated. People share experiences with others who are their age or in their age cohorts, such as Generation X. Respondents in the dataset used in the current project were born in Generation X, between 1965 and 1980. This generation is characterized as more accepting and diverse, compared to preceding generations, having been present for the legalization of gay marriage and having a bigger minority population. Generation X is characterized by lower birth rates compared to both the preceding and following generations surrounding them.

Furthermore, this generation is characteristic of a further decline in marriage rates and of having any religious affiliation (Pew Research Center, 2015).

Individual time refers to life events, occurrences and achievements on a micro-level. One must remember the age of the individual when considering the individual timing of an occurrence. This is important, again, because of the emotional, intellectual, and biological capabilities and developmental processes associated, which vary between different ages. For example, one must think about age when thinking about the onset of childhood maltreatment because of the impressionability of younger children. Widom and Maxfield (2001) have shown that younger age, or earlier onset, of childhood maltreatment results in more frequent and earlier arrests, and nearly twice as many committed offenses. For these reasons, they stress the importance of early childhood intervention.

2.4 Social Bonds

Various social bonds accumulate as individuals age into different roles. Both social bonds and one's roles in life play a huge function in life trajectory. The type of social bond (whether positive or negative, strong or weak) it could influence the life trajectory. A study by Hill, Blokland, and van der Geest (2016) studied the consequences of emerging adults spending time in adult roles on the desistance from crime. They found that the more time spent in adult roles (i.e. having a romantic relationship, employment, and/or living independently from their parents) provided for less delinquent behavior (Hill et al., 2016). The inverse of this was also to be true –less time spent in adult roles resulted in more reported delinquent behavior.

CHAPTER 3

LITERATURE REVIEW

3.1 Trauma

Life Course Theory (LCT) recognizes different paths to criminality (Sampson and Laub, 1997) one of which is the experience of trauma. Trauma can act as a turning point, especially when experienced multiple times or at young ages. Traumatic events affect one throughout the life span. Traumatic events include, but are not limited to, child maltreatment (physical, sexual or emotional abuse and neglect), domestic violence, death of parent/guardian, witnessing violence, incarceration of a parent/gaurdian, substance abuse in the household, and severe mental illness in the household (Anda et al., 2002; Horan and Widom, 2015; London et al., 2017; Levendosky et al., 2002; Dierkhising et al., 2013; Bethell et al., 2017). Instances of physical, sexual, and psychological or emotional abuse and neglect are collectively labeled *maltreatment* (USDHHS et al., 2018). Many studies concerning childhood traumas use the label Adverse Childhood Experience (ACE), and have shown an association between the prevalence of ACEs and a wide variety of negative outcomes on health, mental illness, life achievement and behavior (Centers for Disease Control and Prevention and Kaiser Permanente, 2016). Previous research has shown about two-thirds of participants reporting at least one ACE, with more than one-fifth of participant reporting three or more ACEs (Centers for Disease Control and Prevention and Kaiser Permanente, 2016).

Exposure to traumatic events is most prevalent among juvenile justice involved youth, with about 90% having experienced one or more traumatic events (including ACEs and maltreatment) (Dierkhising et al., 2013). The 2016 National Survey of Children's Health revealed 34 million (46.3%) children (0-17 years old) have experienced at least one of nine traumatic ACEs, and 21.7% have experienced two or more traumatic ACEs in their lifetime (Bethell et al., 2017). Further, the 2017 National Survey of Children's Health revealed 9.1% of children were subject to childhood maltreatment (USDHHS et al., 2018).

3.2 Traumas and Crime/Delinquency

3.2.1 Trauma as a Turning Point

For the current study, trauma serves as a turning point, setting the life trajectory towards criminal behavior. Many studies have demonstrated the increased likelihood of criminal behavior from childhood maltreatment (Derzon 2010; Widom and Maxfield 2001; Smith et al., 2013; Shin 2016; Williams 2007; Mersky 2012; Basto-Pereira et al., 2016). A widely noted longitudinal study by Widom and Maxfield (2001) also analyzed the effects of child maltreatment, more specifically child abuse and neglect. Nine-hundred-eight court proven cases of childhood abuse and neglect and 667 control cases were tracked for twenty-five years through official criminal records. They found a 59% increase in the likelihood of juvenile arrest for children who suffered abuse and or neglect, along with a 28% increase of arrest in adulthood, and a 30% increase in arrest for violent crime (Widom and Maxfield, 2001). Additionally, maltreated children were found to commit almost twice as many offenses as those without cases of maltreatment (Widom and Maxfield, 2001). Other research supporting the finding that childhood maltreatment predicts criminal offending comes from a 2013 longitudinal study of 846 adolescents (14-18 years old in Phase 1, and 21-23 years old in Phase 2) (Smith et al., 2013). Their findings show that experiencing at least one substantiated incident of maltreatment (such as physical, sexual, or emotional abuse, or neglect) between birth to seventeen years old produced an increased likelihood of arrest and violent offending in young adulthood (Smith et al., 2013). Fagen (2005) also found a strong link between childhood maltreatment and criminal behavior in adulthood. Derzon's 2010 meta-analysis of 119 longitudinal studies revealed that the trauma of child maltreatment had stronger associations with criminal and problem behaviors than with violence and aggression.

Retrospective studies of incarcerated individuals have also found traumas to predict criminal behavior (Dierkhising et al., 2013; Fox et al., 2015; Baglivio et al., 2015). As part of their study on

children and adolescents, Dierkhising et al. (2013) found juvenile justice involved youth to have high rates of exposure to various traumas, including but not limited to, physical abuse/maltreatment (38.6%), domestic violence (51.6%), emotional abuse/psychological maltreatment (49.4%), and community violence (34%). Using Florida juvenile offenders, Fox et al., (2015) found ACEs to be more prevalent in serious, violent, and chronic (SVC) offenders, compared to "one and done" (O&D) offenders. Moreover, almost all ACE components, (including physical abuse, physical neglect, witnessing household violence, household substance abuse, household member incarceration) presented a 21-26% increase in the risk of SVC offending (Fox et al., 2015). Another study using Florida's juvenile offenders also found that higher ACE scores predicted younger age at the time of the first arrest, as well as higher total number of arrests in adolescence (Baglivio et al., 2015).

3.2.2 Cumulative Disadvantage

LCT recognizes cumulative disadvantage -the compounding effects of trauma. Cumulative disadvantage is affected by individual choices and the environment as a reciprocal, sustaining mechanism of disadvantage (Elder, 1998). Individual behaviors and attitudes are affected as the environment produces stressors or traumas. More specific to the current project, it has been shown that co-occurring traumas even further increase the likelihood of deviant behavior and criminal offending (Horan and Widom, 2015). A cohort design study over thirteen years used children with substantiated abuse and/or neglect cases and a matched control group to analyze cumulative risk exposure on adulthood areas of psychosocial adjustment, including educational attainment, mental health, and criminal behavior (Horan and Widom, 2015). The cumulative risk measure used included the following items: "parental divorce, arrest [of a parent], drug/alcohol abuse, sibling arrest, sibling drug/alcohol abuse, single-parent home, deceased parent, large family size (i.e., five or more children), homelessness" removal from the home, "family welfare receipt, parental unemployment, parental school dropout before completion of high school," child abuse and child neglect (Horan and Widom, 2015, p.932). Together as the cumulative risk index, these items significantly predicted criminal arrests in adulthood (Horan and Widom, 2015).

3.2.3 Timing of Trauma and Crime

As LCT states, individual time is important to note when talking about the outcomes of trauma. In support of this, Derzon's meta-analysis of 119 longitudinal studies revealed that maltreatment as a child had a stronger association with criminal behavior when the trauma occurred at younger ages. In contrast, problem behavior and violent behavior showed a stronger effect of child maltreatment when children were older. Therefore, an individual's age does make a difference when discussing future antisocial outcomes.

3.3 Trauma and Crime: Social Bonds as Intervening Mechanisms

While LCT can be used to help explain the path to criminality, it can also be used to explain the change in path away from criminality. Turning points occur throughout the life span within various domains, changing the life trajectory for better or worse. Especially when discussing adolescent youth, one must account for the influences of two major domains: family and school. Family and school domains have both demonstrated the ability to alter the life trajectory, or to provide for protective factors of experienced trauma. In the current study, LCT is used to show the effects of social bonds as predicted protective factors from the domains of family and school. Previous research has shown bonds to school, such as school attachment, school connectedness, and academic performance, to mitigate affect the life trajectory (Savolainen et al., 2011; Dornbusch et al., 2001; Crooks et al., 2007; Hoffman et al., 2013; Watts, 2017). Familial factors have also been shown to influence the life course trajectory, such as familial attachment, maternal attachment, emotional attachment to family, parenting style, and parental supervision and involvement (Sampson and Laub, 1997; Sogar, 2017; Schroeder and Mowen, 2014; Menting et al., 2016; Derzon, 2010). The current study analyzes school and familial social bonds to produce a predicted mitigation of the influences of trauma.

LCT explains the importance of social bonds, or pro-social attachment, on the life trajectory (Elder, 1998). Adolescents need positive and strong social bonds, especially when they have been

exposed to traumatic events. Familial and parental bonds are important to have, as well as bonds at school. A lot of traumas are experienced from within the family, therefore outside influences (i.e. school) are important for a positive life trajectory. Weak social bonds to school could further amplify the risk of future criminal behavior. Academic influences such as school attachment and academic performance have been recognized to influence criminality (Savolainen et al., 2011; Dornbusch et al., 2001; Crooks et al., 2007). In their longitudinal study, Dornbusch et al. (2001) found that attachment to school and teachers tended to reduce the frequency of deviant behavior, including delinquency and violent behavior. With 4,645 adolescent youths, Savolainen et al., (2011) found that school outcomes of poor academic performance and reduced school attachment resulted in increased risk of criminal conviction from mid- to late-adolescence. Like Savolainen et al. (2011), the current study looks as the influence of school factors such as academic performance and school attachment to predict the life trajectory of criminal behavior in later-life.

A study showing the predictive relationship of childhood maltreatment on criminal and violent behaviors presented mediation from a school protective index, but not from each individual factor. The school protective index included self-reported grades, GPA, school commitment, attachment to teacher, educational aspirations, college expectation, having a high school diploma, and school attendance (Smith et al., 2013). Bivariate analysis showed that only educational aspirations, college expectation, GPA, high school diploma and the full school protective index provided for a significant association with childhood maltreatment (Smith et al., 2013). Furthermore, a multivariate analysis showed a marginal ($p<.10$), partial mediation from GPA on arrest. Lastly, a poorer GPA, or academic achievement (Hoffman et al., 2013; Savolainen et al., 2011) and substantial academic problems (Dierkhising et al., 2013) have been documented to be inversely correlated with delinquent behavior in later-life. Although for individuals who experienced high frequencies of physical and sexual abuse in childhood, Wright et al., (2016) found that graduating from college acted as a protective factor from violent offending (badly hurt someone in a fight, or use or threat of the use of a weapon to get something or to fight with) in early adulthood. Wolf

and Kupchik (2017) found that being suspended from school in childhood significantly increased the likelihood of experiencing incarceration, criminal involvement, and criminal victimization in adulthood.

Watts's research (2017) analyzed the mediating factors of three types of social bonds (maternal bond, school attachment, and religiosity) on the connection between child abuse/neglect and delinquency. Each measure of social bond produced significant mediation for females, but each did not for males (Watts, 2017). Overall, studies show an inconsistent effect of school mediating factors on later criminal/ delinquent behavior. Some studies show no mediating effect, while others show a partial to strong mediation.

Crooks et al. (2007) analyzed mediating school factors (school connectedness; school size and location; academic success; school safety and connectedness) on childhood maltreatment (witnessing domestic violence, physical, sexual, emotional abuse and emotional neglect) and violent delinquency (fighting, carrying a weapon for defense or with intent, threatened someone for money, attempted forced sex, and arson). Like other studies, they found that childhood maltreatment predicted violent delinquency, and found that students at schools with greater safety were less likely to commit violent delinquent acts (Crooks et al., 2007). Furthermore, they found that violent delinquency following childhood maltreatment was partially explained by the school which the youth attended. This shows that the school environment, including school connectedness (an example of social bonds), may have an effect on later-life outcomes of delinquency.

Furthermore, a study using a longitudinal dataset of three waves also yielded supporting results showing that maltreated adolescents had higher levels of delinquency (within the last year) and lower levels of school attachment when compared to non-maltreated adolescents, even though school attachment (attachment to teachers and school, and perceived school environment) decreased over time for both groups (Lee et al., 2018). The decrease in school attachment over time might be attributable to the age of the sample. Participants were interviewed at baseline in grades 4, 5 and 6, then interviewed each year for three years after. LCT would suggest the decrease in school attachment would be

attributable to the subjects' age. As individuals grow older, new attachments and domains in life become more influential. Both Smith et al. (2013) and Lee et al. (2018) showed a decrease in the level of mitigation school factors had on maltreatment in terms of later antisocial or criminal behavior. Lee et al. (2018) also showed a lessening influence of school attachment on individuals without any background of maltreatment.

Another important domain in life is that of family (Sampson and Laub, 1997; Sogar, 2017; Schroeder and Mowen, 2014; Menting et al., 2016). Family members, parents and household members all have an impact on one's life trajectory. To examine the LCT's proposal of family measures influencing life outcomes, Laub and Sampson (1988) conducted more sophisticated analysis of Glueck's data. They found that weak emotional attachment to the family increased delinquency, suggesting that socialization of youth through the family has an impact on juvenile conduct problems (Laub and Sampson, 1988). Also important in LCT is the timing of events, and the influence of one event effecting another. For example, a change in parenting style could initiate the onset of delinquency, just as the onset of delinquency could change the style of parenting. Change in maternal attachment levels has been shown to influence parenting style transitions, more specifically the transition from authoritative parenting to uninvolved parenting (Schroeder and Mowen, 2014). This parenting style shift is connected with the onset of delinquent offending in offspring (Schroeder and Mowen, 2014). This suggests that changes in maternal attachment can lead to delinquency in youth.

Resilience factors, or factors that help shield the life trajectory from the effects of trauma, are noted by Afifi and MacMillan (2011) to include family factors. Their review of 27 studies on resilience factors showed that "family-level factors of stable family environment and supportive relationships appear to be consistently linked with resilience across studies" (Afifi and MacMillan, 2011, p.266). More specifically, pro-social attachment to members within the family or household serves as a very important influence for children on life outcomes. A longitudinal study using nationally representative data (Add Health), found that overall adolescent attachments to family (parent-family connectedness and parental

closeness) tended to reduce the frequency and intensity of deviant behaviors (cigarette and marijuana use, alcohol use, delinquency, and violent behavior) when compared to attachment to school (Dornbusch et al., 2001), showing the importance of analyzing familial attachment factors on life course trajectory.

Lowell et al., 2014 found that attachment, especially to mothers and peers, produced a significant influence on later-life emotional and behavioral outcomes; expressing that attachment to mothers and peers serve as mitigating factors on outcomes of childhood maltreatment. Another study concerning parental attachment used nine items about the adolescents' feelings concerning their parents, such as feeling close to their parents, wanting to be liked by their parents, the importance of parental approval, and finding that talking to parents was helpful (Walters, 2018). By using longitudinal data of 2,252 cases of 10th through 12th grade students, Walters (2018) showed the significant, inverse relationship between parental attachment at Wave I (10th Graders in1979) and later delinquency at Wave III (12th Graders in 1981); higher levels of parental attachment was associated with lower levels of delinquency. Understandably, a lack of attachment between parent(s) and their child is associated with delinquency (Sogar, 2017). Both LCT and previous research have shown the significance of social bonds, and the effects of their absence.

Additional outcomes from Derzon's (2010) previously mentioned meta-analysis of 119 longitudinal studies reveals findings about familial influences on later-life problem behavior. Notable for this project are the familial influences of parental supervision and involvement (as indicated by the amount of time, involvement and supervision given to the child by the parent) and parental warmth and closeness (as indicated by the amount of conflict, acceptance and warmth in the child-parent relationship) (Derzon, 2010). The parental supervision and involvement, and the parental warmth and closeness indicators both displayed a statistically significant relationship with future problem behavior, criminal behavior, aggressive behavior, and violent behavior from a child in later-life (Derzon, 2010).

Studies have shown greater levels of parental control and parental trust to be associated with less violent behavior in 1,420 students 14-18 years old (Melotti et al., 2018). Both parental measures were

measured by adolescents' perceptions. Specifically, Melotti at al. (2018, p.351) measured parental control with four items about "perception of control exercised by parents in relation to leisure activities, evenings out and use of money." Parental trust was measured with six items "of how much the parents trust them" (Melotti et al., 2018, p.351).

Other longitudinal parenting influences, such as nurturant parenting and parent-child relationship, presented the effects of positive social adjustment on the presented risks of neighborhood disadvantage on 226 urban, low socioeconomic status boys from infancy to adolescence (Vanderbilt-Adriance and Shaw, 2008). The measure of nurturant parenting at age two included items on "maternal response to child misbehavior" and "communicative and affective parent-child interactions" (Vanderbilt-Adriance and Shaw, 2008, p.892). The parent-child relationship quality was comprised of 15 items assessing the "maternal perception of openness and conflict in the relationship with their child" between ages five and six (Vanderbilt-Adriance and Shaw, 2008, p.895). Results showed nurturant parenting and positive parent-child relationship quality were significantly related to later-life positive social adjustment, as measured by the presence of social skills and the absence of disruptive behavior (Vanderbilt-Adriance and Shaw, 2008).

Not only is positive parental interaction influential, but so is negative parental interaction. Caregiver antisocial/criminal behavior has been shown to link to youths' later-life conduct problems (Simons et al., 2007). Caregiver antisocial/criminal behavior was assessed with a measure of items regarding the participation within the previous year of "lying, stealing, skipping work, physical assault, threatening someone with a weapon, and hitting their partner" (Simons et al., 2007, p.494). Caregivers reporting antisocial/criminal behavior were positively related to their child having conduct problems.

Overall, attachment to parents serves as a protective factor against delinquency and criminal behavior. However, only one study reviewed examined the mitigating effects of social bonds on childhood maltreatment on future criminal behavior. In a recent review of the literature, however, Watts (2017) illustrated the dearth of research specifically on social bonds mediating the relationship between

childhood trauma and later-life criminality. Because there are many influences on the life course trajectory, and because influences do not affect all people the same, parenting and familial factors do not always show high significance. For example, Watts's (2017) research concerning the mediating effects of social bonds on the relationship between child maltreatment and delinquency, included three measures of social bonds: maternal bond (maternal attachment and engagement), school attachment (respondent's degree of commitment to their school, teachers, and classmates), and religiosity (concerning the level of belief, involvement, and attachment to religion). Findings reveal the significant mediating results of social bonds for females, but not males. This suggests that males and females respond differently to approaches aimed at mitigating childhood trauma.

3.4 Current Study

The current study attempts to reinforce the literature on the relationship between childhood trauma and later criminal behavior. Life course theory (LCT) provides a framework for discussing the path to deviance with a holistic approach, accounting for the multiple influences in life. The current thesis examines the research on childhood traumas leading to young adult criminal offending. Childhood trauma is expected to have lasting effects because of cumulative disadvantage, and because of the timing of the trauma occurrence (occurring within childhood). Therefore, it is posited that individuals who experience trauma in childhood will have an increased likelihood of criminal offending in young adulthood. Furthermore, the cumulative disadvantage of school suspension along with childhood trauma is predicted to increase the likelihood of later criminal offending. Unique to this study is the range of time examined, covering 14 years from childhood into young adulthood. Specifically, this study analyzes the relationship of exposure to trauma in childhood, and the later outcome of criminal offending in young adulthood.

This thesis also investigates the influences of the school and family domains on the criminal trajectory. Like Elder (1985), Sampson and Laub (1997, p.142) "differentiate the life course of individuals on the basis of age and argue that the important institutions of both formal and informal social control vary across the life span." For example, school is an important institution in a child's life, but is

not for a graduated, working adult. Formal sanctions (such as suspension from school) and informal sanctions (such as complements from teachers or familial support) attempt to regulate behavior and crime. Formal and informal sanctions are used to regulate crime. The trajectory of criminal behavior in young adulthood will be influenced by familial social bonds and social bonds to school and teachers. Using life course theory (LCT) and previous research, we know that social bonds from school and family could produce mediating effects on this relationship, though little research has been published on the mediating effects of familial factors. To fill the gap in the literature, the second part of this research will be analyzing mediating factors from school and family to help determine their effect on the relationship between trauma and later criminal offending.

This research, like previous research, maintains that change in life occurs over time rather than at one specific moment (Sampson and Laub, 1997; Pickles and Rutter, 1991; Rutter 1989; Clausen 1993). As individuals grow older, it is expected that life trajectories are reinforced with life transitions or redirected with turning points. The individual timing and life transition from adolescence to young adulthood is speculated to shift focus from an influence of school factors to a stronger influence in familial factors in young adulthood, meaning that familial factors become more influential the older one grows, while school factors become less important. Protective factors (i.e. social bonds to school and family) will mitigate the effects of childhood trauma on criminal offending in young adulthood, working to prevent the life trajectory of young adult criminality following childhood traumas. School failure (suspension and low GPA) will be found to partially mediate the relationship between trauma and young adulthood crime due to the implications of cumulative disadvantage.

Lastly, LCT examines the constantly changing and compounding of structures and processes associated with development. When analyzing development, it is important to think of the location an individual or group has within the broader social structure (Bengston and Allen, 1993). Members of minority groups in society are seen and treated differently from members of the majority in society, as well as from other minority group members. Members in society also treat gender differently. When

compared to women and girls, men and boys are expected to show a smaller range of emotions. This could lead to more externalizing of emotions in men and boys. Also important to note are the meanings associated with different life transitional times, and "the interplay of macro- and micro-levels of development" (Bengston and Allen, 1993, p.472). Late adolescent life, for example, is marked with a transition out of high school, and socially associated with a more independent life. The change in structures (e.g. school to work) and processes (e.g. playing with friends to employment) becomes more diverse with age in the social context, and is continuously changing.

LCT is a complex theory integrating various disciplines and perspectives, while also keeping in mind the bigger picture of development. It is posited that individual characteristics such as age of maltreatment onset, race/ethnicity and sex, as well as aspects of parental financial well-being and having committed delinquent acts in childhood all contribute to the outcome of young adult criminal offending. These characteristics are used as control variables in the current study.

CHAPTER 4

THEORETICAL MODEL AND HYPOTHESES

4.1 Theoretical Model

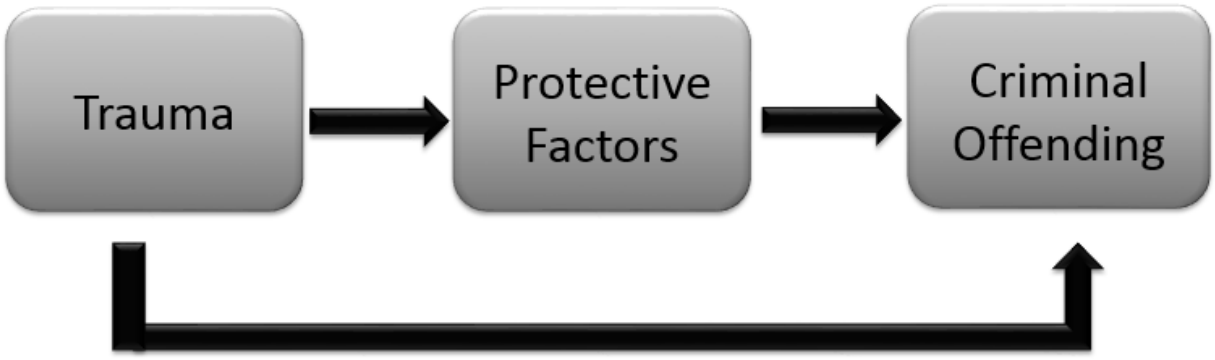

Figure 1

4.2 Research Questions

1. Do childhood traumas increase the likelihood of criminal offending in young adulthood?
2. Do school and familial factors show an influence on the life trajectory?
3. Will school and family factors diminish the impact of childhood traumas on the likelihood of criminally offending in young adulthood?

4.3 Discussion of Research Questions

The predicted relationships of childhood trauma on young adult criminal offending, and of the mediation of protective factors are both illustrated in the logic model. Wholly, the model displays childhood trauma influencing later criminal offending in young adulthood. Included are familial and school protective factors, which are predicted to mediate the predictive strength that childhood trauma has on young adult criminal offending. This study includes one dichotomous dependent variable from Wave

IV, criminal offending in young adulthood, as the outcome of criminal behavior. Childhood trauma serves as the main independent variable, while school and familial protective and risk factors are contributing independent variables. A mitigating effect is predicted for attachment to school and teachers, perceived familial support, parental involvement, and parental closeness. A cumulative disadvantage effect is expected from school suspension, worsening the childhood trauma effect on young adult criminality.

4.3.1 First Model Segment

The first model segment depicts childhood trauma influencing criminal offending. More specifically, it is predicted that childhood trauma will increase the likelihood of criminal offending in young adulthood. Each item within the trauma measure has been shown to influence criminal offending in previous research. Items were put together into a binary variable to act as a collective trauma measure, rather than comparing the effects of individual factors. This allowed a larger group of people with histories of traumatic experiences to be analyzed. Past research has proven childhood traumas to predict a higher risk for delinquency and criminal offending, compared to no trauma exposure in childhood. The current study attempts to recreate these findings.

Hypothesis 1: Respondents with a reported childhood trauma exposure will be more likely to criminally offend in young adulthood, compared to their counterparts.

4.3.2 Second Model Segment

The second model segment depicts protective factors influencing the relationship between childhood trauma and criminal offending in young adulthood. Familial and school protective factors are predicted to mitigate the effects of childhood trauma on young adult criminal offending, making the criminal offending outcome less likely to occur compared to trauma exposure without protective factors present. Both familial influences and school factors have been previously shown to affect criminal behavior negatively, though research on familial influences mediating the trauma/offending relationship is

scant. This study attempts to contribute to the literature by including familial factors as mediators. For these reasons, the current study is designed to support the below hypothesis.

Hypothesis 2: The presence of school and/or familial factors will mediate the relationship between reported childhood trauma exposure and young adult criminally offending.

CHAPTER 5

METHODS

5.1 Data and Sample

All data used came from the National Longitudinal Study of Adolescent to Adult Health (Add Health) dataset. Add Health is a longitudinal study, in which data were collected in four waves between 1994 and 2008. The sample of more than 6,504 7^{th} to 12^{th} grade students were recruited through a stratified, random sampling of schools in the United States containing an 11^{th} grade. The first and second waves of data contain information about different aspects of the adolescents' lives, including questions about their family, peers, schools, community, health behaviors and personal traits. Wave III of the data includes information about the transition from adolescence to adulthood, such as the respondents' experiences, behaviors, and health. Wave IV includes data on the social, behavioral, and biomedical measures of the respondent in order to examine developmental and health trajectories from the respondents' lives (Harris and Udry, 1994-2008).

Waves I, III, and IV were used for the data analysis of this study, and were all weighted by the post-stratified untrimmed longitudinal grand sample weight developed specifically for Waves I, III, and IV. The sample was restricted to the non-institionalized population and respondents who completed data on all study variables. The total sample size for the current study was 3,772. This drop in sample size from the original 6,504 cases from the public-use data is largely due to removing all cases that had missing data which may influence the generalizability of the findings. No imputation was used.

5.2 Variables

5.2.1 Dependent Variable

Wave IV of the Add Health dataset included 11 questions about how often certain criminal activities occurred within the last 12 months of the Wave IV interview. These questions included the

actions of: deliberately damaging property, stealing something worth more than $50, burglarizing a building, threating to use a weapon, selling marijuana or other drugs, stealing something worth less than $50, buying, selling, or holding stolen property, using someone else's credit card, bank card, or automatic teller card without their permission or knowledge, deliberately write a bad check, and getting into a serious fight.

Each item was coded so that 1 indicated the act occurred at least once within the past 12 months, and 0 indicated that the respondent had not committed the criminal behavior within the past 12 months. All eleven items were combined to create a binary index where 1 indicated they had committed at least one of the criminal offenses within the past 12 months, and 0 indicated the respondent had not committed any of the criminal offense within the past 12 months.

5.2.2 Independent Variables

The Childhood Trauma measure was constructed from nine items from the Add Health dataset. Three items from Wave III included neglect (how often had your parents or other adult care-givers not taken care of your basic needs, such as keeping you clean or providing food or clothing), physical abuse (how often had your parents or other adult care-givers slapped, hit, or kicked you), and sexual abuse (how often had one of your parents or other adult care-givers touched you in a sexual way, forced you to touch him or her in a sexual way, or forced you to have sexual relations). Emotional abuse (before your 18th birthday, how often did a parent or other adult caregiver say things that really hurt your feelings or made you feel like you were not wanted or loved) collected at Wave IV was also included. The items were originally coded as 1 representing one time, 2 representing two times, 3 representing three to five times, 4 representing six to ten times, 5 representing more than 10 times, and 6 representing this as never happened. Based on London et al. (2017), a binary was created from each item and coded so 0 meant never happened, and 1 meant one or more times.

Wave I of the Add Health dataset included four items asking about the frequency of having been threatened (threatened with a knife or gun) and witnessing (saw someone shoot or stab another person) or experiencing violence (been cut or stabbed and been shot) within the past 12 months. The items were individually coded as 0 meaning never, 1 meaning once, and 2 meaning more than once. Based on London et al., 2017, the two items listed for experiencing violence were combined into one binary and coded so 0 meant never happened, and 1 meant one or more times. The remaining measures threatened with a weapon and witnessing violence were coded in the same manner.

Four items about parental incarceration were included in Wave IV of the dataset: has/did your biological mother or father ever spent/send time in jail or prison, and has/did your mother figure or father figure ever spent/spend time in jail or prison. Items were originally coded as 0 no, 1 yes. Adapted from London et al. (2017), these items were combined into 1 parental incarceration binary and coded as 0 indicating no parent was/is incarcerated, and 1 indicating at least one parent was/is incarcerated.

An item from Wave I parent questionnaire asked the parent who completed the survey how often in the last month have he/she had five or more drinks on one occasion (1 never, 2 once, 3 twice, 4 three times, 5 four times, 6 five or more times). Based on London et al. (2017), the item was recoded into a binary where 0 meant never and 1 meant one or more times.

The childhood trauma variable was adapted from London et al. (2017), which was comprised of the nine previous binaries (neglect, physical abuse, sexual abuse, emotional abuse, experienced violence, witnessed violence, been threatened, parental incarceration, and parental binge drinking). This binary was coded so that 0 meant no traumas were experienced, and 1 meant at least one trauma was experienced.

A school suspension variable was used from Wave I of the Add Health dataset. The item asked if the respondent has ever received an out-of-school suspension, and was coded as 0 representing no and 1 representing yes. Wave I provided nine items about attachment to school and teachers. In order to adapt Newsome and Sullivan's (2014) attachment to school variable, the first four variables (getting along with

teachers, trouble paying attention, trouble getting homework done, and trouble with other students) were reverse coded to the following: 1 everyday, 2 almost every day, 3 about once a week, 4 just a few times, and 5 never. The five questions (feel close to people at school, feel part of your school, happy at your school, teachers treat students fairly, and feel safe in your school) were coded from 1 strongly disagree to 5 strongly agree. All nine items were combined and summed for the final measure after a reliability test produced a Cronbach's Alpha of .781. Wave I of the Add Health data included self-reported letter grades in English, Math, History, and Science class. The items were coded as follows: 1 A, 2 B, 3 C, 4 D or lower, 5 didn't take this subject, 6 took subject but wasn't graded this way. Each item was recoded into the following: 1 "D or lower", 2 "C", 3 "B", 4 "A", and 5 and 6 were coded as missing. To create a grade point average (GPA) variable, an index was made by calculating the mean of each grade combined. If a respondent had at least two out of four grades, then the mean GPA was computed.

The perceived familial support variable from Pearson and Wilkinson (2013) was replicated by using five items from Wave I, including, how much do you feel your parents care about you, how much do you feel that people in your family understand you, how much do you feel that you want to leave home, how much do you feel that you and your family have fun together, and how much do you feel that your family pays attention to you. All items were coded on a Likert-scale from 1 (not at all) to 5 (very much), and 6 (does not apply). The item about leaving home was reverse coded so that 1 meant very much and 5 meant not at all). All items were coded so 6 was a missing value. After the reliability test produced a Cronbach's Alpha of .759, all items were combined with a mean to create the final familial support scale.

Items about parental involvement were included in Wave I of the Add Health dataset. A parental involvement variable was replicated from Pearson and Wilkinson (2013). The items included ten questions asking about the events (gone shopping, played a sport, attended a religious service, went to a movie, and worked on a school project) the respondent has done with their mother and with their father in the past four weeks. Originally the items were coded as 0 representing not having done the activity and 1

representing having done the activity. A mother involvement index was created by summing the items about the mother. A father involvement index was created as well. The average value of each parent indexes was utilized to create the final parental involvement measure. For two-parent families, the measure represents the average amount of parental involvement.

Items about parental closeness were included in Wave III of the Add Health dataset. The parental closeness variable was replicated from Pearson et al., 2017 and included four items about the mother and father figures. The items asked how much the respondent agrees or disagrees with the following according to each parental figure: you enjoy doing things him/her, he/she is warm and loving toward you, and you feel close to him/her. Items were reverse coded to 1 strongly disagree to 5 strongly agree. Items about the father figure were combined to create a father closeness index with a range from 1 to 5. A mother closeness index with a range of 1 to 5 was also created from combining items asking about the mother figure. The values from each parent figure were averaged together to create the final parental closeness measure.

5.2.3 Control Variables

A binary was created from the sex question in Wave I of the Add Health data. This item was originally coded so that 1 indicated male and 2 indicated female. The binary created from the sex question is coded so that 1 indicates male and 0 indicates female.

Wave I also included questions, such as what was the respondents' birth year, what was the respondent's birth month, what year did the interview take place, what month did the interview take place, and what day of the month did the interview take place. These items were used to calculate the age of each respondent. The ages in the final variable ranged from eleven to twenty-one years old at the time of the Wave I interview.

Wave I included questions about race and ethnicity. The ethnicity question was coded so that 1 represented [1]Latinx, and 0 represented all non-Latinx. The final race/ethnicity variable was created from the Latinx variable, a multiracial identity variable, and from those who identified with only one race. The final measure was coded so that 1 represented [2]White and Asian, 2 represented Latinx, 3 represented Black, 4 represented Other (including Native Americans). Each race/ethnicity category was made into a separate binary.

Wave I of the Add Health dataset included ten questions about having ever committed the following delinquent acts: wrote graffiti, damaged property, shoplifting, got into a serious fight, hurt someone badly enough to need bandages or medical care, stole a car, stole something worth more than $50, burglarized a building, and threatened to use a weapon. Each item was coded as 0 "never", 1 "one or two times", 2 "three or four times", 3 "five or more times". All items were recoded into binaries where 0 represented never and 1 represented having committed the act at least once in the past twelve months of the Wave I interview, and then added together to make the final Wave I delinquency index.

Wave I included 2 items about whether the residential parents were currently receiving public assistance. Each item was coded as 0 meaning no and 1 meaning yes. A binary was created from the two items to show if at least one parent had received public assistance during Wave I interviews; 1 representing yes and 0 representing no.

5.3 Analysis Plan

The analysis plan was designed to address the primary research questions: 1) Does childhood trauma produce an increased likelihood of criminal offending in young adulthood? and 2), do school and family factors mediate this relationship, decreasing the effects of childhood trauma? The analysis

[1] Language can see seen as perpetuating gender inequality. To combat this problem, a trend of using the term *Latinx* over *Latino* emerged. The current study also uses the term *Latinx* to describe both Latinos and Latinas without showing a dominance of one gender over another.
[2] The combination of Whites and Asians in the current study stems out of the "model minority" status of Asians in the U.S. While Asians are a minority, they tend to show higher levels of achievement in society –showing a likeness to being White in the U.S.

evaluated univariate statistics to examine each variable individually, then bivariate analyses were used to determine the relationship between the trauma measure, potential mediators, and controls on the outcome variable of young adult criminal offending. Lastly, a four-model, logistic regression was used to analyze the effects of school and familial influences separately, and together, on the effect of childhood trauma on later criminal offending. Model 1 was used to see the main effect (without mediators) of childhood trauma exposure on young adult criminal offending. Since Life Course Theory (LCT) predicts strong social bonds from school and familial domains, Models 2 and 3 view the effects of school mediators and familial mediators separately on the childhood trauma/ criminal offending relationship. LCT emphasizes the influence of each aspect in life, and cumulative continuity (Elder, 1998). Finally, Model 4, looks at childhood trauma, the combination of school and parental mediating factors, and controls on young adult criminal offending.

CHAPTER 6

RESULTS

6.1 Univariate Analysis

Univariate analyses are displayed in Tables 1 and 2, describing the nature of the sample and variable characteristics. A total of 3,772 cases were used in the current study.

6.1.1 Dependent Variable

Most respondents reported no offenses within the last 12 months of the Wave IV interviews, while 16.3% of the respondents reported at least one criminal offense within the past 12 months (Table 1). The Wave I delinquency measurement had a range of 0-10, with a mean of 1.42 and a standard deviation of 1.913 (Table 1). This delinquency measure shows that, on average, the respondents were not very delinquent.

6.1.2 Independent Variables

The main independent variable of the current study is trauma exposure in childhood. Table 1 displays each of the nine individual traumatic events that compose the main independent variable, childhood trauma, along with the percent of occurrence within the sample. The most frequently reported trauma among respondents was emotional abuse (45.2%), followed by physical abuse (27.1%), incarcerated parent(s) (15.7%), parent(s) who binge drink (12.3%), been threatened (11.4%), neglect (10.6%) and witnessed violence (10.6%), experienced violence, and sexual abuse (4.5%). Table 2 shows the majority (70.1%) of respondents indicated they experienced at least one childhood trauma from the above items found in Waves I, III, and IV (Table 2), showing the prevalence of trauma exposure in a nationally representative sample of adolescents.

Potential mediator variables and risk factors of school suspension, GPA, attachment to school and teachers, perceived familial support, parental involvement, and parental closeness were next explored.

The majority (75.1%) of respondents reported never having received an out-of-school suspension before the Wave I interviews (Table 2). Respondents reported an average GPA score of 2.84 (between a B and C average) with a standard deviation of 0.767, a median of 3, and a range of 1-4 (Table 2). The attachment to school and teachers measure had a range of 10-45, with a mean of 34.40 and a standard deviation of 5.632 (Table 2). On average, respondents reported fairly high school attachment.

The perceived familial support measure from Wave I had a potential range of 1.2 to 5, with a mean of 4.00 and a standard deviation of 0.680 (Table 2). On average, respondents reported a fair amount of perceived familial support. The parental involvement measure from Wave I had a range of 0-5, with a mean of 1.50 and a standard deviation of 1.026 (Table 2). On average, respondents reported a low level of parental involvement. The parent/ respondent relationship closeness measure from Wave III had a range of 1-5, with a mean if 4.42 and a standard deviation of 0.60 (Table 2). This variable was negatively skewed, showing that on average respondents reported feeling a more affirmative parent/ respondent relationship.

6.1.3 Control Variables

Within the sample of 3,772 respondents, 50.2% of respondents identified as male (Table 2). Age ranged from 11-21 years old during Wave I interviews, with the average age being 15.85 years old, and a standard deviation of 1.77 years (Table 2). The majority of the sample was White (including Asian/Pacific respondents) (73.3%), followed by 15.0% African American, 10.1% Latinx, and 1.5% Other (including Native American respondents) (Table 2). Childhood delinquency (Wave I) ranged from 0-10, with 10 indicating the most delinquency (Table 2). A mean of 1.42 and a standard deviation of 1.913 shows that respondents tended to have a low level of delinquent in childhood. Most respondents (91.7%) also reported not having a parent who received public assistance (or welfare) during the Wave I interviews (Table 2).

6.2 Bivariate Analysis

6.2.1 Trauma and Criminal Offending

Bivariate tests were analyzed to see the relationship between the main independent variable, each mediating variable, and each control variable to see their association with the dependent variable. Table 3 displays the chi-square test assessing whether childhood traumas were related to criminally offending in young adulthood. Children who had one or more traumas were more likely to criminally offend (19.4%) than children reported no childhood traumas (8.9%). It should be noted, however, that the vast majority of children with at least one trauma reported no offending in young adulthood, showing that childhood traumas do not always lead to criminal offending in later-life.

6.2.2 Mediating Factors and Criminal Offending

The following bivariate tests analyze the association between each mediating variable with the dependent variable. Table 4 represents the chi-square test that was conducted to assess whether being suspended from school before the Wave I interview would affect young adult criminal offending in the respondents' young adulthood (Wave IV). Respondents who were suspended from school in Wave I of the study were more likely (27.4%) to have at least one offense after their 18^{th} birthday than respondents who were not suspended (12.6%). There is a statistically significant relationship between suspension in school and criminal offending in adult life (chi-square=114.269, df=1, $p<.001$) that can be generalized to the population.

An independent sample t-test was conducted to assess how criminal offending in young adulthood was associated with the respondents' GPA at Wave I (Table 5). Respondents who did not criminally offend in young adulthood had a higher GPA (2.88) compared to those who did offend in young adulthood (2.60). This difference was statistically significant ($t=8.451$, $p<.001$). A Cohen's d test was used to measure the effect size (or how big the statistically significant difference was). This number tells us the difference in standard deviations that the two means are. The Cohen's d test ($d>.30$) revealed a

0.364 standard deviation difference in the mean GPA score of criminally offending and non-criminal offending young adults. Therefore, this t-test is meaningfully different, telling us that respondents who report criminal offending in young adulthood were also likely to report a lower GPA. This suggests a lower GPA in adolescence is associated with criminal offending in young adulthood.

An independent sample t-test was conducted to assess how criminal offending in young adulthood was associated with the respondents' level of attachment to school and teachers at Wave I (Table 5). Respondents who did not criminally offend in young adulthood had a stronger (34.74) attachment to school and teachers compared to respondents who did offend in young adulthood (32.63). This difference was statistically significant ($t=7.845$, $p<.001$), and was found to be meaningfully different by the Cohen's d test ($d>.30$). This suggests a higher level of attachment to school and teachers is predictive of not criminally offending in young adulthood.

An independent sample t-test was conducted to assess how criminal offending in young adulthood was associated with the respondents' level of perceived familial support at Wave I (Table 5). Respondents who did not criminally offend had a higher average perceived familial support of 4.02 than respondents who did criminally offend in young adulthood (3.91). This difference was statistically significant ($t=3.581$, $p<.001$), but was not meaningful according to a Cohen's d test ($d<.20$). This suggests that the difference in mean (of perceived familial support) between respondents who did and did not report criminal offending in young adulthood is significantly different, but not different enough to draw any meaningful conclusions.

An independent sample t-test was conducted to assess how criminal offending in young adulthood was associated with parental involvement at Wave I (Table 5). Respondents who did not criminally offend had a higher average parental involvement (1.52) than respondents who did criminally offend in young adulthood (1.42). This difference was statistically significant ($t=2.073$, $p<.05$), but was not meaningful according to a Cohen's d test ($d<.20$). This suggests a stronger parental involvement is associated with less future criminal involvement, but not by a meaningful amount.

An independent sample t-test was conducted to evaluate how criminal offending in young adulthood was associated with the respondent's closeness to their parent(s) at Wave III (Table 5). Respondents who did not criminally offend in young adulthood had an average closeness of 4.45, while respondents who had at least one criminal offence in young adulthood had an average closeness of 4.27. This difference was statistically significant ($t=6.983$, $p<.001$), and was meaningful according to a Cohen's d test ($d>.30$). This suggest a stronger parental bond is associated with less criminal involvement in young adulthood.

6.2.3 Control Variables and Criminal Offending

The following bivariate tests analyze the association between each control variable with the dependent variable. A chi-square test was conducted to assess whether males or females were more likely to have at least one criminal offense in the last 12 months of the Wave IV interview (Table 6). Males (22.1%) offended more than females (10.4%). There is a statistically significant relationship between sex and whether someone has committed a criminal offense (chi-square= 95.634, df=1, $p<.001$).

An independent sample t-test was conducted to assess how criminal offending in young adulthood was affected by the age of the respondent at Wave I (Table 5). Criminal offending in young adulthood was associated with a slightly younger age (15.50), compared to those who did not criminally offend (15.92). This difference was statistically significant ($t=5.381$, $p<.001$), and meaningful according to the Cohen's d test ($d>.20$).

A chi-square test was conducted to assess whether race was related to criminality in young adulthood (Table 7). The Black (21.2%) and Latinx (20.2%) racial groups were the most likely to offend in young adulthood, followed by Other (17.2%), White and Asian (14.7%). There is a statistically significant relationship between race and criminal offending in young adulthood (chi-square= 19.217, df=5, $p<.01$) that can be generalized to the population.

An independent sample t-test was conducted to assess how criminal offending in young adulthood was associated with previous acts of delinquency of the respondent before Wave I (Table 5). Lower rates of childhood delinquency (1.24) were found by respondents who reported no criminal offending, compared to rates of childhood delinquency (2.31) in those who offended in young adulthood. This difference was statistically significant ($t=-10.530$, $p<.001$), and meaningful according to the Cohen's d test ($d>.40$). Respondents who reported criminal offending in young adulthood were on average reporting 0.447 standard deviations more delinquency in childhood. Criminally offending young adult respondents were more likely to have also reported delinquency in childhood. This shows the impact of childhood delinquency setting the life trajectory toward later criminal offending.

The chi-square test in Table 8 assesses whether having a parent receiving welfare was associated with criminally offending in young adulthood. Respondents with at least one parent receiving welfare (23.4%) were more likely to commit a criminal offence in young adulthood compared to respondents with no parent receiving welfare assistance (15.6%). There is a statistically significant relationship between having a parent who receives welfare and whether someone has committed a criminal offense in young adulthood (chi-square= 12.669, df=1, $p<.001$) that can be generalized to the population.

6.3 Multivariate Analysis

6.3.1 Model 1

A logistic regression was run in four models (Table 9) to see 1) the main effect of childhood trauma, 2) how school and familial factors mediate the main effect separately, and 3) to view the effect of all mediators on the relationship between childhood trauma and young adult criminal offending. The first model presents each control variable with the childhood trauma variable to show the main effect of childhood trauma without any mediators. In this model, childhood trauma has a parameter estimate of 0.714 ($p<.001$) and an odds ratio of 2.042. Without any protective or school factors, respondents' odds of criminally offending in young adulthood were two times greater after experiencing one or more childhood

traumas. Furthermore, childhood delinquency (odds ratio of 1.198, p<.001), being Black (odds ratio of 1.497, p<.01), and being male (odds ratio of 2.213, p<.001) were all factors that made an individual more likely to criminally offend in young adulthood. Being older during Wave I interviews made the respondents less likely (odds ratio of 0.854, p<.001) to criminally offend in young adulthood. The Nagelkerke R^2 for Model 1 is 0.126.

6.3.2 Model 2

Model 2 analyzes childhood trauma, school factors, and each control variable to see the effect of school factors on criminal offending. Moreover, Model 2 was generated to consider the estimated effect of childhood trauma changes after controlling for school factors (Table 9). With the addition of the school factors, the childhood trauma odds ratio drops from 2.042 to 1.862. This is a 12.89% drop in the parameter estimate. School suspension and attachment to school and teachers both show significance in their parameter estimates (0.401, p<.001; -0.025, p<.05). School suspension increases the likelihood of later criminal offending, while attachment to school and teachers show a decreased likelihood of offending, supporting LCT and previous research. Being male and/or Black continued to have higher odds of criminal offending. Additionally, greater involvement in delinquency in childhood led to greater odds of young adult criminal offending. The Nagelkerke R^2 for Model 2 is 0.142.

6.3.3 Model 3

Model 3 analyzes childhood trauma, parental and familial mediators, and each control variable, in order to show the estimated effects of the parental and family factors on criminal offending in young adulthood without the influence of the school factors. Model 3 was run without school factors in order to analyze the separate mediating effects of familial factors on the main relationship of childhood trauma and young adult criminal offending. The parental and familial factors decrease the childhood trauma odds ratio from 2.042 to 1.856 (p>.001) (Table 9). This is a 13.45% drop in the parameter estimate, similar to the decrease the school factors provided. Only Wave III parental closeness showed significance, when

compared to the other familial variables, with a parameter estimate of -0.349 ($p<.001$) and an odds ratio of 0.706. This shows that a closer relationship between the respondent and parent at Wave III decreases the likelihood of criminally offending in young adulthood (Wave IV). Coefficients for gender, age, race/ethnicity, and delinquency were similar to the previous model. The Nagelkerke R^2 for Model 3 is 0.137.

6.3.4 Model 4

Model 4 analyzes the effects of school, parental and familial factors on young adult criminal offending (Table 9). The model displays each variable, producing a further decrease of the childhood trauma odds ratio to 1.744; approximately a 22% decrease in the parameter estimate from Model 1. Though childhood trauma is still significantly associated with an increased likelihood of criminal offending after controlling for risk and protective factors, the association was partially mediated. Childhood trauma is a strong influence on young adult criminal offending, standing the test of time over fourteen years. Many events can occur (such as turning points) in this timespan to change the life trajectory from criminality, yet there is a significant association between childhood trauma and later offending. Although the relationship was significantly predicting later offending, it was found to be somewhat mitigated by school and parental factors. Social bonds to school and parents both displayed mediating effects. The attachment to school and teachers odds ratio (0.978, $p<.05$) shows that respondents with a higher attachment were less likely to commit crimes in young adulthood. Parental closeness at Wave III presented an odds ratio of 0.707 ($p<.001$), showing that a more affirmative relationship between the respondent and their parent decreases the likelihood of criminal offending in young adulthood. The school suspension risk factor (OR 1.485) predicted the likelihood of criminally offending in young adulthood, showing a cumulative disadvantage effect of trauma and suspension. In respect to control variables, being male (OR 2.113) increased the risk of criminal offending in young adulthood. Having committed delinquent acts (OR 1.129) increased the risk of criminal offending in young adulthood. Lastly, being Black (OR 1.427) increased the risk of criminal offending, echoing the disadvantage of

blackness in the United States. Cumulative disadvantage would be accumulated by having experienced traumatic events, school suspension, and being a young, Black male. The Nagelkerke R^2 for Model 4 is 0.150 (Table 10).

CHAPTER 7

DISCUSSION

The purpose of this research was to provide evidence that the path of childhood trauma exposure leads to later-life criminal offending and to also investigate intervening pathways. Current findings supported previous research, revealing that exposure to trauma in childhood predicted an increased likelihood of criminal offending in young adulthood. A lack of literature on familial social bonding mediators on the childhood-trauma relationship prompted this research to also investigate potential mediators. Social bonds from both the school and family domains were included in the analysis. Social bonding factors from school and family did not all show partially mediating effects. Attachment to school and teachers (a Wave I variable) demonstrated little reduction in the odds of offending for youth exposed to trauma, while parental closeness (a Wave III variable) provided a modest reduction in this relationship. Other social bonding measures (parental involvement and familial support from Wave I), as well as a school risk factor (GPA), provided no mediation effects. School suspension added to an increased likelihood of criminal offending in young adulthood, providing for a cumulative disadvantage effect for those who experienced trauma. Life Course Theory (LCT) was central in guiding this research. LCT views life holistically, recognizing the important impact of timing (i.e. childhood, adolescence, young adulthood), life events, social bonds, and all life domains on the life trajectory. School and family both serve as important life domains for adolescents, and hold much influence on the life trajectory.

7.1 Trauma and Delinquency/Crime

The first hypothesis predicts a higher likelihood of young adult criminal offending from children who have been exposed to trauma. This was supported, as individuals with reported childhood trauma had a greater likelihood of criminal offending in young adulthood. Previous research and LCT have shown the timing of events to be influential on life trajectory (Derzon, 2010; Elder, 1998; Sampson and Laub, 1993). We also know the importance of co-occurring traumas leading to an even further risk in the likelihood of

deviant behavior and criminal offending (Horan and Widom, 2015; Elder, 1998; Baglivio et al., 2015; Gerard and Buehler 2004; Stoddard et al., 2012). For example, Gerard and Buehler (2004) added to the documentation of the impact of cumulative risk resulting in conduct problems and delinquency (Stoddard et al., 2012).

LCT is a complex theory integrating various disciplines and perspectives, while also keeping in mind the bigger picture of development. It does not simply view development in a one-cause-equals-one-effect way, but rather sees the importance of every aspect influencing life outcomes, such as the perspective of development or trajectory over time as it changes and evolves with life transitions and turning points. The individual timing of traumatic events is important to note because of the development of the brain. "Early experiences and environmental influences can leave a long lasting signature on the genetic predispositions that affect emerging brain architecture and long-term health" (Shonkoff et al., 2012, p.e232). Showing the impacts on the brain, early "toxic stress" (i.e. trauma) has been linked to later-life impairments "in learning, behavior, and both physical and mental well-being" (Shonkoff et al., 2012, p.e232). For example, it has been shown that childhood neglect affects people from infancy until adulthood. Even more, childhood neglect occurring earlier in life is "particularly detrimental to subsequent development" (Hildyard and Wolf, 2002, p.679). Newsome's and Sullivan's (2014) research on 1,568 sample of trauma exposed adolescent twins found that genetic factors partially influenced how individuals responded to accumulated trauma exposure and that genetic factors also explained more than half of the differences between vulnerable and extremely vulnerable adolescents (Newsome and Sullivan, 2014). Trauma affects other areas in life other than criminality, such as education and mental health.

Not only is child maltreatment humanely wrong and affecting many lives, but it's also costing victims and the U.S. economically. Fang et al. (2012, p.156) calculated how much child maltreatment costs its survivors, as well as society:

> The estimated average lifetime cost per victim of nonfatal child maltreatment is $210,012 in 2010 dollars, including $32,648 in childhood health care costs; $10,530 in adult medical costs; $144,360 in productivity losses; $7,728 in child welfare costs; $6,747 in

> criminal justice costs; and $7,999 in special education costs. The estimated average lifetime cost per death is $1,272,900, including $14,100 in medical costs and $1,258,800 in productivity losses. The total lifetime economic burden resulting from new cases of fatal and nonfatal child maltreatment in the United States in 2008 is approximately $124 billion. In sensitivity analysis, the total burden is estimated to be as large as $585 billion.

Although these estimates are somewhat dated, they still illustrate the point that victims, as well as the whole U.S. society, are all suffering from this health-care crisis. These complexities call for more diverse approaches like LCT to understand and respond to experiences associated with trauma.

7.2 Trauma and Crime: Social Bonds as Intervening Mechanisms

The current project took LCT to view the development of criminal offending in young adulthood and how school and family factors might mediate this relationship. As discussed in a recent literature review, little research has been found on social bonding mediating factors like family on childhood trauma and later criminality (Watts, 2017). To fill the gap in literature, this study hypothesized that the mediating factors from school and family would mitigate the effects of childhood trauma on young adult criminal offending. Factors from school and family are both important to account for because of changes and alterations in structures and processes associated with development. LCT, along with previous research, have shown the timing of events to be influential on life trajectory (Derzon, 2010; Elder, 1998; Sampson and Laub, 1993). Changes in structures (i.e. school to work) and processes (i.e. playing with friends to employment) become more diverse with age and the social context, providing more avenues for protection against adverse life turning points.

The findings on childhood trauma and school suspension leading to later-life criminal involvement are supported by previous findings (Derzon, 2010; Widom and Maxfield, 2001; Smith et al., 2013; Shin 2016; Williams 2007; Mersky 2012; Basto-Pereira et al., 2016; and Wolf and Kupchik, 2017). Respondents who reported childhood trauma in turn had higher odds of school suspension and an increased likelihood of criminal offending in young adulthood. Using LCT's cumulative disadvantage, we

can see that children who experienced childhood trauma are at greater risk of school suspension and consequently would have a higher likelihood of criminal offending in young adulthood. Individuals are more vulnerable to later-life criminal behaviors the more risk factors and traumatic experiences they are exposed to.

This study hypothesized a partial mediation effect of social bonds on the trauma-offending relationship. LCT views social bonds and both the family and school domains to be influential on life course trajectory (Elder, 1998; Bengston and Allen, 1993; Sampson and Laub, 2007). Positive, strong social bonds provide for stability in life, which help deter influences of criminality (Sampson and Laub, 2007). Watts (2017) provides evidence of the mediating effects of social bonds, particularly maternal bonds and school attachment, decreasing delinquency in adolescents with past childhood maltreatment. For these reasons, parental and school social bonds were used in the current study. A Wave III parental social bond was important to have in the current study, because of the timing of events. Since the outcome of criminal offending is measured in young adulthood, a time marked as the transition into a more independent life, it is important to have an attachment measure that was not related to high school. Substantiating this, only the Wave III social bond of parental closeness produced significant mediating effects, while both Wave I parental social bond measures (parental involvement and familial support) did not.

These results may have been produced for two separate timing reasons: 1) change in influential life domains, and 2) too wide a predictive timeline. Respondents were in adolescence, attending 7^{th} to 12^{th} grades during Wave I, while in Wave III respondents were in young adulthood (18-26 years old). As people grow older, different domains (school, work, family, etc.) of life become more significant than others, producing more influence on the life trajectory. There is a salient life domain shift from school to career as people grow from adolescence into young adulthood. It is a transitional period marked culturally with gaining a more independent life; therefore, it makes sense that school factors would become less influential in young adult lives due to the many other domains and relationships that become more salient

in this period. This could be a potential reason some protective factors (parental involvement, perceived familial support, and GPA) were not significant. Studies like Smith et al. (2013) and Lee et al.'s 2018 research are both good representations of this because the studies show a decrease in the significance of school factor influences for participants. More specifically, Smith et al. (2013) measured participants at 14-18 years old and again at 21-23 years old and found a weak influence of GPA as a mitigating factor on maltreatment leading to antisocial behavior. Lee at al. (2018) showed school attachment to be less influential over time in both participant groups: those who were maltreated and those who were not maltreated as a child.

Measuring effects across a wide timeline could also be a reason certain factors were not significant. LCT explains the importance of each aspect in life, some more at one point in time than others. When analyzing effects across six years (from Wave III to Wave IV) or fourteen years (Wave I to Wave IV) of data, there are very likely going to be other influences in life that could affect the life trajectory other than the school and family factors that were measured in the current study.

7.3 Limitations

A few limitations presented themselves in the current study. The childhood trauma measure was measured as a binary variable. By doing so, this study did not get to analyze the effects of co-occurring traumas. Past research has shown that co-occurring traumas produces negative outcomes on the life trajectory, such as increased likelihood of deviant behavior and criminal offending (Horan and Widom, 2015). Having an indexed childhood trauma variable would have allowed this study to show the predicted increasingly stronger effect of multiple traumas on criminally offending. Additionally, being able to analyze the relationship between the respondent and the perpetrator of the trauma would have added more depth to this research. This would have allowed for a clearer look into the strengths of family and of school. When an individual from the family is the perpetrator of trauma, or when the trauma occurs in the home, the predicted protective factors of parents and family would likely change. Likewise, school factors such as attachment might function differently if trauma was occurring in school.

A major limitation of this project was not having enough data on incarcerated individuals which was the desired sample when this research project began. Being able to show trauma exposure outcomes of those who are incarcerated, along with criminal offending behavior, would add to this research, as well. Being able to show childhood trauma exposure among this group would have been beneficial to reflect previous reports of a high percentage of adverse childhood experiences in incarcerated individuals. Since there were so few institutionalized individuals in the data, they were removed from the sample. Having a large number of incarcerated individuals would have allowed this project to specifically look at that group's history of childhood trauma.

Another major limitation of this project is the age of the data. Technology has changed today's childhood and adolescent experience from what it was between 1994 and 1996 (Wave I through Wave II). When discussing childhood traumas and what might be mediating factors for them, we need to take into account today's technologies. Social media outlets could be sources of both benefit and harm to users. Social media provides platforms of connection with others, or rather digital social bonds. Social media outlets may have potential positive or negative effects on life outcomes. Finding ways to use technology and social media as a mechanism to stop childhood trauma before it occurs is ideal, though not yet practical to my knowledge. With as much as technology is a part of our lives today, researchers not only must try to understand if it has any mediation effects, and how it could be used to benefit those who have suffered. Creating a proactive technology piece would be the ideal development to catch people before something bad happens, whether that's fostering the start of a life turning point or cultivating protective relationships.

CHAPTER 8

CONCLUSION

The current study found a linkage between childhood trauma and criminal offending in young adulthood, along with partially mediating factors of school and parental social bonds, and risk factors in adolescence. Other trauma risk factors have also been documented to increase the severity of later-life outcomes (Horan and Widom, 2015). Moreover, other areas of life are affected by trauma, such as education deficits, anxiety and depression, and criminal arrests in adulthood (Horan and Widom, 2015). The frequency, cost, and far-reaching effects of childhood trauma, in addition to the multiplicity of outcomes gives further emphasis as to why trauma needs to be taken as a public health problem. A preventative approach should be taken to decrease the occurrence of traumatic event exposure. Furthermore, additional buffering mechanisms should be explored to combat trauma exposure in children and adolescents.

With the results of the current study and our understanding of LCT, we can begin to recognize policy implications for those who work with adolescents. This study finds that childhood trauma affects later-life criminal behavior, and that this relationship can be partially mitigated by school and family. Adolescents who have experienced trauma should be viewed as more vulnerable to later-life criminal behavior. Furthermore, teachers should continue to watch for signs of childhood trauma, and report students who they think may have experienced trauma. It has been shown that teacher's expectations of student behavior after experiencing physical and emotional abuse "generally mirrored research findings as to the actual effects of child abuse" -suggesting that teachers can fairly-well pickup on whether a student has been through trauma (Yanowitz et al., 2003, p.483). Though trainings should be put in place for teachers and other school personnel to recognize such behavior, teachers and schools should feel comfortable intervening with students with known or suspected instances of trauma because of the variety of research that shows consequences of trauma on criminality. Furthermore, schools should feel obligated to intervene in some way, because in many cases, schools have a great influence on adolescent lives.

Both education and mental health are important for life outcomes. Schools must understand this in order to prepare students for a productive, working life, and for the primary interest of schools to produce academically well-performing students. Therefore, providing avenues to build school and teacher attachment in adolescent lives could be a successful strategy in intervening in students' lives, since school attachment decreases the likelihood of later-life criminal behavior. Nevertheless, multiple intervention strategies should be considered because of the various influences in life.

Early programs in a child's life are also important in decreasing the effects of disadvantage and trauma. Trauma and disadvantage typically occur together during one's live, inciting further disadvantage on the life course and producing cumulative disadvantage. Programs such as Early Head Start (for ages birth to three years old), Head Start (ages three and four years old), and state pre-kindergarten (mostly four year olds) would provide a way to develop social bonds and mitigate the criminal life trajectory. These programs have the capability to add stabilization, education, and social bonds to a child's life, especially the Head Start programs, which were created specifically for financially disadvantaged children. Though these programs are funded by the government, and are, therefore subject to change in their availability (both in physical location and in how many children the programs can serve). Additional funding for these programs would be ideal to help children learn and build social bonds to workers and other students. As outlined previously, childhood trauma costs individuals and the U.S. a lot of money in health care and economic costs. Funding early childhood programs such as Head Start and state pre-kindergarten would be comparatively much cheaper, would help set a more pro-social life trajectory for children, and would likely produce more contributing members to society.

Parental closeness was found to be a significant deterrent of later-life criminal activity among those who experienced trauma, and therefore, should be included in the discussion when considering interventions. Certain interventions have been found to provide "effective evidence-based strateg[ies] for preventing antisocial behavior and delinquency" (Piquero et al., 2016, p.229). A meta-analysis of 78 studies reviewing parent training programs on preventing delinquent and antisocial behaviors in children

found that The Incredible Years Program, Parental-child interaction therapy, and the Triple P Parenting Program are the most popular "brands" of early family/parent training programs, beginning when children are about five years old (Piquero et al., 2016). Such interventions work to foster parental social bonds, providing for stability in a child's life. Furthermore, having strong parental bonds in early childhood before trauma occurred would likely mitigate the severity of potential outcomes, even more so than not having strong parental bonds before trauma occurred. "Intervention in adolescence or even adulthood, while important, may occur a bit too late to thwart early-onset criminal careers," (Piquero et al., 2016, p.230). Keeping the life course away from the path of criminality is easier to sustain, compared to changing a life course set on future criminality because of the cumulative disadvantage factor.

Researchers have tested the adverse childhood experiences index in the hope that it may become a screening tool for identifying youth before they commit a crime that classifies them as serious, violent, and chronic (SVC) offenders (Fox et al., 2015). In a previously mentioned study, the adverse childhood experiences index was tested on 22,575 youth from the Florida Department of Juvenile Justice. When Fox et al. (2015) compared the adverse childhood experiences of SVC and "one & done" offenders, they found that SVC offenders reported more adverse experiences, suggesting that more adverse childhood experiences led to a higher risk of committing more SVC crime. Fox et al. (2015) suggest we use this index to help screen children before they offend, in order to work with individuals before adverse outcomes occur or become worse. Because trauma touches the lives of so many incarcerated individuals (Dierkhising et al., 2013; Fox et al., 2015; Baglivio et al., 2015), services should be made available within the facilities to help address the health needs of individuals suffering from behind bars. Knowing there are multiple factors in life related to being incarcerated, it is not expected that simply addressing trauma at this stage would prevent recidivism. But, addressing trauma should be expected to help individuals reduce cumulative disadvantage and get back on a positive life trajectory.

REFERENCES

REFERENCES

Afifi, Tracie O., Harriet L. MacMillan (2011). Resilience following child maltreatment: A review of protective factors. *The Canadian Journal of Psychiatry, 56*(5) 266-272.

Anda, Robert F., Charles L. Whitfield, Vincent J. Felitti, Daniel Chapman, Valerie J. Edwards, Shanta R. Dube, & David F. Williamson (2002). Adverse childhood experiences, alcoholic parents, and later risk of alcoholism and depression. *Psychiatric Services, 53*(8), 1001-1009.

Baglivio, M. T., Wolff, K. T., Piquero, A. R., & Epps, N. (2015). The relationships between adverse childhood experiences (ACE) and juvenile offending trajectories in a juvenile offender sample. *Journal of Criminal Justice*, *22*(9), 229–241.

Bengtson, V.L., & Allen, K.R. (1993). The life course perspective applied to families over time. In *Sourcebook of family theories and methods: a conceptual approach*. In Boss, P.G., W.J. Doherty, R. LaRossa, W.R. Shumm, S.K. Steinmetz (Eds.), *Sourcebook of family theories and methods: a contextual approach* (469-473). New York: Plenum Press.

Bethell, CD, Davis, MB, Gombojav, N, Stumbo, S, Powers, K. (2017). Issue Brief: A national and across state profile on adverse childhood experiences among children and possibilities to heal and thrive. *Johns Hopkins Bloomberg School of Public Health*.

Caspi, Avshalom, Joseph McClay, Terrie E. Moffitt, Jonathan Mill, Judy L. Martin, Ian W. Craig, Ann Taylor, & Richie Poulton (2002). Role of Genotype in the cycle of violence in maltreated children. *Science 297,* 851–4.

Centers for Disease Control and Prevention, Kaiser Permanente. (2016). The ACE study survey data [unpublished data]. Atlanta, Georgia: U.S. *Department of Health and Human Services, Centers for Disease Control and Prevention.*

Currie, J., & Tekin, E. (2011). Understanding the cycle: Childhood maltreatment and future crime. *Journal of Human Resources*, *47*, 509-549.

Derzon, James H. (2010). The correspondence of family features with problem, aggressive, criminal, and violent behavior: A meta-analysis. *Journal of Experimental Criminology, 6*(3) 263-292.

Dierkhising, C. B., Ko, S. J., Woods-Jaeger, B., Briggs, E. C., Lee, R., & Pynoos, R. S. (2013). Trauma histories among justice-involved youth: Findings from the national child traumatic stress network. *European Journal of Psychotraumatology*, *4*, 1–12.

Dornbusch, Sandford M., Kristan Glasgow Erickson, Jennifer Laird, & Carol A. Wong (2001). The relation of family and school attachment to adolescent deviance in diverse groups and communities. *Journal of Adolescent Research, 16*(4) 396-422.

Elder, G. H. (1998). The life course and human development. In W. Damon & R. M. Lerner (Eds.), *Handbook of child psychology: Theoretical models of human development* (pp. 939-991). Hoboken, NJ, US: John Wiley & Sons Inc.

Fang, Xiangming, Derek S. Brown, Curtis S Florence, James A. Mercy (2012). The economic burden of child maltreatment in the United States and implications for prevention. *Child Abuse & Neglect, 36* 156-165.

Fagen, Abigail A. (2005). The relationship between adolescent physical abuse and criminal offending: Support for an enduring and generalized cycle of violence. *Journal of Family Violence, 20*(5), 279-290.

Felitti, Vincent J., Robert F. Anda, Dale Nordenberg, David F. Williamson, Alison M. Spitz, Valerie Edwards, Mary P. Koss, and James S. Marks (1998). Relationship of childhood abuse and household dysfunction to many of the leading causes of death in adults: The adverse childhood experiences (ACE) study. *American Journal of Preventative Medicine 14*, 245-258.

Fox, Bryanna Hahn, Nicholas Perez, Elizabeth Cass, Michael T. Baglivio, & Nathan Epps (2015). Trauma changes everything: Examining the relationship between adverse childhood experiences and serious, violent and chronic juvenile offenders. *46,* 163-173.

Geller, A., Garfinkel, I., Cooper, C. E., & Mincy, R. B. (2009). Parental incarceration and child well-being: Implications for urban families. *Social Science Quarterly*, *90*, 1186–1202.

Gerard, J. M., & Buehler, C. (2004). Cumulative environmental risk and youth problem behavior. *Journal of Marriage and Family*, *66*, 702–720.

Harris, Kathleen Mullan, & J. Richard Udry. (1994-2008). National Longitudinal Study of Adolescent to Adult Health (Add Health), 1994-2008 [Public Use]. ICPSR21600-v17. Chapel Hill, NC: Carolina Population Center, University of North Carolina-Chapel Hill/Ann Arbor, MI: Inter-university Consortium for Political and Social Research.

Hill, Jessica M., Arjan J. Blokland, & Victor R. van der Geest (2016). Desisting from crime in emerging adulthood: Adult roles and the maturity gap. *Journal of Research in Crime and Delinquency, 53*(4), 506-535.

Hildyard, Kathryn L., & David A. Wolfe. (2002). Child neglect: developmental issues and outcomes. *Child Abuse & Neglect, 26,* 679-695.

Horan, Jacqueline M., Cathy Spatz Widom (2015). Does age of onset of risk behaviors mediate the relationship between child abuse and neglect and outcomes in middle adulthood? *Journal of Youth and Adolescence, 44,* 670-682.

Horan, Jacqueline M., Cathy Spatz Widom (2015). Cumulative childhood risk and adult functioning in abused and neglected children grown up. *Development and Psychopathology, 27,* 927-941.

Johnson, M. K., Crosnoe, R., & Elder, G. H. (2011). Insights on adolescence from a life course perspective. *Journal of Research on Adolescence: The Official Journal of the Society for Research on Adolescence*, *21*(1), 273–280.

Klika, J. Bart, Todd I. Herrenkohl (2013). School factors as moderators of the relationship between physical child abuse and pathways of antisocial behavior. *Journal of Interpersonal Violence. 28*(4) 852-867.

Laub, John H., & Robert J. Sampson (1988). Unraveling families and delinquency: A reanalysis of the gluecks' data. *Criminology, 26*(3) 355-380.

Levendosky, Alytia A., Alissa C. Huth-Bocks, Michael A. Semiel, Deborah L. Shapiro (2002). Trauma symptoms in preschool-age children exposed to domestic violence. *Journal of Interpersonal Violence, 17*(2) 150-164.

London, Stephanie, Kelly Quinn, Joy D. Scheidell, B. Christopher Frueh, & Maria R. Khan (2017). Adverse experiences in childhood and sexually transmitted infection risk from adolescence into adulthood. *Sexually Transmitted Diseases*, *44*(9), 524-532.

Lowell, Amanda, Kimberly Renk, & Amanda Havill Adgate (2014). The role of attachment in the relationship between child maltreatment and later emotional and behavioral functioning. *Child Abuse & Neglect, 38*, 1436-1449.

Melotti, Giannino, Silvia Potì, Giovanna Gianesini & Antonella Brighi (2018). Adolescents at Risk of Delinquency. The role of parental control, trust, and disclosure, *Deviant Behavior*, *39*(3), 347-362.

Menting, Barbara, Pol A. C. Van Lier, Hans M . Koot, Dustin Pardini, & Rolf Loeber (2016). Cognitive impulsivity and the development of delinquency from late childhood to early adulthood: Moderating effects of parenting behavior and peer relationships. *Development and Psychopathology, 28,* 167-183.

Newsome, Jamie, & Christopher J. Sullivan. (2014). Resilience and vulnerability in adolescents: Genetic influences on differential response to risk for delinquency. *Journal of Youth and Adolescence*, 43:1080-1095.

Pearson, Jennifer, & Lindsey Wilkinson (2013). Family relationships and adolescent well-being: Are families equally protective for same-sex attracted youth? *Journal of Youth and Adolescence 42*(3), 376-393.

Pearson, Jennifer, Lisa Thrane, & Lindsey Wilkinson (2017). Consequences of runaway and thrownaway experiences for sexual minority health during the transition to adulthood. *Journal of LGBT Youth, 14*(2), 145-171.

Pew Research Center (2015). *The whys and hows of generations research.* Available from http://www.people-press.org/2015/09/03/the-whys-and-hows-of-generations-research/

Piquero, Alex R., Wesley G. Jennings, Brie Diamond, David P. Farrington, Richard E. Tremblay, Brandon C. Welsh, Jennifer M Reingle Gonzalez (2016). A meta-analysis update on the effects of early family/parent training programs on antisocial behavior and delinquency. *Journal of Experimental Criminology, 12*(2), 229-248.

Sampson, Robert J., & John H. Laub (1997). A life-course theory of cumulative disadvantage and the stability of delinquency. Developmental Theories of Crime and Delinquency, edited by Terence Thornberry. New Brunswick, N.J.: Transaction Publishers.

Savolainen, Jukka, Lorine A. Hughes, W. Alex Mason, Tuula M. Hurtig, Anja M. Taanila, Hanna Ebeling, Irma K. Moilanen, and Janne Kvivuori. (2011). Antisocial propensity, adolescent school outcomes, and the risk of criminal conviction. *Journal of Research on Adolescence*, *22,* 54–64.

Schroeder, Ryan D., & Thomas J. Mowen (2014). Parenting style transitions and delinquency. *Youth & Society, 46*(2), 228-254.

Shin, Sunny H., Amy K. Cook, Nancy A. Morris, Robyn McDougle, Lauren Peasley Groves (2016). The different faces of impulsivity as links between childhood maltreatment and young adult crime. *Preventive Medicine, 88*, 210-217.

Shonkoff, Jack P., Andrew S. Garner, The Committee on Psychosocial Aspects of Child and Family Health, Committee on Early Childhood, Adoption, and Dependent Care, and Section on Developmental and Behavioral Pediatrics (2012). The lifelong effects of early childhood adversity and toxic stress. *Pediatrics*, *129*(1) 232-246.

Simons, Ronald L., Leslie Gorden Simons, Yi-Fu Chen, Gene H. Brody, Kuei-Hsiu Lin (2007). Identifying the psychological factors that mediate the association between parenting practices and delinquency. *Criminology, 45*(3), 481-517.

Smith, C.A., Park, A., Ireland, T.O., Elwyn, L., Thornberry, T.P., (2013). Long-term outcomes of young adults exposed to maltreatment: The role of educational experiences in promoting resilience to crime and violence in early adulthood. *Journal of Interpersonal Violence 28*(1), 121–156.

Sogar, Christina (2017). The influence of family process and structure on delinquency in adolescence –an examination of theory and research. *Journal of Behavior in the Social Environment, 27*(3), 206-214.

Stoddard, S. A., Zimmerman, M. A., & Bauermeister, J. A. (2012). A longitudinal analysis of cumulative risks, cumulative promotive factors, and adolescent behavior. *Journal of Research on Adolescence, 22*, 542–555.

Trudeau, Linda, Richard Spoth, G. Kevin Randall, W. Alex Mason, & Chungyeol Shin (2012). Internalizing Symptoms: Effects of preventive intervention on development pathways from early adolescence to young adulthood. *Journal of Youth & Adolescence. 41*(6) 788-801.

U.S. Department of Health & Human Services (USDHHS), Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. (2017). Child Maltreatment 2015. Available from https://www.acf.hhs.gov/sites/default/files/cb/cm2015.pdf.

U.S. Department of Health & Human Services (USDHHS), Administration for Children and Families, Administration on Children, Youth and Families, Children's Bureau. (2018). Child maltreatment 2016. Available from https://www.acf.hhs.gov/cb/research-data-technology/statistics-research/child-maltreatment.

Vanderbilt-Adriance, Ella, Daniel S. Shaw (2008). Protective factors and the development of resilience in the context of neighborhood disadvantage. *Journal of Abnormal Child Psychology, 36*, 887-901.

Walters, Glenn D. (2018). Mediating the relationship between parental control/support and offspring delinquency: Self-efficacy for a conventional lifestyle versus self-efficacy for deviance. *Crime & Delinquency, 64*(5), 606-624.

Watts, S. J., & McNulty, T. L. (2013). Childhood abuse and criminal behavior: Testing a general strain theory model. *Journal of Interpersonal Violence*, *28*, 3023-3040.

Watts, Stephen J. (2017). The link between child abuse and neglect and delinquency: Examining the mediating role of social bonds. *Victims & Offenders, 12*(5), 700-717.

Widom, Cathy S. & Michael G. Maxfield (2001). An update on the "cycle of violence." Washington, DC: National Institute of Justice, US Department of Justice, 1-8.

Wolf, Kerrin C., & Aaron Kupchik (2017). School suspensions and adverse experiences in adulthood. *Justice Quarterly 34*(3) 407-430.

Yanowitz, Karen L., Emmanuelle Monte, & Jamie R. Tribble (2003). Teachers' beliefs about the effects of child abuse. *Child Abuse & Neglect*, *27*, 483-488.

APPENDIX

APENDIX

Table 1: Individual Childhood Traumas

Traumas	Respondents who Indicated Each Trauma (%)
Neglect (W3)	10.6
Physical Abuse (W3)	27.1
Sexual Abuse (W3)	4.5
Emotional Abuse (W4)	45.2
Experienced Violence (W1)	4.9
Witnessed Violence (W1)	10.6
Been Threatened (W1)	11.4
Incarcerated Parent(s) (W4)	15.7
Parent(s) Binge Drink (W1)	12.3

Source: Add Health 1994-2008

Table 2: Descriptive Statistics (N=3772)

Variables	Min.	Max.	Mean or Percent	Std. Deviation
Criminally Offend (W4)	0	1	16.30%	
White (W1)	0	1	73.30%	
Male (W1)	0	1	50.20%	
Age (W1)	11.00	21.00	15.85	(1.770)
Delinquency (W1)	0.00	10.00	1.42	(1.913)
Parent Receives Public Assistance (W1)	0	1	8.3%	
Childhood Trauma (W1, 3 & 4)	0	1	70.1%	
School Suspension (W1)	0	1	24.9%	
GPA (W1)	1.00	4.00	2.84	(0.767)
Attachment to School & Teachers (W1)	10.00	45.00	34.40	(5.632)
Perceived Familial Support (W1)	1.20	5.00	4.00	(0.680)
Parental Involvement (W1)	0.00	5.00	1.50	(1.026)
Parental Closeness (W3)	1.00	5.00	4.42	(0.600)

Source: Add Health 1994-2008

Table 3: Childhood Trauma by Criminal Offending Binary

	Criminal offending in last 12 months		
Childhood Trauma	No offending=3158	At least 1 offense=613	Total
None	1027	100	1127
	91.1%	8.9%	100.0%
At Least 1 Trauma	2131	513	2644
	80.6%	19.4%	100.0%

Chi-square= 64.353***, df=1, *p<.05, **p<.01, ***p<.001

Table 4: School Suspension by Criminal Offending Binary

	Criminal offending in last 12 months		
Suspension	No offending=3159	At least 1 offense=614	Total
No	87.4%	12.6%	100%
	2476	356	2832
Yes	72.6%	27.4%	100%
	683	258	941

Chi-square= 114.269***, df=1, *p<.05, **p<.01, ***p<.001

Table 5: Comparison of Means by Criminal Offending Binary

Variable	Criminal Offending	n	m	Std. Deviation	t-test	Cohen's d
GPA	None	3159	2.88	(0.759)	8.451 ***	0.364
	At least once	613	2.60	(0.782)		
Attachment to School & Teachers	None	3159	34.74	(5.451)	7.845 ***	0.340
	At least once	613	32.63	(6.200)		
Perceived Familial Support	None	3159	4.02	(0.678)	3.581 ***	0.158
	At least once	613	3.91	(0.681)		
Parental Involvement	None	3159	1.52	(1.023)	2.073 *	0.090
	At least once	613	1.42	(1.041)		
Parental Closeness	None	3159	4.45	(0.594)	6.983 ***	0.302
	At least once	613	4.27	(0.609)		
Age	None	3159	15.92	(1.757)	5.381 ***	0.234
	At least once	613	15.50	(1.792)		
Delinquency (W1)	None	3159	1.24	(1.753)	-10.530 ***	-0.447
	At least once	613	2.31	(2.394)		

*p<.05, **p<.01, ***p<.001

Table 6: Sex by Criminal Offending Binary

	Criminal offending in last 12 months		
Sex	No offending=3158	At least 1 offense=614	Total
Female	89.6%	10.4%	100%
	1684	195	1879
Male	77.9%	22.1%	100%
	1474	419	1893

Chi-square= 95.634***, df=1, *p<.05, **p<.01, ***p<.001

Table 7: Race/Ethnicity by Criminal Offending Binary

	Criminal offending in last 12 months		
Race/Ethnicity	No offending=3156	At least 1 offense=611	Total
White and Asian	85.3%	14.7%	100%
	2358	405	2163
Latinx	79.8%	20.2%	100%
	304	77	381
Black	78.9%	21.1%	100%
	446	119	565
Other	82.8%	17.2%	100%
	48	10	58

Chi-square= 19.217***, df=5, *p<.05, **p<.01, ***p<.001

Table 8: Parent Receives Public Assistance by Criminal Offending Binary

Parent Receives Public Assistance	Criminal offending in last 12 months		
	No offending=3159	At least 1 offense=614	Total
Neither	2920	541	3461
	84.4%	15.6%	100.0%
At Least 1 Parent	239	73	312
	76.6%	23.4%	100.0%

Chi-square= 12.669***, df=1, *p<.05, **p<.01, ***p<.001

Table 9: Logistic Regression Predicting Young Adult Criminal Offending

	Model 1		Model 2		Model 3		Model 4	
Variables	Parameter Estimate	Odds Ratio	Parameter Estimate	Odds Ratio	Parameter Estimate	Odds Ratio	Parameter Estimate	Odds Ratio
Male	0.794 ***	2.213	0.722 ***	2.058	0.836 ***	2.307	0.748 ***	2.113
Age	-0.158 ***	0.854	-0.178 ***	0.837	-0.165 ***	0.848	-0.172 ***	0.842
Latinx	0.211	1.234	0.181	1.198	0.247	1.280	0.207	1.230
Black	0.404 **	1.497	0.307 *	1.359	0.466 ***	1.593	0.355 *	1.427
Other	-0.042	0.959	-0.052	0.950	-0.032	0.968	-0.031	0.969
Delinquency (W1)	0.181 ***	1.198	0.124 ***	1.132	0.167 ***	1.182	0.121 ***	1.129
Parent Receives Public Assistance	0.245	1.277	0.120	1.128	0.210	1.234	0.099	1.104
Childhood Trauma	0.714 ***	2.042	0.622 ***	1.862	0.618 ***	1.856	0.556 ***	1.744
School Suspension			0.401 ***	1.493			0.395 ***	1.485
GPA			-0.123	0.885			-0.124	0.883
Attachment to School & Teachers			-0.025 *	0.975			-0.023 *	0.978
Familial Support					-0.062	0.940	0.022	1.023
Parental Involvement					-0.033	0.968	0.003	1.003
Parental Closeness					-0.349 ***	0.706	-0.346 ***	0.707
Constant	-0.590	0.554	1.040	2.829	1.393 *	4.025	2.299 **	9.960
Nagelkerke R^2 =	0.126		0.142		0.137		0.150	

*p<.05, **p<.01, ***p<.001