2014

A Developmental Perspective: Early Childhood Externalizing Behaviors Pathway to Delinquency in Adolescence

Tandra Nicole Sias
West Virginia University

Follow this and additional works at: <https://researchrepository.wvu.edu/etd>

Recommended Citation

Sias, Tandra Nicole, "A Developmental Perspective: Early Childhood Externalizing Behaviors Pathway to Delinquency in Adolescence" (2014). *Graduate Theses, Dissertations, and Problem Reports*. 104.
<https://researchrepository.wvu.edu/etd/104>

This Thesis is protected by copyright and/or related rights. It has been brought to you by the The Research Repository @ WVU with permission from the rights-holder(s). You are free to use this Thesis in any way that is permitted by the copyright and related rights legislation that applies to your use. For other uses you must obtain permission from the rights-holder(s) directly, unless additional rights are indicated by a Creative Commons license in the record and/ or on the work itself. This Thesis has been accepted for inclusion in WVU Graduate Theses, Dissertations, and Problem Reports collection by an authorized administrator of The Research Repository @ WVU. For more information, please contact researchrepository@mail.wvu.edu.

**A Developmental Perspective: Early Childhood Externalizing Behaviors Pathway to
Delinquency in Adolescence**

Tandra Nicole Sias

**Thesis submitted to the
College of Education and Human Services
at West Virginia University**

in partial fulfillment of the requirements for the degree of

**Master of Arts
in
Educational Psychology
with an emphasis in Child Development and Family Studies**

**Kristin L. Moilanen, Ph.D., Chair
Carol Markstrom, Ph.D.,
Aaron Metzger, Ph.D.**

Department of Education and Human Resources

**Morgantown, West Virginia
2014**

**Keywords: [child, behavior problems, externalizing behaviors, delinquency, adolescence,
crime]**

Copyright 2014 Tandra Nicole Sias

ABSTRACT

A Developmental Perspective: Early Childhood Externalizing Behaviors Pathway to Delinquency in Adolescence

Tandra Nicole Sias

Early childhood externalizing behaviors are a known risk factor for future problem behaviors (e.g., poor achievement, delinquency). The present study seeks to illuminate the pathway of early childhood externalizing behaviors to five adolescent delinquency types (i.e., violent offenses, property offenses, illicit drug use, licit drug use, and minor offenses), in addition to overall delinquency. Study data came from two waves of the Children of the National Longitudinal Survey of Youth-1979 (CNLSY-79; $N = 855$, 52.4% male, 24.1% Hispanic, 36.6% Black, and 39.1% white). Boys engaged in higher levels of violent and property crimes, and black youth were less likely to engage in substance use than white teens. Contrary to predictions, externalizing problems at ages 4-5 years were not directly associated with any form of adolescent delinquency. Instead, the combinations of high levels of early externalizing and low levels of spanking led to high illicit substance use, and for European American teens only, high externalizing predicted involvement in property crimes. These findings suggest that risk factors vary by delinquency type.

EXTERNALIZING BEHAVIORS TO DELINQUENCY

Dedication

For my family and friends, who have supported me.

In loving memory of Shawn Michael Allman.

EXTERNALIZING BEHAVIORS TO DELINQUENCY

Acknowledgments

First, I would like to thank my family for the unconditional support and encouragement they've provided me through this process. You have reminded me that no matter what I can accomplish anything I set my heart on and work hard at. Thank you for never giving up on me!

I cannot even begin to put into words how much I appreciated the help of my mentor and thesis committee chair, Dr. Kristin Moilanen, you will forever hold a special place in my heart. Thank you for taking me under your wing and providing me with guidance. I am so thankful that you believed in me enough to allow me to research a topic that may have been way over my head but supported me each step of the way and shared your expertise with me.

Thank you to my committee members, Dr. Carol Markstrom, and Dr. Aaron Metzger, for your support and guidance. I appreciate the time you spent working on my thesis and the expertise you provided me on the topic, which I will continue to carry forward. Dr. Markstrom, thank you for taking on my thesis even though you were on sabbatical. Your feedback was extremely valuable and I appreciate everything you have done. Dr. Metzger, from my very first research project as a McNair Scholar and now to my graduate thesis, you have shaped my research skills immensely. Thank you for having the patience to guide me and confidence in my abilities!

I am also truly thankful that I had my boyfriend and friends encouraging me everyday, even when I was ready to give up. Jenica, the only person who understands my juvenile delinquency (and Starbucks) obsession, you have been a blessing through this whole process. The endless nights we spent in the office working on our theses, accompanied by Starbucks, will forever be the graduate school memories I hold closest to my heart and I am grateful for the friendship we've formed.

Table of Contents

	Page
Abstract.....	ii
Dedication.....	iii
Acknowledgements.....	iv
Table of Contents.....	vii
List of Tables.....	ix
Chapter One: Introduction.....	1
Definition of Terms.....	2
Statement of the Problem.....	4
Statement of Purpose	6
Chapter Two: Theoretical Framework	9
Adolescent-Limited and Life-Course Persistent Antisocial Behavior.....	9
Social Control Theory.....	15
General Strain Theory.....	17
Biopsychosocial Model.....	19
Summary of Theories	20
Chapter Three: Literature Review.....	22
Childhood-Era Externalizing Behaviors and Adolescent-Era Delinquency....	22
Delinquency and Prior Externalizing Behaviors.....	26
Children’s Biological Sex.....	26
Children’s Ethnicity/Race.....	31
Socioeconomic Status.....	34

EXTERNALIZING BEHAVIORS TO DELINQUENCY

	Page
Family Structure.....	37
Harsh Parenting Practices.....	40
The Current Study.....	42
Chapter Four: Methods.....	48
Participants.....	48
Measures.....	49
Analysis Plan.....	54
Chapter Five: Results.....	56
Preliminary Results.....	56
Violent Offenses.....	59
Property Offenses.....	59
Illicit Drug Use.....	60
Licit Drug Use.....	60
Minor Offenses.....	61
Overall Delinquency.....	61
Chapters Six: Discussion.....	62
Overview.....	62
Main Effects Association with Later Delinquency.....	62
Moderated Effects on Early Externalizing Behaviors and Later Delinquency..	69
Contributions, Limitations and Future Directions.....	74
Theoretical Implications.....	79
Clinical Implications.....	81

EXTERNALIZING BEHAVIORS TO DELINQUENCY

	Page
Conclusions.....	81
References.....	83
Appendix.....	94

EXTERNALIZING BEHAVIORS TO DELINQUENCY

List of Tables

Table	Page
1. Predictor Variables and Descriptive Statistics.....	96
2. Externalizing Behavior Scale Factor Analysis.....	97
3. Correlations Among the BPI Scales.....	98
4. Descriptive Statistics for Delinquency Measure.....	99
5. Bivariate Correlations.....	100
6. Results of Independent Samples T-Test and Descriptive Statistics for Children's Sex..	101
7. Results of One Way ANOVA for Children's Ethnicity/Race.....	102
8. Results of Independent Samples T-Test and Descriptive Statistics for Poverty Status..	103
9. Results of One Way ANOVA for Family Structure.....	104
10. Two Step Hierarchical Regression Model for Violent Offenses.....	105
11. Two Step Hierarchical Regression Model for Property Offenses.....	106
12. Two Step Hierarchical Regression Model for Illicit Drug Offenses.....	107
13. Two Step Hierarchical Regression Model for Licit Drug Offenses.....	108
14. Two Step Hierarchical Regression Model for Minor Offenses.....	109
15. Two Step Hierarchical Regression Model for Overall Delinquency.....	110
16. Study Hypotheses.....	111

List of Figures

	Page
1. Property Offenses Interaction: Prior Externalizing and Children's Ethnicity/Race.....	113
2. Illicit Drug Use Interaction: Prior Externalizing and Harsh Parenting Practices.....	114

Chapter One

Introduction

A Developmental Perspective: Early Childhood Externalizing Behaviors Pathway to Delinquency in Adolescence

Externalizing behaviors, which are behaviors disruptive to the outside world (e.g., temper tantrums and aggression towards others), peak at four to six years old and are the most common and persistent forms of childhood maladjustment (Thompson et al., 2011). Externalizing behaviors in childhood are linked to delinquency in adolescence and can ultimately hinder the youths' future (Reef, Diamantopoulou, van Meurs, Verhulst, & van der Ende, 2011; Thompson et al., 2011). Delinquency is defined as any criminal act that is committed by a youth, according to the Office of Juvenile Justice and Delinquency Prevention (OJJDP) (2010). Externalizing behaviors in early childhood can influence many adverse developmental outcomes, such as difficulty playing with others, inability to regulate emotions, and engaging in substance abuse, physical fights, and delinquency (Bongers, Koot, van der Ende, & Verhulst, 2004; Campbell, 1995; Reef et al., 2010; Thompson et al., 2010). Moreover, individuals who engage in early delinquency are at a greater risk for becoming serious or chronic offenders (Bongers et al., 2004). A better understanding about the developmental pathway from externalizing behaviors in early childhood to delinquency in adolescence is needed to allow researchers and clinicians to treat these problems effectively. Establishing a better understanding of this pathway could provide the groundwork for the creation of early intervention programs, in addition to illuminating the precursors to delinquency in adolescence.

Juvenile delinquency is currently a social problem that is faced in the United States,

which had the highest rate of incarceration for youth under the age of 20 in 2004 in comparison to all other developed nations (Freudenberg, 2009). According to the OJJDP (2010) it was estimated that over 33 million juveniles were arrested on charges ranging from breaking curfew to murder. Each individual that is currently incarcerated is costing the U.S. large amounts of money that could be better spent on prevention programs and ultimately save them in the long run. Society can save roughly between \$2.6 to \$4.4 million dollars by helping at-risk youth, whereas the U.S. would be spending \$1.3 and \$1.5 million on crime over the individuals' lifetime if they do not help them (Cohen & Piquero, 2009). The identification of antecedents to delinquency and criminal behavior will allow society to focus on prevention and intervention efforts in early childhood in order to reduce the adverse outcomes that the youth are exposed to and to decrease the cost of crime that these individuals would have caused society.

Definition of Terms

In this section, the key terms that are used throughout this thesis are defined to provide a better understanding of the succeeding information. The first terms to be defined are the general term of externalizing behaviors and the subcategories that are related to externalizing behaviors. The second sets of terms defined are delinquency in general and then the dimensions of delinquency.

Externalizing behaviors are problematic behaviors that are displayed outwardly and are disruptive to others around them (Fanti & Henrich, 2010; Hill, Degnan, Calkins, & Keane, 2006; Liu, 2006; Thompson et al., 2011). Examples of externalizing behaviors include, temper tantrums, aggression, destruction of property, and hyperactivity. Early childhood externalizing behaviors are socially undesirable actions that negatively impact people around the individual (Jenson, Harward, & Bowen, 2011). Although the recent Diagnostic and Statistical Manual of

Mental Disorders-Fourth Edition-Revised (*DMS-IV-TR*) (American Psychiatric Association, 2000) does not include a specific diagnosis for externalizing behaviors, the characteristics of these unwanted displays of behavior are typically labeled as disruptive disorders when they are displayed as a cluster. Some typical externalizing behaviors that children display include noncompliance, aggression, impulsive behavior, arguing, breaking rules, and property destruction (Jenson et al., 2011). These behaviors are further explained in the literature review, as well as their association with delinquency.

Delinquency by definition is any act that youth commit that would be considered a crime if an adult were to perpetrate the same act (OJJDP, 2010). Delinquency and criminal acts are general terms used for a variety of criminal acts that can be further broken down into several categories that have been distinguished by the Bureau of Justice's National Crime Victim Survey (United States Department of Justice, 2012), and the Federal Bureau of Investigation's Uniform Crime Report (United States Department of Justice, 2010). The present study investigated five prevalent delinquent acts, including violent crimes, property crimes, illicit drug use, licit drug use, and minor crimes. In addition, an overall delinquency category was investigated. Violent crimes are acts that involve threats of force or force towards individuals and can range from physical assault to homicide (United States Department of Justice, 2012). Property crimes, on the other hand, are acts that do not involve individuals but rather their possessions. Property crimes are acts that range from petty theft and destruction of property, to burglary and arson (United States Department of Justice, 2012). Drug crimes are multifaceted such that, these crimes can range from crime on an individual level (victimless crimes) such as possession, to crimes on a more macro level, such as manufacturing and distribution. The macro level of drug crimes can ultimately generate crime and violence more widespread compared to an individual level. For the

purpose of this study, drug crimes are investigated at the individual level in terms of a participant's drug use. Drug use was further broken down into the use of illicit drugs (e.g., illegal substances, including substances such as, marijuana, cocaine, and hallucinogens) and licit drugs (e.g., the legally-available substances, tobacco and alcohol). The last area of delinquency is minor crimes, which are status offenses and are only illegal because of the perpetrator's age and are offenses such as running away. The different dimensions of delinquency play a key role in the novelty of this study and the succeeding section provides a brief explanation of the impact delinquency has on society.

STATEMENT OF THE PROBLEM

Delinquency is a problematic not only for the individuals who engage in the behavior, but also for the community and society as a whole. The cost of delinquency is widespread and ranges from the cost to society and the government to a more individual level cost. Societal costs are considerable, such as the high rate of medical bills and costs at the individual level include, low educational achievement, family conflict, incarceration, and even death (Cohen, Piquero, & Jennings, 2010). Over the past few decades, the government has moved away from treatment and prevention programs for juveniles and has instead focused on punishment, such as probation and incarceration (Butts & Mears, 2001). Juveniles that enter the justice system are placed in programs geared towards punishment for their actions and ultimately cost the government copious amounts of dollars. Focusing attention on prevention and intervention efforts, which will save the government more money in the long run, could reduce this financial burden. However the government tends to only look at the large price of these programs rather the amount they will save over an individual's lifetime if rehabilitated instead of being incarcerated. The cost of crime for youth between ages seven to 17 years ranges from \$224,000 for early-onset offenders

to an upwards of \$861,000 for chronic offenders (Cohen & Piquero, 2009). An early-onset offender, an individual that has committed a crime before the age of 13, has an average of 34.2 offenses by age 17 (Cohen & Piquero, 2009). The cost of crime over an entire lifetime, according to Cohen and colleagues (2010), was estimated between \$1.3 and \$1.5 million in external cost caused by the typical career criminal.

The formula that was used to calculate the cost of crime over a took into account several aspects of crime and used four main factors to calculate the annual cost that was in return converted into a lifetime cost of crime which included: the average number of offenses the perpetrator has committed, the victims' costs of crime, the cost of the investigation, the arrest, adjudication for the perpetrator, and the cost of incarceration in days (Cohen, 1998). The cost of crime that Cohen and colleagues (2010) mentioned were based on the premises of the perpetrator not accepting the negative consequences and therefore their criminal acts adversely impacted society. The cost of crime can be seen in a variety of different lights. In particular with drug abusers, cost range from unproductivity in the workplace, which costs the company, to medical costs from their unhealthy lifestyle (Cohen & Piquero, 2009).

This cost of crime for each individual can be decreased if prevention and intervention efforts are being used by society rather than emphasizing punishment and incarceration for juveniles. Research conducted by Cohen and colleagues (2010) suggested that value of saving high-risk youth was estimated between \$2.6 and \$4.4 million in the United States. This "value of saving high-risk youth" was estimated based on factors linked to saving these youth from adverse outcomes such as crime and delinquency, level of education completed, drug and alcohol abuse, poor health outcomes and teenage pregnancy (Cohen et al., 2010). These adverse outcomes are preventable and this study aimed to seek a better understand the pathway from

early childhood externalizing behaviors to delinquency in adolescence.

Statement of the Purpose

Delinquency, which is costly for not only the individual involved but also their family, and ultimately society, is preventable. Prevention programs that target factors that stabilize or eliminate delinquent behaviors are needed to reduce the cost of delinquency. Moreover, these programs need to occur early on in life to prevent or reduce the rate of delinquency seen in adolescence. The current study's aimed to build an understanding of some potential factors that could serve to stabilize these behaviors, and thus provide more insight for programs designed for delinquency prevention.

Delinquent acts are crimes committed by youth, but the severity, intent, and manner of these crimes can vary based on the type of offense. For instance, a youth who commits a violent offense intentionally harms or threatens to harm another individual, whereas a youth engaged in property crimes has stolen or vandalized property of someone else. Although both types of crimes are legally wrong and involve a victim, these crimes differ drastically in the approach, in which violent offenses are an aggressive act against another individual with the intent to harm the victim and property offenses are committed with the intent to gain property, not injure another the victim. Since the approach to the crimes varies, it is expected that individuals involved in each type will vary. Therefore, the division of delinquency into subtypes was used to develop a greater understanding of adolescent delinquency and the risk factors that are associated with each form.

In addition to the differing intent of crimes, there are also differences between the offender types. Since the intent and offender type in which offenses are committed varies considerably, more attention should be paid to the factors that are associated with each individual

type of delinquency. The majority of research that has investigated delinquency typically looks at the all-encompassing definition (i.e., all types of delinquent behaviors collectively). However, for the purpose of this study, delinquency was examined in five different aspects (i.e. violent offenses, property offenses, illicit drug use, licit drug use, and minor offenses), in addition to the overall delinquency, allowing for a better understanding of the factors leading to each of these criminal acts. Furthermore, the purpose of this study was to determine what factors stabilize externalizing behaviors from early childhood into delinquency in adolescence. The factors investigated in this study included, children's sex, ethnicity/race, socioeconomic status, family structure, and harsh parenting practices.

This study was important because research has shown externalizing behaviors to be problematic throughout a child's life (Bongers et al., 2004; Campbell, 1995, Reef et al., 2010; Thompson et al., 2010). Moreover, Robins (1978) supported the idea that childhood behaviors can lead to later adult criminality: "Adult antisocial behavior virtually requires childhood antisocial behavior [yet] most antisocial youths do not become antisocial adults" (p. 611). To date, little research has indicated what factors impact the continuation of early externalizing behaviors into adolescent behaviors and it is important to understand the association in order to prevent further problematic behaviors in adolescence and criminality into adulthood. Although the current study was not aimed to investigate the trend into adulthood, it does investigate the point in development that researchers believe these behaviors peak (i.e. middle adolescence). As is the case for many human behaviors, once externalizing behaviors become entrenched, it becomes more challenging to fix them (Bongers et al., 2004). However, if these problems are tackled early on it is easier to break the behavior. The key to delinquency prevention is to start early and to accurately identify the factors that are associated with the stabilization of

problematic behaviors. For example, Shaw, Dishion, Supplee, Gardner, and Arnds (2006) conducted an early intervention program, The Family Check-Up, was designed to target early disruptive behaviors and the intervention was found to be successful, such that the intervention group had lower levels of disruptive behaviors in children and increased involvement for the mothers. Furthermore, research by Webster-Stratton, Reid, and Hammond (2004) showed that children who displayed behavior problems and were exposed to an early intervention showed a decrease in behavior problems compared to individuals who did not receive the intervention. However, there is an increased need for the identification of the risk behaviors associated with delinquency to be able to accurately target the appropriate behaviors for interventions.

The focus of this study was to investigate the association between early childhood externalizing behaviors and delinquency in adolescence. The study aimed to determine the associations between risk factors (i.e., child sex, ethnicity, socioeconomic status, family structure, and parenting practices) and delinquency. Moreover, the study was novel in that it differentiates between the types of delinquency (i.e., violent offenses, property offenses, drug offenses, and minor offenses) because certain risk factors may stabilize the behavior for certain types of delinquency but not others. The final aim of the study was to investigate whether the risk factors served as a moderator between early childhood externalizing behaviors and delinquency in adolescence. The following section, theoretical framework, provides an understanding of how these associations are thought to work and will shape the framework for the study.

Chapter 2

Theoretical Framework

The purpose of this section is to provide an overview of theories that were used throughout the study to understand how or why externalizing behaviors in early childhood progresses or diminishes into adolescence. Delinquency is a multifaceted concept, therefore for this study, the theoretical framework was based on an eclectic combination of theories, which together lay the groundwork for understanding the progression into delinquency. First, the adolescent-limited and life-course-persistent antisocial behavior taxonomy created by Moffitt (1993), which is the foundation for this study, illuminates the overall developmental progression of problematic behaviors. Next, social control theory developed by Hirschi (1969) explains that an individual's strong bond to society can prevent delinquency, however when the bond to society is broken, individuals engage in delinquent behavior. Furthermore, Agnew's (1992) general strain theory will touch on the idea that strain and emotional responses can lead to delinquency. Finally, the biopsychosocial model allows for a more clinical approach to the topic and illustrates how a variation of interactions (biological, psychological, and social) can lead to delinquency (Irwin & Millstein, 1986).

Adolescent-Limited and Life-Course-Persistent Antisocial Behavior: A Developmental Taxonomy

The first theory of focus, the adolescent-limited and life-course-persistent antisocial behavior taxonomy theory that emphasizes the differences in individuals who are engaged in delinquency for a short period of time versus a longer, more lifetime period. The present study was geared towards understanding the factors that stabilize delinquent behaviors and Moffitt's (1993) developmental taxonomy provided insight to the division of life-course-persistent and

adolescence-limited behaviors, which was the basis for the theoretical framework for this research. Moffitt (1993) argued that in terms of antisocial behaviors, individuals are typically one of two categories, which include the life-course-persistent category and adolescent-limited category. The life-course-persistent group displays stability in their antisocial behaviors. The adolescent-limited group are individuals who only engage in antisocial behaviors during adolescence. Moffitt (1993) explained that the groups of individuals involved in the life-course-persistent behaviors are a relatively small group engaged in severe antisocial behaviors. These two pathways are further described in the following subsections.

Life-course-persistent behavior. Life-course-persistent antisocial behaviors start in early life and the main indicator of this category is maintaining their behavior over a long period of time. Moffitt (1993) suggested that as individuals age, there is continuance of antisocial behaviors and explained that these behaviors evolve. For example, a temper tantrum as an infant would be a characteristic of antisocial behavior, yet when the individual reaches adolescence they may be engaged in behaviors such as truancy and substance abuse, because temper tantrums would no longer be considered socially acceptable at this age. Moreover, a study conducted by Pitzer, Esser, Schmidt, and Laucht (2009) supported the idea of these problematic behaviors continuing by indicating that males with poor self-control at age 8 continued to have poor behavioral control at age 11, which was associated with externalizing behaviors during adolescence. The continuity of antisocial behaviors is an important aspect of Moffitt's (1993) taxonomy, but before an understanding how the behaviors continue, it is important to understand where the behaviors begin.

The life-course-persistent behavior taxonomy is known to be a developmental pathway, which begins early in life, and is characterized by specific observable antecedents, such as

prenatal maternal substance abuse, poor nutritional intake, and exposure to teratogens. Moffitt (1993) also suggested that individuals who are engaged in antisocial behaviors typically have some type of adverse neuropsychological functioning as infants, such as verbal deficits, learning disabilities, and poor executive functioning. Moreover, these infants had more difficult temperaments (Moffitt, 1993). Research by Caspi and colleagues (1994) supported these claims and indicated that difficult impulse control is associated with antisocial acts. Moffitt (1993) further explained that the combination of neuropsychological impairment and difficult temperament could lead to environment factors for the child that are less than desired, such as inconsistent discipline and impatient parents. The combination of these factors only allow for the continuance of the antisocial behaviors the children are displaying because of the cyclical chain of problems in the environment (Scaramella & Leve, 2004).

As these children age, Moffitt (1993) believed that the temper tantrums and neuropsychological deficits these individuals displayed would result in lower educational achievement and ultimately this would contribute to obtaining careers that have little opportunity for advancement in adulthood. Jeglum-Bartusch, Lynam, Moffitt and Silva (1997) supported this claim with their research which indicated that childhood antisocial behavior was associated with verbal deficits, such as low verbal ability. Furthermore, children who display behavior problems in classroom settings during early childhood are less likely to receive positive attention from a teacher, then leading to difficulty during middle childhood and adolescence in school (Hindshaw, 1992). This can ultimately lead adolescents to drop out, and the job opportunities for teenagers with less than a high school diploma are limited to unsatisfying choices such as fast food careers, and janitorial work. Furthermore, poor school achievement can place these individuals in less than optimal peer groups. Patterson, DeBaryshe, and Ramsey

(1990) explained that an individual's peer group could provide positive reinforcement for deviant behavior. For instance, deviant peer group's foster beliefs that are focused on motivation and rationalizations for deviant behavior, rather than focusing on positive influences such as educational attainment. Moffitt (1993) described this pattern of behavior for life-course-persistent individuals as a cumulative consequence in which the behavior of the individual as a child ultimately impacts their future as an adult. Moreover, Moffitt (1993) also indicated that individuals on this trajectory experience contemporary consequences as well, in which a group of behavioral traits that are the cause for problems in childhood continue into adulthood. Overall, the life-course-persistent category emphasizes the start of problematic behaviors early on and indicates that these behaviors continue throughout the individual's life due to consequences they face from their behaviors (Moffitt, 1993).

Adolescence-limited behavior. Although the life-course-persistent antisocial behavior is distinguished by the continuance of consequences, adolescence-limited antisocial behavior is distinguished by discontinuity in the behavior. Adolescence-limited individuals are only engaged in antisocial behavior during this particular developmental period and there is little to no antisocial behavior before or after this point of development (Moffitt, 1993). Individuals who follow the adolescence-limited antisocial behavior trajectory show no prior externalizing or antisocial behaviors before adolescence, and these individuals become involved in delinquency due to reinforcement in their behaviors, such that they receive attention from their peers for their negative behaviors (Moffitt, 1993).

Moffitt (1993) suggested that adolescence-limited behavior is grounded in the concept of reinforcement and punishment in regards to their behavior, which is reinforced by individuals around them and society. In contrast to the life-course-persistent pathway in which individuals'

behaviors are consistent, adolescence-limited behaviors vary based on the feedback they are provided. Adolescents will engage in delinquent behaviors as long as they are being provided with reinforcement, however, these behaviors can change at anytime if they start to receive more reinforcement for prosocial behaviors or receive punishment for their delinquent actions (Moffitt, 1993).

Further, Moffitt (1993) explained a maturity gap accounts for the variation in punishment and rewards for behaviors across different ages and gives insight to why delinquent behaviors are more rewarding for younger adolescents compared to older adolescents. For example, Moffitt (1993) suggested that one reason adolescents engage in delinquent behaviors is social mimicry, in which adolescents adopt the behavior of others for a specific reason and the reason was to gain mature status, or to be seen as an adult in comparison to a child. However, as adolescents age, they are less likely to engage in social mimicry because they obtain mature status by aging in general. For example, younger adolescents are more likely to smoke cigarettes to imitate the adult status but once they are able to drive and gain independence they no longer need the adult status that the cigarettes used to signify. Moreover, younger adolescents who are engaged in delinquent behaviors view delinquency as a way to show their independence, which can also serve as a reinforcer for this type of behavior (Moffitt, 1993). However, as these adolescents mature, they begin to obtain more independence from their parents and delinquency is no longer needed in order to accomplish the goal of mature status. As the individuals age, delinquency may be considered a punishment because of the consequences they can now face for involvement in illegal activities (Moffitt, 1993). For example, adolescents may begin stealing from others in order to obtain nice material objects (e.g., jewelry and technology) and their peers begin to pay more attention to them because of the material objects they have, which serves as positive

reinforce to continue to engage in the behavior. However, once teenagers begin to age, they are able to obtain jobs in which they can work for money to obtain these material objects and the idea of facing legal actions for stealing can be seen as a punishment. Therefore, the teenager would be more likely to work for their possession rather than to face the punishment of the law for stealing them. Research by Barnes and Beaver (2010) supported Moffitt's (1993) explanation, the maturity gap was a predictor of delinquency for males, such that males who had higher scores on the maturity gap were more likely to be engaged in delinquency compared to their peers who had lower scores on the maturity gap.

In sum, adolescence-limited behavior is largely based on the feedback that these individuals receive, which determines whether they become engaged in delinquent behaviors or abstain (Moffitt, 1993). Moreover, the maturity gap explains that younger adolescents are more likely to see reinforcement for their delinquent behaviors, in comparison to older adolescents who are more likely to view delinquency as punishment (Moffitt, 1993). Adolescence-limited individuals only engage in delinquency for a brief period, in which the behavior tend to provide reinforcement, however once the reinforcer is diminished the behavior typically ceases to exist (Moffitt, 1993).

Summary of theory. Moffitt's (1993) theory of life-course-persistent antisocial behavior was the groundwork for the developmental progression of externalizing behaviors to delinquency during adolescence in this study. Moreover, the theory will help provide insight into which factors are providing stability for these problematic behaviors. The theory provides a basic understanding of how these early behaviors can be key indicators of future problematic behaviors. The life-course-persistent theory will further be applied in subsections of this paper when possible to provide a better understanding of study. Moffitt's (1993) theory of life-course-

persistent antisocial behavior explained that the sustainment of the behavior is attributed to the cyclical chains of cumulative and contemporary consequences that these individuals experience. Cumulative and contemporary consequences could be considered a stressor on these individuals and cause them to not establish a bond to their society which can also lead them to delinquency when viewed through social control theory which is discussed in the next section. Although Moffitt's (1993) theory is imperative to understanding the transition from early to later behavior problems, it does not account for the bonds to our society which could ultimately impact the developmental progression of these problematic behaviors in early childhood and in turn break the cyclical chain that results in delinquency.

Social Control Theory

Social control theory explains that the causes of delinquency can be explained by an individual's lack of bonds to society (Hirschi, 1969). Furthermore, Hirschi (1969) explained that when individuals have strong bonds, such as attachment, commitment, involvement, and belief, they are less likely to engage in delinquency behavior. Hirschi (1969) argued that all individuals have the potential to engage in criminal but individual social bonds prevent them from engaging in them. However, once our social bonds to society are weakened or broken, individuals are free to become involved in these criminal behaviors because they no longer have social control. Social control is the concept that behaviors are impacted or controlled by our social environment. Agnew and Petersen (1989) supported this theory, participation in organized activities are associated with lower levels of delinquency, suggesting that bonds to activities deter individuals from becoming delinquent. The tenets of this theory are discussed below.

The first bond that Hirschi (1969) described is attachment, which consists of an individual's connection to their parents, peers, and schools. Hirschi (1969) explained that this

bond refers to the psychological affection that an individual has for other people, including their parents, family, and friends. Parental attachment is an important aspect of development and Hirschi (1969) explained that if an individual has a strong attachment to their parents, they are more likely to have a greater level of social control. However if an individual lacks attachment to their parents they are less likely to have control of their behavior or life, which can lead them to delinquency (Hirschi, 1969). In terms of the current study, both family structure and parental harshness fit into this aspect of the theory. The incorporation of this theory for these variables will further be discussed in the literature review.

The second bond that Hirschi (1969) described is commitment, which is considered the pursuit of conventional activities, such as education and personal future goals. Hirschi (1969) indicated that if an individual has a strong commitment to his/her personal goals or the goals of society, such as finishing high school, they would not want to be involved in criminal acts because it could endanger their future. For example, if adolescents are high achievers and are committed to their educational pursuits, they are less likely to engage in criminal acts because it could compromise their educational career. However, if individuals lack commitment to their goals and future, they are not afraid of the risk that these behaviors are associated with, therefore they are more likely to engage in the behaviors.

The third bond that Hirschi (1969) described is involvement, which consists of the amount of time individuals spend engaged in conventional activities, such as sports and religion. Hirschi (1969) implied that individuals who are highly involved and spend a lot of time in conventional activities would have little time to engage in criminal behaviors. For example, adolescents who spent the majority of their time in sports, have little time to participate in

criminal acts. However, adolescents who are not involved in sports have more time to become engaged in criminal behaviors.

The fourth and final bond that Hirschi (1969) described is belief, which is the sensitivity to the rights of others and respect for the official law. Hirschi (1969) explained that the more importance a person places on sensitivity and values, the less likely they are to engage in criminal behaviors. For example, adolescents that value the importance of a curfew are more likely to follow it. In contrast, individuals who do not value a curfew are more likely to stay out later, which could be associated with criminal acts.

Hirschi's (1969) social control theory explained that the weakening in any one bond could lead an individual to criminal behavior. Although Hirschi's (1969) bonds are related back to specific aspects of society, social control theory is ultimately about how different aspects of life control an individual's behavior, both directly and indirectly. For example, an individual who engages in prosocial behaviors with his/her religious group is more likely to continue this behavior when away from his/her religious group as well, compared to individuals who do not engage in prosocial activities. Social control theory provides the framework for understanding that when an individual lacks these bonds, they are more likely to become engaged in delinquent behaviors. This theory will further be explained in relation to the study throughout each subsection in the literature review when applicable. Overall, social control theory provides an explanation of how an individual's bond with society can ultimately influence their involvement or lack of involvement in delinquent activities.

General Strain Theory

The preceding two theories have explained how early behaviors influence later behaviors and the importance of social bonds with society. However, these theories do not account for

stressor that individual's face that can lead them to delinquency, which is discussed in general strain theory. General strain theory suggests that there are several types of strain that can lead to negative emotional state and ultimately give way to antisocial behaviors (Agnew, 1992). Agnew (1992) developed general strain theory on the original strain theory, which was developed by Merton (1938), who explained that strain caused by the inability to achieve personal goals leads to antisocial behavior. Agnew (1992) argued that it was not just one type of strain that would lead to antisocial behavior, but rather a variety of strains that can lead to such behaviors.

Agnew (1992) indicated that there are three major types of strain that can lead an individual to delinquency, which are, failure to achieve positively valued stimuli, removal of positive stimuli, and presentation of negative stimuli. After an individual has experienced a source of stain, they go onto the next phase, which is a negative emotional state. The negative emotional state consists of multiple emotional states such as anger, frustration, disappointment, depression, and fear. The negative emotional state leads to antisocial behavior such as drug abuse, delinquency, violence, or dropping out of school because they lack the means to achieve their personal goals (Agnew, 1992).

The first strain identified by Agnew (1992) was failure to achieve positively valued stimuli, in which individuals desire particular goals that are impossible to reach. For example, adolescents that value independence may engage in delinquent behaviors because they do not have autonomy, and thus they relieve their frustration by committing delinquent acts. This type of strain will be used to explain the ethnicity and SES risk factors in this study. The second strain identified by Agnew (1992) was the removal of positive stimuli, in which an individual loses a connection to something that has served as positive stimuli in their life. For example, adolescents that experience the divorce of their parents may display anger and frustration, which in turn can

lead to delinquency. The third strain identified by Agnew (1992) was the presentation of negative stimuli, in which an individual encounters a negative stimulus in their life. For example, harsh discipline practices that parents use on children could be considered a negative stimulus, which causes a child to anger, and could lead them to engage in delinquent behaviors. The presentation of a negative stimuli explanation of general strain theory will be used to explain the parental harshness factor in this study.

Each of the ideas present in Agnew's (1992) cause an individual to experience a negative emotion in return causes them to engage in delinquent behaviors. The idea behind general strain theory is that when faced with a stressful situation, individuals may not always cope in the most optimal ways, or at all, which can lead them to lives of crime. This theory will be further explained in relation to the study factors within each section when relevant. General strain theory provides a better understanding of the way in which adolescents experience situations and respond, which ultimately leads to a later outcome (e.g., delinquency). Overall, general strain theory provides a framework for understanding why when faced with less than optimal situations, such as parental harshness, or low SES, these individual engage in delinquent behaviors. However, they do not include the complexity of interactions of the environment and experiences of the adolescents, which the biopsychosocial model of risk-taking incorporates (Irwin & Millstein, 1986).

Biopsychosocial Model

The biopsychosocial model focuses on the intersection of multiple factors that influence risk-taking behaviors and developmental psychopathology, including biological, psychological, and social or environmental factors (Irwin & Millstein, 1986). The biopsychosocial model is a complex multidimensional model that allows for the incorporation of a variety of factors (i.e.,

biological, psychological, and environmental factors), which most models lack. Moreover, this model explains that these factors are mediated by risk perceptions (i.e., cost or benefits to the individual) and peer group characteristics (i.e., peer age and peer values), which then predict the risk-taking behaviors. This model allows for a better understanding of the complex interactions that may be seen in the stabilization of externalizing behaviors to delinquency in adolescence.

The biopsychosocial model indicates that biological maturation has a direct influence on four different areas of psychosocial functioning which include, cognitive scope, self-perceptions, social and environmental perceptions, and personal values, all of which are associated with risk-taking behaviors (Irwin & Millstein, 1986). A biological factor that is discussed in this chapter is children's sex, which predisposes children to risk-taking behaviors. Furthermore, psychological factors related to risk-taking behaviors include the risk perception (cost and benefit), and the social or environmental factors include maladaptive parenting styles, and SES, both of which are also explored in this study (Irwin & Millstein, 1986).

The biopsychosocial model is a complex, all-encompassing model to use when studying risk-taking behaviors such as delinquency. This model is considered an interdisciplinary approach to understanding risk behaviors (Compas, Hinden, & Gerhardt, 1995). The biopsychosocial allows for the incorporation of biological features, cognitive abilities, social aspects, and environmental factors in relation to risk taking behaviors (Irwin & Millstein, 1986). Moreover, the model focuses on the complexity of factors, which could influence each other in a variety of ways both directly and indirectly. The incorporation of the biopsychosocial model allows for a more multifaceted explanation of how particular factors stabilize behaviors in comparison to the previous theories mentioned for this study.

Summary of Theories

Each theory previously mentioned in the theoretical framework provides various explanations as to why individuals engage in delinquency or continue on to engage in delinquency during adolescence. Life-course-persistent taxonomy provides a foundation to understanding the long-term association between externalizing behaviors and delinquency. Furthermore, social control theory provides an explanation as to why individual deter from engaging in delinquent behaviors. Conversely, general strain theory provides insight to understanding why individuals engage in delinquency. Lastly, the biopsychosocial model offers an interdisciplinary approach to understanding risk taking behaviors, such as delinquency. The combination of these complimentary theories will be used throughout the study to provide more insight to the associations between variables in subsequent sections of the literature review.

Chapter 3

Literature Review

The following review of literature will provide background information relevant to the current study. First, an explanation of externalizing behaviors is provided and followed by a connection of how externalizing behaviors are directly linked to delinquency. Next, delinquency will be discussed in detail in reference to main effects of each risk factor other than prior externalizing behaviors (i.e., child sex, ethnicity, SES, family structure, and parenting practices) that are investigated, indicating what the literature has shown and identifying the gaps in literature. Delinquency is explained in general but the current study also focuses on differentiating between five subtypes of delinquency. Subsequently, support will be provided for the rationale of considering these risk factors as potential moderators of the associations between early externalizing problems and later delinquency. Lastly, a summary of the information that has been presented will be provided and then hypotheses for the current study.

Childhood-Era Externalizing Behaviors and Adolescent-Era Delinquency

As children, some individuals may be likely to engage in behaviors that are undesirable by social standards. The behaviors categorized as externalizing behaviors are defined as problems are marked by the child's outward behaviors that are disruptive to others (Fanti & Henrich, 2010; Hill et al., 2006; Liu, 2004; Thompson et al., 2011). The presentation of early externalizing behaviors can influence many adverse developmental outcomes throughout life. For example, externalizing behaviors in early childhood are predictive of delinquent behavior directly and indirectly via antecedents of delinquency, including poor academic success, peer rejection, and substance use (Fanti & Henrich, 2010; Lopez-Romero, Romero, & Luengo, 2012; Thompson et al., 2011). Furthermore, most research has shown a trend of externalizing behaviors

decreasing with age, however, a subgroup of children have chronic externalizing behaviors that are present in early childhood and persist throughout their lifetime (Hill et al., 2006; Reef et al., 2009; Thompson et al., 2011; Webster-Stratton, 1996).

Externalizing behaviors consist of multiple subtypes of behaviors that children display, for instance, aggression, hyperactivity, defiance, and destructive behaviors (Thompson et al., 2011). Each of these behaviors is comprised of their own distinctive traits. For example, aggression and defiance in early childhood is typically more prominently displayed in boys than in girls (Bongers et al., 2004; Reef et al., 2009). Furthermore, when females display this behavior during childhood it tends to be a warning signal for later disruptive behaviors (Bongers et al., 2004; Reef et al., 2009). For example, girls who showed poor self-control at age two had higher levels of externalizing behaviors during adolescence (Pitzer et al., 2009). Furthermore, Hill et al. (2006) indicated that emotional regulation at age two was a key indicator for differentiation between chronic clinical level later externalizing behaviors seen in girls but not for boys, yet SES was a key predictor of later externalizing behaviors for boys, not girls. These studies indicate that it is important to study and understand early externalizing behaviors.

The presentation of early externalizing behaviors regardless of sex are problematic and research has shown that a portion of the young children displaying problematic behaviors already meet the classification for Oppositional Defiant Disorder (ODD) and Conduct Disorder (CD) by early to middle childhood (Bongers et al., 2004; Frick & Kimonis, 2008; Webster-Stratton, 1996). The *DSM-IV-TR* (2000) criteria for ODD consist of the observation of four out of eight symptoms that persist at least six months, which includes losing ones' temper, arguing with adults, being defiant or noncompliant, being deliberately annoying, blaming others for mistakes, being touchy or easily irritated, being angry or resentful, and being spiteful or vindictive (APA,

2000). The presentation of childhood ODD is less severe but is a predictor of CD in children (Volpe & Chafouleas, 2011). Children who are diagnosed with CD display a persistent pattern of behaviors that violate social norms or infringe on the rights of others, and they demonstrate at least three behaviors for more than 12 months, which include engaging in bullying or threatening behaviors, initiating fights, using weapons, involvement in cruelty to others, engaging in cruelty to animals, involved in mugging, engaging in the force of sex, engaging in property break-in, conning others, involvement in shoplifting, engaging in fire setting, involvement in vandalism, engaging in frequent truancy, engaging in staying out all night, and engaging in running away (APA, 2000). In a study conducted by Timmermans, van Lier, and Koot (2009) the results showed a clear association between early oppositional behaviors at age five, to oppositional behaviors at age ten, which in turn led to status violations and delinquency at age 18.

Externalizing behaviors that are present during early childhood and continue into adolescence are particularly problematic. This pathway of problem behavior has been labeled by the current *DSM-IV-TR*, disruptive behavior disorders (APA, 2000). The *DSM-IV-TR* (2000) shows a progression of problem behaviors that starts with oppositional and noncompliant behaviors in early childhood, progresses to antisocial and aggressive behaviors in middle childhood, and continues to delinquency and substance use or abuse in adolescence. The display of externalizing behaviors at an early age is termed early-onset externalizing behaviors and are precursors for more problematic behaviors (Hill et al., 2006; Moffitt, 1993; Ruchkin, Koposov, Vermeiren, & Schwab-Stone, 2003). Early-onset externalizing behaviors in children are stable and are linked to adverse outcomes throughout the individuals' entire lifetime and tend fall into the life-course-persistent subgroup of antisocial behavior as described by Moffitt and colleagues (Hill et al., 2006; Moffitt, 1993; Ruchkin et al., 2003; White, Moffitt, Earls, Robins, and Silvia,

1990). Although the *DSM-IV-TR* (2000) does not identify early-onset externalizing behaviors, there is a diagnosis for early-onset conduct disorder, for children who display at least one conduct problem before the age of ten years old. Children that have been diagnosed with early-onset conduct disorder are at a higher risk for delinquency during adolescence and throughout their lifetime (Ruchkin et al., 2003; Webster-Stratton, 1996). Ample research has indicated an association between early externalizing behaviors and delinquency during adolescence, yet most focused on the main effect rather than moderated effects.

According to Campbell (1995), externalizing behaviors in childhood are the most common form of maladjustment. Externalizing behaviors are known to change in frequency as children age, with the typical pattern of the behaviors decreasing as children age (Reef et al., 2009; Thompson et al., 2011). As children develop they make significant gains in language, cognitive, and regulatory skills, which all contribute to the decrease in externalizing behaviors (Hill et al., 2006; Kiff, Lengua, & Zalewski, 2011). For example, during early childhood, a common presentation of externalizing behaviors are temper tantrums and defiance, which most children learn to control by obtaining regulatory skills that allow them to adapt to and manage challenging situations (Fanti & Henrich, 2010; Hill et al., 2006). However, a small percentage (i.e., five to seven percent of the population) of children who present externalizing behaviors do not grow out of them (Moffitt, 1993).

As described above, externalizing behaviors in early childhood are linked to delinquency in adolescence and can be an indicator of the life-course-persistent behaviors (Ruchkin et al., 2003; Webster-Stratton, 1996). Although all children who display externalizing behaviors do not go on to become delinquent in adolescence, there is a subgroup of individual that do continue to display these problematic behaviors. The goal of this study is to further expand on the main

pathway of behaviors and to identify the particular factors that stabilize problematic behaviors over time.

Delinquency and Prior Externalizing Behaviors

Previous research has indicated that there is a positive correlation between criminal behaviors and early childhood externalizing behaviors (Timmermans et al., 2009). In addition, the *DSM-IV-TR* (2000) has identified a pathway of problem behavior from early childhood to adolescence, consisting of noncompliance, opposition defiance, and temper tantrums in early childhood that can ultimately lead to delinquency, substance use, and high risk sexual behavior in adolescence (Cicchetti & Cohen, 2006). This correlation can be explained by the biopsychosocial causal model which indicated that there are individual and environmental risk factors that interact with a person's social and family experiences that can eventually lead them down a path from early externalizing behaviors to delinquency in adolescence (Hussey, Drinkard, Falletta, & Flannery, 2008). Delinquency is a consequence of problematic behavioral development and is related to many adverse outcomes such as poor academic performance, high risk of crime victimization, criminality, unemployment, mental health problems, and the reduction of the youth's chances of normative adaptation to adult social functioning (Thompson et al., 2011; Timmermans et al., 2009). Involvement in delinquency varies based on multiple factors, and the first factor that will be investigated in the present investigation is child sex.

Children's Biological Sex

The first potential main effect considered in this investigation was child sex. Throughout history females have shown lower rates of delinquency compared to their male counterparts, however little research has investigated the differences in delinquency rates for males and females (Junger-Tas, Ribeaud, & Cruyff, 2004). Perhaps the lack of research on female

delinquency is because females were rarely represented in crime statistics until the 1970s (Junger-Tas et al., 2004). During the 1960s and 1970s researchers noticed a surge in female offending and began tracking their statistics (Junger-Tas et al., 2004). Although females have gained attention in society for equality, the investigation of criminality and juvenile delinquency still tend to exclude girls from the majority of studies. The exclusion of females in research could be due to the fact that researchers have easier access to study delinquency with males because they are socialized to display more aggressive behavior from younger ages in comparison to females. Research to date has consistently indicated that males show higher levels of delinquency, and the large portion of intervention programs are created with males in mind (Miller, Malone, & Dodge, 2010; Whitney, Renner, & Herrenkohl, 2010; Wong et al., 2012). Effective prevention and intervention programs must be geared to target factors that are considered to be high risk, and may include gender specific programs. This study intends to identify if child sex contributes to the stability of externalizing behaviors.

Research is beginning to show differentiation in crime patterns between males and females. For example, Miller et al., (2010) identified four developmental trajectories of delinquent behaviors: non-problem, increasing, desisting, and chronic. These trajectories each showed differential patterns of delinquent behaviors by sex, as expected, males make up the majority of the chronic group. However, females' involvement in the increasing group is of particular interest because the percentages of involvement are equal with 40 percent of males and females involved in this trajectory (Miller et al., 2010). The equal representation of boys and girls in this category could be explained by Moffitt's (1993) adolescent-limited offender pathway, in which adolescents become involved in antisocial behavior only for a short duration of time. Moreover, this study indicated that females (38%) made up a larger proportion of low

criminal behavior group, compared to males (29%) in 12th grade (Miller et al., 2010). This indicates that although females are not involved in the high rate of delinquent acts that males are, they are often still involved in some aspect of delinquency, but their patterns and risk behaviors are different than are males.

Although researchers are starting to take into consideration distinct trajectories of offending, few studies have investigated main effects for sex when it comes to delinquency. Moreover, even fewer of these studies have differentiated between types of delinquency, instead focusing on delinquency as a single variable. Overall, the majority of research that has studied delinquency as a single construct indicated that males are involved in a higher rate of delinquency when compared to females (Whitney et al., 2010). In a study conducted by Steketee, Junger, and Junger-Tas (2013), males committed higher rates of delinquent acts (i.e. minor property, serious property, minor violent, and serious violent offences) than females. Furthermore, the OJJDP (2010) provides statistics that back up the Steketee et al. (2013) results by indicating that males have higher rates of delinquent behaviors (i.e., violent crimes, property crimes, and drugs crimes). Moreover, males engage in more minor offenses, yet females have a higher rate of running away than males (Steketee et al., 2013).

The differential involvement in delinquency by sex can be explained by a variety of theories. First, society has traditionally indicated that males commit more crimes than females and Moffitt (2006) indicated that the life-course-persistent behavior taxonomy was typically applicable to mainly to males. This claim by Moffitt (2006) can further be supported by the biopsychosocial model, which indicates that certain environmental factors and socialization processes (e.g., parenting practices and parental control) are related back to increased risk for males to engage in delinquency in comparison to females. This model explains that parental

control on children, in addition to the parental support children receive and parental influence on children, can lead to risk-taking behaviors, such as delinquency for these children (Irwin & Millstein, 1986). This theory further explains that social influences, such as gender socialization, are responsible for involvement in delinquency (Irwin & Millstein, 1986). One social influence that impacts delinquency is cultural beliefs or expectations. In the United States parents engage in specific socialization practices that are associated with a particular gender (Leaper & Friedman, 2008). For instance, males are socialized to engaged in more physical activities whereas females are encouraged to engage in more nurturing activities (Leaper & Friedman, 2008). Furthermore, males engage in rough and tumble play during childhood, which provides reinforcement that more aggressive behaviors are acceptable for males (Leaper & Friedman, 2008). Early gender socialization sets the stage for the future behaviors, in which these individuals will engage. As children age, the socialization process continues to encourage males to be more physical and females to engage in more nurturing activities, which could account for the higher involvement of males in violent acts of delinquency (Leaper & Friedman, 2008).

To further understand that greater involvement of boys in delinquency compared to females, in particular girls reduced rates of involvement in delinquency, social control theory can be used. This theory explains that bonds to society deter individuals from engaging in criminal behaviors (Hirschi, 1969). Society pushes women to have a stronger attachment to their families in comparison to men. According to research by Heimer (1996), a girls attachment, specifically their family, can be associated with reduced rates of delinquency because family values encourage adolescents to avoid criminal behavior. Moreover, Heimer (1996) indicated that the perception that female peers would not approve of involvement in criminal behavior deters them. Social controls that regulate behaviors vary greatly depending on an individual's sex and

typically social control (e.g., parental monitoring) is more evident for females (Carlo, Raffaelli, Laible, & Myer, 1999).

Although females tend to be under more social control pressure, they have higher rates of running away in comparison to males (Benoit-Bryan, 2011). According to a study conducted by Hawkins, Graham, Williams and Zahn (2009), females who have supportive parental figures are less likely to engage in delinquency. Much of the research on delinquent females indicate that they have more dysfunctional home lives or experience more risk factors in comparison to their male counterparts. Research by Wong and colleagues (2012) supports the claim that delinquent females experience more risk factors compared to delinquent males. One study indicated that there were distinct differences in the threshold levels for males and females, in which females had a higher risk threshold in childhood (i.e., it takes more risk factors to impact female delinquency rates than it does for males) (Wong et al., 2012). Even though more risk factors are required to show an increase in delinquency for girls, the results showed that for each risk factor additional risk factor that a female experienced or was exposed to, there was also an increase in delinquency (Wong et al., 2012). This study indicated that although both males and females were delinquent and exposed to similar risk factors there are differences in their response to them. Females become more sensitive to the risk factors as they accumulated which was observed by the dramatic parallel increase in delinquent behaviors. Conversely, males show similar levels of delinquency regardless of the numbers of risk factors. The differences in social control and socialization of males and females are distinct and could explain some of the variance in terms of delinquency.

The majority of research that has been focused on delinquency has overlooked the influence of social control and socialization in terms of sex and delinquency. However, social

control theory and the biopsychosocial model clearly indicate that males and females are socialized in specific ways geared towards their sex (Irwin & Millstein, 2986). These differences could be responsible for the dramatic differences that are seen in delinquency rates, and provide further support of the life-course-persistent behavior which indicates that males having higher rates of involvement compared to females (Moffitt, 2006; Whitney et al., 2010). Although males have higher rates of engagement in delinquency, further research is needed to understand what factors are associated with the higher rate. Furthermore, this study will help broaden the knowledge base on early disruptive behaviors displayed by females since there is little research to date on female involvement. Ultimately this study will allow researchers to have a better understanding of the stability of externalizing behaviors from early childhood to delinquency in adolescence for both males and females. The behaviors that both males and females display are largely influenced by socialization processes, which can be contributed back to cultural variations and ethnicity and will be discussed next.

Children's Ethnicity/Race

When studying delinquency, or behaviors in any aspect, ethnicity and race is an important dimension to consider. Race is related back to an individual's physical appearance, such as their skin color, eye color, and hair color. Ethnicity defines a person in terms of common culture, beliefs, values, and traditions (Gardiner & Kosmitzki, 2008). These cultural differences could provide details into understanding why we see particular behaviors in specific ethnic groups. Ample research has shown that racial and ethnic minority groups are highly overrepresented in crime statistics, which suggests that ethnic minority youth engage in higher levels of delinquency than do ethnic-majority youth (Miller et al., 2010; Whitney et al., 2010). However, less research has investigated the ethnic differences in the pathway from early

childhood externalizing behaviors to delinquency in adolescence. This section will further focus on the main and moderated effects of ethnicity on delinquency.

Ethnicity accounts for a portion of the social, cultural, and economic variations displayed in society (Kulis, Marsiglia, Kopak, Olmsted, & Crossman, 2012). Minority ethnic groups are more likely to be at risk for adverse social and economic risk compared to the majority ethnic group and these risk factors (e.g., SES and neighborhood) could account for the ethnic minority groups increased involvement in delinquency (Miller et al., 2010; Whitney et al., 2010). In terms of the five dimensions of delinquency in this study, the involvement of individuals within each dimension varies according to the type of crime and the individual's racial/ethnic background. In general, research has shown that African American adolescents engage in higher rates of delinquent behaviors compared to other ethnicities (Harden et al., 2009; Thompson et al., 2010). Moreover, African Americans accounted for more than half of all juveniles that are arrested for violent crime, and approximately one-third of those arrested for property crime (United States Department of Justice, 2012). In contrast, according to the Centers for Disease Control and Prevention's Youth Risk Behavior Surveillance System (2011), African Americans fall behind Hispanics when it comes to illicit drug use. Hispanics not only have higher rates of illicit drug use, but they also have a younger age of initiation of alcohol use, compared to Caucasians and African Americans (CDC, 2011). This is further supported by Wu, Woody, Yang, Pan, and Blazer (2011), who indicated that Hispanics and Caucasian adolescents have higher rate of drug use, in comparison to African Americans. However, the Office of Juvenile Justice and Delinquency Prevention (2010) suggest otherwise, in that in terms of drug offense arrest rates, African Americans had the highest rates of drug crime followed by Caucasians, American Indian, and Asian. Lastly, in terms of minor crime, African Americans had the highest rate of

breaking curfew and running away compared to Caucasians and Asians (OJJDP, 2010). In sum, ethnic differences are seen in each dimension of delinquency, with ethnic minority youth demonstrating higher levels than European American teens in all areas of delinquency.

Various explanations have been offered for these observed differences. One is that ethnic minorities are impacted by a wider variety of adverse life situations (i.e. low educational achievement, poor healthcare, poverty, and family disruptions) compared to ethnic majority individuals (Bogart et al., 2013; Kulis et al., 2012). General strain theory provides a framework to explain the association between ethnic minorities and higher rates of delinquency, in terms of adverse or stressful situations. General strain theory suggested that various sources of strain (e.g., failure to achieve goals, and poor neighborhoods) interact with an individual's emotional traits (e.g., disappointment and anger) to produce criminality (e.g., delinquency and drug abuse) (Agnew, 1992). This theory indicated that individuals who experience multiple stressors are likely to experience negative emotions as a result of these stressors, in which their negative emotions lead to their involvement in delinquent behaviors (Agnew, 1992). Similarly, social control theory also supports the idea that stressors impact individuals' involvement in delinquency (Hirschi, 1969). Social control theory provides a foundation to explain why individuals who experience adverse life situations, such as low educational achievement, may become more involved in delinquency (Hirschi, 1969). Both social control theory and general strain theory provide explanations as to why ethnic minorities are more likely to be engaged in delinquent behaviors compared to ethnic majority groups. For instance, ethnic minorities may have the same aspirations for careers and future than their peers do but may lack the opportunity to achieve their aspirations, which can result in weakened bonds with society, resulting in less social control and deterrence from delinquent acts. Although these two theories support the idea

that ethnic minorities are at increased risk for delinquency, there is also evidence that indicates that ethnicity can be a protective factor against some forms of delinquency.

Minority ethnic groups are typically referred to as being at risk, however, African American's are at reduced risk for drug crimes, as predicted by the belief component of social control theory (Hirschi, 1969). Research by Belgrave, Townsend, Cherry, and Cunningham (1997) indicated that African Americans place a heavy emphasis on their spiritual beliefs, which encourage abstinence from drugs. According to social control theory, African Americans that value their belief system will be less likely to be engaged in drug offenses. The combination of theories allows for more detailed information explaining the link, either positive or negative, between delinquency and ethnicity. Other protective factors for ethnic minority groups include familialism, parental involvement, and ethnic identity (Brook & Pahl, 2005).

An individual's ethnicity and culture is likely to influence their life, such that, their types of behaviors and beliefs and can ultimately shape their involvement in delinquent behaviors (Harden et al., 2009). African-Americans have higher rates of delinquency across some dimensions compared to other ethnic groups (Harden et al., 2009; Thompson et al., 2010). Their high involvement could be related back the daily stressors they face or their commitment to their society. African Americans and Hispanics, both of which make up the dominant ethnic groups in delinquency, have lower socioeconomic status (SES) compared to Caucasians, and low SES is another risk factor associated with delinquency (McNulty & Bellair, 2003). The association between SES and delinquency is discussed more in detail in the next section.

Socioeconomic Status

Familial resources such as limited economic resources can influence the development of individuals in maladaptive patterns (Low, Sinclair, & Shortt, 2012). Research demonstrates that

lower SES families have less familial and social supports for parenting and they are likely to be under more pressure, which can in return creates poor social contexts for their children to develop and learn from (Low et al., 2012). Research that has investigated delinquency tends to control for SES rather than specifically looking at the association between the two variables. This study seeks to identify the path between low SES and delinquency.

In general, research has shown that low SES is associated with higher levels of delinquency (Whitney et al., 2010). Furthermore, Heck and Walsh (2000) indicated that individuals with lower SES had higher levels of delinquency in both violent and property crime. In terms of substance use, Agnew, Matthews, Bucher, Welcher, and Keyes (2008) indicated that economic problems were positively correlated with self-reported drug use. More research is needed in this area to focus on the various ways that SES can influence different types of delinquent behaviors.

Social control theory provides more insight to the idea that individuals from lower SES have fewer social controls that ultimately deter them from engaging in delinquent behaviors (Hirschi, 1969). Social control theory indicates that individuals who have strong attachment and high levels of involvement in activities are less likely to engage in delinquency. For instance, individuals that come from lower SES households may have weaker attachments to their parents for a variety of reasons, such as lower SES households tend to work longer hours and may have less time to form these attachments and supervise their children compared to individuals from higher SES households. Additionally, children that have less involvement than their age mates in conventional activities, such as sports, are more likely than their involved peers to engage in delinquent behaviors. For instance, lower SES households may not have the economic means to

provide their children with the correct sports equipment and therefore these children do not participate in conventional activities that deter them away from delinquency.

Moreover, general strain theory provides insight into why individuals of lower SES are more likely to be involved in crime compared to individuals of high SES backgrounds. General strain theory indicates that when aspirations exceed their actual potential for achievement individuals engage in crime to achieve their aspirations (Agnew, 1992). For instance, individuals that come from lower SES households may have the same aspirations as their higher-class age mates; however, they do not have the same means to reach their aspirations. For this reason, general strain theory indicates that this type of strain causes stress on an individual, which can lead to negative emotions, such as frustration, that in return can cause an individual engage in delinquency.

SES may be a very influential factor on the decision to engage in delinquency and this study will help broaden the understanding of this association. Social control theory suggests that individuals engage in crime because they are less connected to their environment than their peers, and therefore have little social control to deter them from engaging in crime (Hirschi, 1969). General strain theory suggests the pathway between SES and delinquency occurs because individuals from low SES households do not have the resources available to achieve stability without engaging in crime (Agnew, 1992). Unfortunately, the gaps in the literature prevent from a full understanding how SES is related to the different types of delinquency, which is a gap this study aims to fill. Although low SES may account for some of the differences between youths involvement in delinquency, SES is additionally related to family structure, in which single-parent households tend to have lower incomes compared to two-parent households. The succeeding section explains the association between family structure and delinquency.

Family Structure

A child's behavior and adjustment is largely the result of the socialization, parenting practices, and observable influences (e.g. family emotional expressiveness, and marital relationship) of their family (Morris, Silk, Steinberg, Myers, & Robinson, 2007). According to research, a two-parent family household is a protective factor for children and these individuals are at a lower risk for delinquency compared to children who are raised in single parent households (Schroeder, Osgood, & Oghia, 2010; Wells & Rankin, 1991). Although studies have indicated that two parent households are more beneficial (e.g., stable home environment, and consistent parenting practices) for children there is little consensus on the definition or types of family structures used in research, which makes it difficult to study the impact of family structure on delinquency (Kierkus & Hewitt, 2009)

Family structures in previous studies have been labeled in a variety of ways. A two-parent household can hold multiple meanings for different researchers. A study conducted by Schroeder and colleagues (2010) identified two-parent households as two biological parents, a biological mother and stepfather, and a biological father and stepmother. In addition, a single parent household may be identified simply as a single parent, while other studies differentiate between single mothers and father (Demuth & Brown, 2004; Kierkus & Hewitt, 2009). Furthermore, this same trend is seen with stepparents, with some research studies including a single parent and stepparent, while others identify mother and stepfather, and father and stepmother (Demuth & Brown, 2004; Kierkus & Hewitt, 2009). Kierkus and Hewitt (2009) indicated that in any type of alternative family structures (i.e., all family structures except the two-parent biological type) was worse in terms of general delinquency. Moreover, research by

Demuth and Brown (2004) suggested that children from single father headed households had higher levels of delinquency compared to children from two biological parents and stepfamilies.

Although definitions of family structures vary when studying delinquency, there is some common consensus about their impact on children's involvement in delinquent behaviors. Research has indicated that two biological parent married households show the most desirable outcomes in terms of delinquent behavior for children because these children have consistent parenting practices and control on their behaviors, whereas individuals who experience parental divorce are more likely to have inconsistent parenting (Demuth & Brown, 2004; Wells & Rankin, 1991). Nevertheless, regardless of the make-up of a family structure, people with variable families had higher rates of all delinquency types (Demuth & Brown, 2004; Kierkus & Hewitt, 2009). When broken down into types of family structures, Kierkus and Hewitt (2004) indicated that adolescents from single parent households had higher levels of general delinquency and substance use, children from single parent and a stepparent household have higher rates of violent crime, and lastly, children from single parent and another relative household have higher rates of property crime. Furthermore, children from single father households have higher rates of all delinquency types (i.e. total delinquency, petty property, serious property, and violent delinquency) compared to children from other households (Demuth & Brown, 2004). Although children from single fathers households have the highest rate of delinquency, the father and stepmother household, and the single mother households also have higher rates of delinquency (Demuth & Brown, 2004).

Results from multiple studies indicate that involvement in delinquency varies depending on family structure, which can be explained partially by social control theory.

According to social control theory, children in two-parent households are likely to have a stronger attachment to their parents and their behaviors are more likely to be controlled by indirect factors such as psychological control, parental expectations, and their attachment (Hirschi, 1969). This theory indicates that an individual that has a strong attachment will be concerned with the wishes and expectations of other people such as their family. For instance, an individual that comes from a broken or single parent home may not experience a bond as strong as an individual that comes from a biological two parent home and therefore would have less social control on their behaviors. In addition to social control, another factor that may influence problematic behaviors individuals from single parent households are stress.

General strain theory focuses on the idea that individuals who are placed under stress and unable to regulate negative behaviors, gives way to antisocial behaviors such as delinquency (Agnew, 1992). Children that come from single parent households may experience more stress due to financial problems compared to children who come from two parent households. Furthermore, the biopsychosocial model continues to provide an understanding of the association between delinquency and family structure, which illustrates that a combination of parental control and parental support are all risk factors (Irwin & Millstein, 1986). Children from single parent households are likely to have less parental control and parental support (Demuth & Brown, 2003). The lack of parental involvement is typically a result of the parent having to work to provide the financial means for the family, which leads to less interaction with their children (Patterson et al., 1990). These theories all indicate that the lack of a second parent has a negative impact on the child, which can lead to delinquent behaviors.

Family structure, regardless of the make-up, has a significant impact on the development of children. Although the research lacks uniformity in the definitions of family structure, one

aspect is clear: two parent households are more beneficial for child development when compared to a single parent household (Demuth & Brown, 2004; Kierkus & Hewitt, 2009; Wells & Rankin, 1991). Children that are raised in a single parent household are more likely than their counterparts to become involved in delinquency (Demuth & Brown, 2004; Kierkus & Hewitt, 2009). Furthermore, the theories that are used to provide the framework for family structure indicate that single parents have less control and attachment to their children, which can lead youth down a path to delinquency. Regardless of the variance in terms of family structure, single parent households are considered to be a risk factor for delinquency (Kierkus & Hewitt, 2009). Moreover, single parent households tend to use harsher discipline practices compared to two-parents households, which is discussed in the next section.

Harsh Parenting Practices

The family plays an important role in the development, positive and negative, short-term and long-term, of children (Bornstein & Sawyer, 2008). Parents guide the majority of a child's early socialization and therefore, the behaviors they display in front of their children are crucial (Bornstein & Sawyer, 2008). The child rearing practices that are used with children from early ages can begin to influence their development in adaptive or maladaptive ways (Bradford et al., 2003). For example, children who display externalizing behaviors at an early age tend to receive punitive punishment from their parents. The lack of supportive parenting in turn cause these children to have problems regulating their emotions and can result in an ongoing cyclical pattern (Miner & Clarke-Stewart, 2008; Patterson et al., 1990; Scaramella & Leve, 2004). Research has suggested that children who demonstrate externalizing behaviors at an early age and experience harsh parental practices have higher rate of externalizing behaviors (Leve, Kim, & Pears, 2005).

Although research has investigated the association between harsh parental practices and externalizing behaviors, there are few studies that look at parenting practices association with delinquency, specifically the delineated delinquency measures. In terms of general delinquency, Whitney and colleagues (2010) suggest that parental responsiveness is associated with lower levels of delinquency. These results indicate that children who have sensitive parents are less likely to be involved in delinquent activities compared to their peers who have harsh parents. Moreover, Bradford and colleagues (2003) explain that delinquent youth tend to come from homes that have harsh and inconstant discipline, in addition to low monitoring. In addition, parents who are physically hostile towards their children are more likely to have children that are physically aggressive (Pagani et al., 2004). Furthermore, children who receive the combination of harsh parental practices and the lack of parental warmth have higher levels of delinquency in compared to children who receive parental warmth and adaptive parenting practices (Simons, Wu, Lin, Gordon, & Conger, 2000).

Parenting practices, specifically, harsh parenting practices can be adverse for children. According to Dodge and Pettit (2003), the biopsychosocial model can be used to understand the association between parenting behaviors and delinquency. Dodge and Pettit (2003) explained that sociocultural factors and life experience, specifically harsh treatment, places an individual at higher risk for delinquency. Moreover, as previously mentioned, harsh parenting practices can result in the infant having less emotional control, which can lead to anger outburst in infancy and childhood and ultimately physical aggression during adolescence (Miner & Clarke-Stewart, 2008). General strain theory indicates that when individuals experience negative stimuli, like harsh parental practices, and then experiences a negative emotion, such as anger, it is likely to

lead to delinquency (Agnew, 1992). Both of these theories provide a foundation to understanding why harsh parenting practices have negative outcomes for children.

Although multiple factors can influence an individual's probability of being delinquent as a teenager, the literature provides background on the association between harsh parenting practices and delinquency during adolescence. Harsh parenting practices are associated with parents who lack warmth and sensitivity in terms of child rearing and are associated with children being defiant and aggressive (Barber & Harmon, 2002). For example, when children lack sensitivity from parents, they being to develop poor regulatory skills and poor emotional expression, which can lead to maladaptive behaviors in adolescence. These undesirable patterns that start in childhood are associated with maladaptive behaviors in adolescence (Miner & Clarke-Stewart, 2008). The further explanation of the moderation of parenting practices will be discussed in the following section.

The Current Study

The typical trend of externalizing behaviors occurs with a peak in early childhood (i.e., four to six years old) and then experiences a slow regression into adolescence (Bongers et al., 2003). Little research has investigated the pathway of early childhood externalizing behaviors to delinquency in adolescence, which could be beneficial in the development of both prevention and intervention programs for at-risk youth, which is the overarching study purpose. Furthermore, the purpose of this study is to examine the effects of five potential influences (i.e., children's sex, ethnicity/race, SES, family structure, and harsh parenting practices) on an individual's delinquency in adolescence.

Main effects. The present study had three aims, the first aim was to investigate association between childhood externalizing behaviors and delinquency in adolescence.

Furthermore, one objective was to investigate five separate types of delinquency, in addition to the overall delinquency. The hypothesis for the first aim was that early childhood externalizing behaviors would predict higher levels of all types of delinquency in adolescence. The second aim was to describe associations between other risk factors (i.e., children's sex, children's ethnicity/race, SES, family structure, and harsh parenting practices) and later delinquency. The first hypothesis was the main effect of child sex, it was predicted that males would have higher levels of all types of delinquency in adolescence. The second hypothesis was that African Americans and Hispanics would have higher levels of violent offenses, property offenses, and minor offenses compared to Caucasians. However, it was hypothesized that African Americans would have lower levels of drug crime in comparison to Hispanics. The third hypothesis was that children from lower SES households compared to children from higher SES households, during early childhood, would have higher levels of all types of delinquency in adolescence. The fourth hypothesis was that children from single parent and other parent household would have higher levels of all types of delinquency during adolescence compared to children from two parent biological households. However, it was further hypothesized that children from variable households would have higher levels of all types of delinquency in comparison to children from single parent household. The fifth hypothesis was that children who have parents that display harsh parenting practices (i.e., spanked their children) would have higher levels of all types of delinquency in adolescences compared to children who were not spanked in early childhood.

Moderated effects. The third and final aim was to explore whether these risk factors moderated associations between early childhood externalizing problems and adolescent delinquency. This study intended to assess whether associations between externalizing behaviors and delinquency differed as a function of children's sex, children's ethnicity/race, SES, family

structure, and harsh parenting practices. The moderated effects hypotheses outcomes were based on delinquency in general, rather than the six dimensions of delinquency, since there is little research on the moderated effects. However, for the purpose of results and contributions to literature, the results investigated the moderation effects on six delinquency types. Moderated effects were investigated to provide more information on which particular factors stabilize the externalizing behaviors to delinquency in adolescence.

The first moderator that was examined was children's sex. The hypothesis for children's sex was that the association between prior early childhood externalizing behaviors and later delinquency would be stronger for boys than for girls. According to previous research males who have previous externalizing behaviors have higher rates of delinquency in adolescence (Miller et al., 2010). Moreover, it was expected that girls without prior externalizing behaviors would show lower rates of delinquency in comparison to other girls. The reasoning behind this was that research has shown that girls were less likely to be delinquent, and no previous displays of externalizing behaviors puts them at a lower risk for delinquent behavior (Junger-Tas et al., 2004).

The second moderator that was examined was children's ethnicity/race. The hypothesis was that the association between previous early externalizing behaviors and later delinquency would be stronger for African Americans and Hispanics for all areas of delinquency except illicit drug use and licit drug use. It was hypothesized that Hispanics would show a stronger association between early externalizing behaviors and illicit drug use and licit drug use in adolescence than African Americans. Previous research has indicated that Hispanics have higher rates of drug offenses in comparison to African Americans and Caucasians. Moreover, Caucasians without prior externalizing behaviors were expected to be predictive of lower levels of delinquency

because both of these factors are associated with lower risk (Laird, Pettit, Dodge, & Bates, 2005).

The third moderator that was examined was SES. It was expected that children of lower SES who displayed prior externalizing behaviors would engaged in higher levels of all types of delinquency in comparison to youth with or without externalizing behaviors from high SES households (Low et al., 2012). In contrast, it was expected that children from higher SES households with no prior display of externalizing behaviors would show lower levels of delinquency in comparison to youth from high SES households with prior externalizing behaviors.

The fourth moderator that was examined was family structure. It was hypothesized that there would be a stronger association between early childhood externalizing behaviors and later delinquency in single-parent and other types of households, compared to children with or without externalizing behaviors from two parent households, which has been supported by previous research (Wells & Rankin, 1991). Furthermore, it was expected that this association would be stronger for the other parent household in comparison to single parent households. In contrast, it was expected that children from two-parent households, without externalizing behaviors, would have lower levels of later delinquency in comparison to children from two-parent households with externalizing behaviors (Schroeder et al., 2010).

The fifth and final moderator that was examined was harsh parenting practices. It was hypothesized that association between the early externalizing behaviors and later delinquency would be stronger for children who receive harsh parental practices (Leve et al., 2005). In contrast, children who did not receive harsh parental practices and/or did not show previous externalizing behaviors would show lower levels of delinquency compared to children who did

receive harsh parenting practices (Whitney et al., 2010).

Research has shown that externalizing behaviors in early childhood have progress into delinquency during adolescence, however little is known about what specific factors contribute to the continuance of this behavior to delinquency in adolescence (Timmermans et al., 2009). This research will contribute largely to the current literature on early childhood externalizing disorders by providing information about differences in pathways to delinquency, in addition to some possible moderators of early externalizing behaviors on later delinquency. Delinquency is related to poor outcomes throughout individuals' lives such as, poor educational attainment and mental health problems and this study could be essential in creating prevention and intervention programs (Timmermans et al., 2009).

This study is novel in several ways and will contribute to the current literature. To date research that has been conducted on delinquency tends to focus on males whereas this research provides a better understanding of the factors associated with females externalizing behaviors and delinquency. In addition, the moderated effect of ethnicity/race on the association between early externalizing behaviors and later delinquency has not been fully investigated, which is explored in this study. Moreover, the association between SES and delinquency, in addition to the effect of SES being a moderator, is investigated. Family structure was also investigated as a main effect and a moderator for delinquency. Lastly, the study contributes to the current literature on parenting practices by investigating the moderated effect of harsh parenting practices on the association between early externalizing behaviors and later delinquency. The study adds to the current literature on delinquency precursors and contributes to literature on moderated effects of delinquency. The results from this study may enable clinicians to develop more effective prevention efforts for delinquency with a focus on specific factors that may

provided stability in problem behaviors.

Chapter 4

Method

Participants and Procedures

The data for the current study were drawn from two waves of the Children of the National Longitudinal Survey of Youth-1979 dataset (CNLSY-79; Zagorsky & White, 1999). This dataset was initially used as a nationally representative longitudinal study to follow the experiences of men and women in the work force by means of interviews. This national sample was identified by Raffaelli and Crockett (2003), and consists of 855 children, 52.4% of which were male. This sample is ethnically diverse, and consist of 24.1% Hispanic, 36.6% Black, and 39.1% European American participants. The women in this study were interviewed on an annual basis since 1979, when the mothers were between the ages of 14-21 years old. In 1986 the mothers were between the ages of 21-28 years old; this data point was used for the first wave for this study, in which the children were in early childhood the early childhood (i.e., when children were ages four to five years old). The predictor variables, child sex, child ethnicity/race, SES, family structure, parenting practices, and externalizing behaviors were assessed when children were ages four to five years old (T1; 1986 survey wave; $M = 58.74$ months, $SD = 7.12$, range = 46 - 102 months). The second wave, the adolescent data, was collected in 1998 (i.e., when the children were ages 16-17 years old).

The National Longitudinal Study of Youth-79 (NLSY-79; Zagorsky & White, 1999) began in 1979 and mothers participated annually through 1994, in which the survey began being conducted every other year. The data for this study was drawn from the 1986 wave in which mothers participated and reported on the child. The data collected on the children include questionnaires and standardized developmental assessments.

Measures

All variables descriptive results (i.e., children's sex, children's ethnicity/race, SES, family structure, and harsh parenting practices) are presented in Table 1.

Children's sex. The mother reported the sex of the child in 1986. The resulting variable used in analyses was binary (0 = *female*, 1 = *male*).

Children's ethnicity/race. The ethnicity of the children were reported by their mothers in the 1986 wave when children were four to five years old. The sample consisted of three categories for ethnicity, which included, Hispanic, Black, and European American ethnicities. Two dummy variables were used in analyses, representing Hispanic (0 = *non-Hispanic*, 1 = *Hispanic*) and black ancestry (0 = *non-black*, 1 = *black*).

SES. The mother reported SES in 1986, which was indicated by the total amount of family income for the prior year. Poverty was specified by meeting the federal criteria for living in poverty in the year prior to the 1986 survey based on family income while controlling for family size. This ratio was calculated by dividing gross household income for the prior year by the poverty level put forth by the federal government, which takes into consideration the household size in the prior year. For example the federal poverty threshold for 1985 for a single person was \$5,360 and \$1,800 for each additional person (United States Department of Health and Human Services, 2010). The resulting variable used in analyses was binary (0 = *not in poverty*, 1 = *in poverty*).

Family structure. Family structure or the household composition was assessed in 1986 by interviews with the mothers when the children were ages four to five years old. The categories created for family structure were based on several mother reported items about who lived in the house and their marital history. Family structure was divided into seven categories,

including, both parents in home, mom only household, mom and spouse, mom and partner, dad household, other living situation, part-time with mom/part-time with dad or part-time with mom/part-time with other. For the purpose of this study the family structure variable was divided into three main categories. Two dummy variables were used in analyses, representing two parent households (0 = *non two parent households*, 1 = *two parent household*) and single mother household (0 = *non single mothers*, 1 = *single mothers*).

Harsh parenting practices. This study was particularly focused on harsh parenting practices. The harsh parenting practices measure was based on one question from the Home Observation Measurement of the Environment-Short Form (HOME-SF; Caldwell & Bradley, 1978). The HOME-SF survey consisted of basic questions probing at the child's environment with their mother and their emotional support. The question used to determine if harsh parenting practices was "About how many times, if any, have you had to spank child in the past week?." The response category for this question was open ended and recoded to a seven-point scale, which consisted of 0 (*none*) to 7 (*seven or more*).

Externalizing behaviors. The externalizing behaviors measure was adapted from the Behavior Problems Index (BPI: Zill, 1990), which originally consisted of 32 questions. The data from the BPI was collected in 1986 from the mothers' reports on their children's behavior. The official version of the BPI subscale for externalizing behaviors consisted of 18 questions. However, one question on the externalizing subscale tapped internalizing behaviors (i.e., "has sudden changes in mood or feeling") instead of externalizing behaviors so it was dropped for the purpose of this study. Thus the early childhood externalizing behavior scale used for this study consisted of 17 questions, which were geared to target behaviors that were disruptive to others around the child, for example, "child cheats or lies" and "child is disobedient at home". The

response scale for the BPI consisted of 1 (*Often true*) to 3 (*Not true*) and these responses were reverse coded so that low scores corresponded to low levels of the behaviors. A factor analysis of these 17 items divided these behaviors into four dimensions (see Table 2 for the full questions, factor loadings, and Cronbach's α 's). The full scale was kept for the purpose of this study to target all externalizing behaviors rather than subcategories (e.g., antisocial and hyperactive). The full externalizing behavior scale had a Cronbach's α of 0.83, which indicates high internal consistency. The scales were all significantly correlated at the $p < .01$ level (see Table 3 for the full correlation matrix). The scale score was computed by averaging for all kids who had answers for at least 75% of the items.

Delinquency. The adolescents' self-reported delinquency measures were drawn from the CNLSY-79 young adult self-report questionnaire in 1998 (Zagorsky & White, 1999). The outcome measures for this study were based on questions adapted from separate sections of the larger young adult self-report questionnaire. First, questions within the self-report questionnaire that were considered to target delinquent behaviors were identified. Then the questions were conceptually broken down into five categories that reflect the current categories used by the United States Department of Justice (i.e., violent offenses, property offenses, illicit drug use, licit drug use, and minor offenses) to form five distinct delinquency measures, in addition to an overall delinquency measure. These separate delinquency measures were loosely based on the four dichotomous outcome variables, (i.e., violent offenses, property offenses, drug offenses, and minor offenses) in Kierkus and Hewitt (2009), however the measure for this differed by adding a differentiation between illicit drug (i.e. illegal drug) and licit drug (i.e. legal drug) offenses. The descriptive statistics for each type of delinquency measure can be found in Table 2. In addition, an overall delinquency measure was used that contained 24 questions (i.e., all questions in the

Appendix), from the young adult self-report questionnaire.

Violent offenses. Five questions from the general delinquency questionnaire were combined for the violent offense scale (See Appendix for the full list of questions). These questions were used together to assess the adolescent's involvement in violent crime and consisted of behaviors that would be considered harmful to themselves or others. The five items consisted of their involvement in a specific violent behavior in the past year, for example, "In the last year (last 12 months), have you ever gotten into a fight at school or work?" and "In the last year (last 12 months), have you ever hit or seriously threatened to hit someone?" For each item, participants reported their involvement in violent offenses as either 0 (*no*) or 1 (*yes*). A reliability analysis was conducted and the violent offense scale had a Cronbach's α of 0.68, which indicates adequate internal consistency.

Property offenses. The property offense had seven questions from the young adult questionnaire that measure the respondent's involvement in property offenses (See Appendix to view a full list of questions). The questions used for this measure consisted of behaviors that are crimes against property. The questions used for this particular measure consisted of the individual's involvement in property crimes over the past year, for example, "In the past year have you ever taken a vehicle without the owner's permission?" and "In the past year have you ever broken into a building or vehicle to steal something or just to look around?". Each item in this measure, participants reported their involvement in property offenses as either 0 (*no*) or 1 (*yes*). A reliability analysis was conducted and the property offense scale had a Cronbach's α of 0.76, which reveals adequate internal consistency.

Illicit drug use. The illicit drug scale measured the respondent's use of illegal drugs, specifically, marijuana, inhalants, cocaine, crack, hallucinogens, and downers (See Appendix to

view a full list of questions). This scale consisted of six questions that evaluated the respondent's use of any of the aforementioned illicit drugs, for example, "Have you ever used marijuana?" and "Have you ever used hallucinogens?". Each item in this measure, participants reported their involvement in illicit drug use as either 0 (*no*) or 1 (*yes*). The reliability analysis was conducted and the illicit drug use measure had a Cronbach's α of 0.55, which indicates near adequate internal consistency.

Licit drug use. The licit drug scale measured the respondent's use of legal drugs, including alcohol and cigarettes (See Appendix to view a full list of questions). First, the alcohol measure had to be recoded so that responses were, 0 (*respondent had not drank alcohol*) or 1 (*respondent had drank alcohol*). This recoding was needed because there was no question in the 1998 CNLSY-79 that asked specifically "Have you ever drank alcohol" in 1998. Instead the question was "About how old were you the first time you had a glass of beer or wine or a drink of liquor, such as whiskey, gin, scotch, etc.? Do not include childhood sips that you might have had from an older person's drink." The licit drug scale consisted of two questions (i.e., the recoded alcohol question and "Have your ever used cigarettes?"). The response scale for the licit drug use scale provided for respondents was 0 (*no*) and 1 (*yes*). A reliability analysis was conducted and the licit drug use measure had a Cronbach's α of 0.65, which indicates adequate internal consistency.

Minor offenses. The scale for minor offenses was created using four questions from the self-report questionnaire (See Appendix to view a full list of questions). Sample questions for the minor offenses scale were, "In the last year have you lied to your parents about something important?" and "In the past year have you skipped a day of school?." The response scale for these questions consisted of 0 (*no*) or 1 (*yes*). There was a question regarding the adolescent's

frequency of running away from home. The running away from home measure had to be recoded because the original question was “How many times, if ever, have you run away from home?”. This measure was recoded, such that the responses were either, 0 (*respondent had never run away from home*) or 1 (*respondent had run away from home*). A reliability analysis was conducted and the minor offense scale had a Cronbach’s α of 0.47, which could be due to the low number of questions.

Overall delinquency. The measure for the overall delinquency was created by combining the questions for all types of delinquency discussed above, as illustrated in the Appendix. The overall delinquency measure consisted of 24 questions. The overall delinquency measure had a Cronbach’s α of 0.83.

Analysis Plan

First, preliminary analyses were completed using independent t-tests, ANOVAs and correlations, using the Statistical Package for Social Sciences (SPSS). For the ANOVAs, when significant group differences were revealed, Tukey’s HSD post hoc tests were conducted to explore the pairwise differences. Next, regressions were completed to test study hypotheses. Six regression models were run to test each individual measure of delinquency (i.e., violent offenses, property offenses, illicit drug use, licit drug use, minor crime, and overall delinquency). In all regression models, the first step had the full set of predictor variables (i.e., male sex, children’s ethnicity black, children’s ethnicity Hispanic, SES, two parent household, single mother household, harsh parenting practices, and prior externalizing behaviors). In the second step of each regression model, eight two-way interactions were added, which were early externalizing behaviors by each predictor variable (i.e., male sex, children’s ethnicity black, child ethnicity Hispanic, SES, two parent household, single mother household, and harsh parenting practices).

Interaction terms in the second step of the hierarchical regression were created by first mean centering the harsh parenting practices variable and early externalizing variable. Then the mean centered early externalizing variable was multiplied by each predictor variable (i.e. children's sex, children's ethnicity/race, SES, family structure, and the mean centered harsh parenting practices). When there were significant interactions, simple slope tests and interaction plots were created using Interaction! (Soper, 2006-2013).

Chapter 5

Results

Preliminary Analyses

Preliminary analyses were conducted for the six delinquency outcomes, the predictor variables were, children's sex, children's ethnicity/race, SES, family structure, harsh parenting practices, and early externalizing behaviors. Correlations were conducted for all predictor variables (see Table 5 for a full depiction of these results). Independent t-tests were conducted for children's sex and SES. Furthermore, ANOVAs were conducted for children's ethnicity/race and family structure.

Children's sex. Independent samples t-tests were conducted with children's sex and the delinquency measures (see Table 6 for a detailed description of means, standard deviations, and p-values).). There was a significant difference in the violent offense scores for males and females; $t(635) = 3.80, p < 0.001$. Similarly, there was a significant difference in the property offense scores for boys and girls; $t(635) = 6.134, p < 0.001$. Specifically, these results indicate that boys are engaged in higher levels of property offenses than girls. Furthermore, there was a significant difference in the overall delinquency scores for males and females; $t(612) = 2.959, p = 0.003$, such that males had higher levels of overall delinquency compared to females. There were no significant findings for illicit drug use, licit drug use, or minor offenses.

Children's ethnicity/race. ANOVAs were conducted for children's ethnicity/race (see Table 7 for a detailed descriptions of the means, standard deviations, post hoc, and p-values). First, the one-way ANOVA for illicit drug use showed that there was a significant effect of children's ethnicity/race on illicit drug use at the $p < .05$ level for the three groups, $F(2, 598) = 11.67, p < 0.001$. The first post hoc comparisons, which were conducted using a Tukeys HSD

test indicated that the mean score for black children ($M = 0.06$, $SD = 0.09$), was significantly lower than the Hispanic children ($M = 0.12$, $SD = 0.017$), and European American children ($M = 0.11$, $SD = 0.16$). However, Hispanic children did not significantly differ from the European American children. The one-way ANOVA results also showed that there was a significant effect of children's ethnicity/race for licit drug use at the $p < .05$ level for the three groups, $F(2, 583) = .31$, $p < .001$. The post hoc comparison indicated that the mean score for black children ($M = 0.42$, $SD = 0.42$) was significantly lower than the Hispanic children ($M = 0.61$, $SD = 0.41$) and European American children ($M = 0.71$, $SD = 0.38$). The ANOVA results showed that there was a significant effect of children's ethnicity/race on the overall delinquency scale at the $p < .05$ level for the three groups, $F(2, 611) 4.54$, $p = 0.01$. The post hoc comparison indicated that the mean score for black children ($M = 0.16$, $SD = 0.14$) was significant lower than Hispanic children ($M = 0.20$, $SD = 0.18$), and European American children ($M = 0.19$, $SD = 0.15$). However, there was no statistically significant difference on between Hispanic children and European American children for overall delinquency. There were no significant results for violent offenses and property offenses.

Socioeconomic status. Independent samples t-tests were conducted and there were no statistically significant results for SES and any of the six delinquency measures (see Table 8 for a full description of means, standard deviations, and p-values).

Family structure. Next, ANOVAs were conducted to examine group differences in delinquency types by family structures (see Table 9 for a full description of means, standard deviations, post hoc, and p-values). First, the one-way ANOVA results showed that there was a significant effect of family structure on violent offenses at the $p < .05$ level for the three groups, $F(2, 633) = 4.16$, $p = 0.02$. The first post hoc comparisons indicated that the mean score for two-

parent households ($M = 0.13$, $SD = 0.21$) was significantly lower than single mother households ($M = 0.17$, $SD = 0.24$). However, there were no differences between the other household structures ($M = 0.19$, $SD = 0.28$) and two-parent households or single mother households. The one-way ANOVA results also indicated that there was a significant effect of family structure on property offenses at the $p < .05$ level for the three groups, $F(2, 633) = 3.79$, $p = 0.02$. The post hoc comparisons indicated that the mean score for the other household type ($M = 0.16$, $SD = 0.03$) was significantly higher than two parent households ($M = 0.10$, $SD = 0.17$) and single mother households ($M = 0.10$, $SD = 0.19$). However, there were no significant differences between two parent households and single mother households. Statistically significant associations between family structure and illicit drug use, licit drug use, minor offenses and overall delinquency were not revealed.

Harsh parenting practices. The fifth preliminary analysis investigated harsh parenting practices, bivariate correlations were conducted to assess the association between harsh parenting practices and externalizing behaviors and each delinquency type. There was a statistically significant positive association between high levels of harsh parenting practices and high levels of early childhood externalizing behaviors (See Table 5 for the full correlation matrix). Harsh parenting practices were not correlated with any of the types of delinquency.

Early externalizing behaviors. Lastly, the preliminary analysis for externalizing behaviors consisted of conducting bivariate correlations with the dimensions of delinquency (see Table 5 for the full correlation matrix). There was a significant positive correlation between high levels of early externalizing behaviors and high levels of property offenses. Moreover, there was a significant positive correlation between high levels of early externalizing behaviors and high levels of overall delinquency.

Hypotheses Testing

Regression analyses were conducted for the six dimensions of delinquency (i.e., violent offense, property offense, illicit drug crime, licit drug crime, minor drug crime, and overall delinquency) to examine the main effect of each of the risk factors (i.e., child sex, ethnicity, SES, family structure, and parenting practices), and whether these moderated the association between early childhood externalizing behaviors and delinquency in adolescence. Six two-step hierarchical regressions were conducted. The first step of each regression model included the predictor variables. The second step of each model included the predictor variables' interactions with early externalizing behaviors.

Violent offenses. In the first step of the violent offense regression, there was a significant change in variance, $F(8, 573) = 2.85, p < 0.01, R^2 = 0.04$, which accounted for 2.5% of the variance (see Table 10 for *US B*, *SE*, and β). In the regression model, the level of violent offenses was predicted by child sex, such that males reported higher levels of violent offense than females. Conversely, child ethnicity, SES, household structure, parenting practices, and prior externalizing behaviors were not predictive of violent offenses. The second step of the model was not statistically significant, $F(15, 566) = 1.67, p = 0.05, R^2 = 0.04$. In the second step of the regression model, once again the level of violent offenses was predicted by child sex. The interactions for the second step of the regression models did not explain any additional variance in violent offenses.

Property offenses. The first step of the property offense model was statistically significant, $F(8, 573) = 5.61, p < 0.001, R^2 = 0.07$, which accounted for 6% of the variance (see Table 11 for *US B*, *SE*, and β). In the first step of the property offenses regression model, child sex was significant, such that males reported higher levels of property offenses compared to

females. In addition, children from two-parent household had lower levels of property offenses, and children who lived in single-parent households had lower levels of property offenses. The second step of the property offense model was statistically significant, $F(15, 566) = 3.68, p < 0.001, R^2 = 0.09$. In the second step of the model, the same main effects remained and did not account for any additional variance. Moreover, black children with high levels of externalizing behaviors were involved in lower levels of property offenses (see Figure 1); the simple slope test revealed that the association between property offenses and prior externalizing behaviors was stronger for non-black children ($b = .10, SE_b = .03, p = .001$) than for African American children ($b = -.03, SE_b = .04, p = .25$).

Illicit drug use. The first step of the illicit drug use model was statistically significant, $F(8, 541) = 3.28, p = 0.001, R^2 = 0.05$, which accounted for 3.2% of the variance (see Table 12 for $US B, SE$, and β). The first step of the illicit drug use regression model, black children were engaged in lower levels of illicit drug use. The second step of the illicit drug use model was $F(15, 534) = 2.26, p = 0.004, R^2 = 0.06$. The second step of the model, did not account for any additional variance, once again black children had lower levels of illicit drug use. Moreover, on the second step of the model, children with high levels of externalizing behaviors that did not receive harsh parenting practices were involved in higher rates of illicit drug use. For harsh parenting practices, a simple slope test revealed that the association between illicit drug use and prior externalizing behaviors were stronger for children that were exposed to low levels of harsh parenting practices ($b = .067, SE_b = .03, p = .01$) than for children who were exposed to high levels of harsh parenting practices ($b = .007, SE_b = .028, p = .40$) (see Figure 2).

Licit drug use. The first step of the licit drug use regression model was statistically significant (see Table 13 for $US B, SE$, and β), $F(8, 528) = 7.98, p < 0.001, R^2 = 0.11$, which

accounted for 9.4% of the variance. Hispanic children engaged in lower levels of licit drug use. In addition, black children were engaged in lower levels of licit drug use. The second step of the licit drug use model was statistically significant, $F(8, 521) = 4.62, p < 0.001, R^2 = 0.12$ but did not account for any additional variance. In the second step of the model, Hispanic children had lower levels of licit drug use compared to European Americans. Moreover, black children had lower levels of licit drug use than European Americans. There were no interactions for licit drug use.

Minor offenses. The first step of the minor offense model was not statistically significant, $F(8, 572) = 1.17, p = 0.32, R^2 = 0.02$. Furthermore, the second step of the minor offense scale was statistically significant either, $F(15, 565) = 1.08, p = 0.37, R^2 = 0.03$ (see Table 14 for *US B*, *SE*, and β).

Overall Delinquency. The first step of the overall delinquency model was statistically significant (see Table 15 for *US B*, *SE*, and β), $F(8, 553) = 2.91, p = 0.003, R^2 = 0.04$, which accounted for 2.7% of the variance. In the first step, boys engaged in higher levels of overall delinquency. In addition, black children have lower levels of delinquency. The second step of the overall delinquency model was statistically significant, $F(15, 546) = 2.04, p = 0.01, R^2 = 0.05$. There was no additional variance explained in the second step of the model and there were no interactions.

Chapter 6

Discussion

Overview

The purpose of this study was to explore the associations between early childhood externalizing behaviors and delinquency in adolescence. Research to date has indicated that children who display high levels of early childhood externalizing behaviors tend to have unfavorable outcomes later in life, such as inability regulating emotions, physical fights, difficulty playing with others, and delinquency (Thompson et al., 2011). This study sought to not only investigate main effects, but also potential moderators of the associations between early externalizing behaviors and delinquency in middle adolescence. Furthermore, this study was innovative in that adolescent delinquency is typically studied in terms of one unified behavior (Miller et al., 2010); this study went a step further by investigating five subtypes of delinquency (i.e., violent offenses, property offenses, illicit drug use, licit drug use, and minor offenses), in addition to overall delinquency. This study revealed that, contrary to previous research, high levels of early childhood externalizing behaviors were not predictive of delinquency in adolescence (Reef et al., 2009; Thompson et al., 2011). Moreover, analyses indicated that there was no single risk factor that was universally significant across subtypes of delinquency. In the preceding paragraphs, association between early externalizing behaviors and future delinquency will be addressed, followed by main effects, and moderated effects. Each of hypotheses is described and findings are interpreted below (see Table 16 for a full list of hypotheses and results).

Main Effects Association with Later Delinquency

The first aim of this study was to investigate the association between early childhood

externalizing behaviors and later delinquency. This study investigated five separate types of delinquency (i.e., violent offenses, property offenses, illicit drug use, licit drug use, and minor offenses), in addition overall delinquency. The second aim of the study was to investigate the association between known risk factors (i.e., children's sex, children's ethnicity/race, SES, family structure, and harsh parenting practices) and five dimensions of delinquency, in addition to a combined measure of delinquency.

Association between early childhood externalizing behaviors and delinquency. The primary hypothesis was that children who displayed early externalizing behaviors would likely display high levels of delinquency in adolescence (Reef et al., 2010). This hypothesis was not supported by the results. The hierarchical regressions revealed no associations between early childhood externalizing problems and any of the six delinquency measures in adolescence. Furthermore, the bivariate correlations indicated that early externalizing behaviors were not associated with the violent offenses, illicit drug use, licit drug use, or minor delinquency. However, bivariate correlations did show an association between early childhood externalizing behaviors and property offenses. Moreover, early childhood externalizing behaviors were positively associated with overall delinquency. These results suggest that although the previous literature has indicated that children who display high levels of early childhood externalizing behaviors later go on to have problems, such as delinquency, early externalizing behaviors are only predictive of certain types of delinquency (Reef et al., 2010; Thompson et al., 2010; Timmermans et al., 2009). The differences in the pathway of early externalizing behaviors to later delinquency could possibly just be a difference in sampling types. A large part of the externalizing behaviors studies have been focused on at-risk boys, and this study had a nationally representative sample of both males and females. Studies that target at-risk populations are more

likely to have outcomes that are more undesirable, whereas a representative sample provides a more accurate depiction of the behavior. Moreover, some research has indicated that early externalizing behaviors decrease with age, which perhaps this sample's population falls into the category of desisting with age (Hill et al., 2006). It is suggested that for the majority of the population, externalizing behaviors are found to decrease with age rather than remain problematic.

Association between children's sex and delinquency. The second hypothesis was based on previous research, such that, males would be more likely to engage in delinquency than females (Miller et al., 2010; Whitney et al., 2010; Wong et al., 2012). This hypothesis was partially supported by the results. Independent samples t-tests indicated that males engaged in higher levels of violent offenses, property offenses, and overall delinquency. Similarly, hierarchical regression models indicated that males engaged in higher levels of violent and property offenses and overall levels of delinquency in adolescence. However, children's sex was not predictive of illicit drug use, licit drug use, or minor crimes. These results suggest that males were engaged in higher levels of two subtypes of delinquency, and overall delinquency. Perhaps the socialization of children, specifically gender socialization, may further influence the higher rate of involvement for males, such that, males are socialized to be more aggressive from an early age (Irwin & Millstein, 1986; Moffitt, 2006). Moreover, the results could be an outcome of the studies measures, such that the study was focused on general participation (i.e., they had participated in the offense in the last year), not rate (e.g., high level versus low levels of delinquency) of participation. This could suggest that although females and males both have participated in these behaviors, it is not indicative of specific level of engagement. Research has suggested that males are involved more in delinquency and if the actual rate was considered the

differences may have been more evident (Steketee et al., 2013).

Association between children's ethnicity/race and delinquency. The third hypothesis that was investigated indicated black children and Hispanic children would have higher levels of violent offenses, property offenses, and minor offenses compared to European American children (Harden et al., 2009). Moreover, it was further hypothesized that Hispanics would have higher rates of both illicit and licit drug use in comparison to blacks (Wu et al., 2000). ANOVA result indicated that black children had lower levels of illicit drug use, licit drug use, and overall delinquency in comparison to Hispanic children and European American children, which is consistent with results from Wu and colleagues (2000). However, there were no main effects of ethnicity/race for violent offenses, property offenses, or minor offenses. The hierarchical regression results indicated that children's ethnicity/race was not predictive of violent offenses or property offenses. However, black children engaged in lower levels of illicit drug use. Furthermore, when it came to licit drug use, both black children and Hispanic children were engaged in lower levels of licit drug use. Children's ethnicity/race was not predictive of minor offenses. Lastly, contrary to the hypothesis black children and Hispanic children were engaged in lower levels of overall delinquency in comparison to European American children.

These results are novel, in that the majority of research shows that ethnic minorities are typically involved in higher rates of delinquency but for this study the reverse is true. Previous research has indicated that spirituality plays an important role in the lives of African American children, which can deter them from engaging in delinquency (Belgrave et al., 1997). Their spirituality beliefs could account for their lower levels of illicit drug use, licit drug use, and overall delinquency. These results are supported by the fourth bond of social control theory, belief, the more emphasis that are place on beliefs and values, the less likely an individual is to

engage in criminal behaviors (Hirschi, 1969). Moreover, the biopsychosocial model can be incorporated into the justification of lower rates of delinquency for African Americans, such that social influences (e.g., cultural traditions, familism, and spirituality) and psychological influences (e.g., beliefs and attitudes) are promotive of lower engagement in delinquent behaviors in comparison to children of other ethnicities/races who do not have the same backgrounds (Irwin & Millstein, 1986). Spirituality and familism has been found to be important protective factors for African American youth and the addition of other protective factors that the biopsychosocial model incorporates only strengthens the likelihood that these individuals are less likely to become delinquent compared to other youth from different backgrounds (Book & Pahl, 2005; Belgrave et al., 1997).

Association between SES and delinquency. The fourth hypothesis indicated that children from lower SES households would have higher levels of all delinquency types in adolescence. This hypothesis was not supported. The bivariate correlations, independent t-tests, and regressions indicated that SES was not associated with engagement in violent offenses, property offenses, illicit drug use, licit drug use, minor offenses, or overall delinquency. These results contradict previous studies that have suggested that children from lower SES households are at increased risk for more adverse outcomes later in life (e.g., Heck & Walsh, 2000). This could be due to this study only investigating if families are or are not in poverty rather than difference social classes. Regardless, these results are encouraging because it suggest that being disadvantaged in terms of financial means does not set a child up for adverse outcomes at least up until middle adolescence.

Association between family structure and delinquency. The fifth hypothesis was that children from two parent households would have lower levels of all types of delinquency in

comparison to children from single parent households or other family structures. Moreover, it was further hypothesized that children from other family structures would have higher levels of all delinquency types in comparison to children from single mother households. The ANOVAs suggested that there were group differences for both violent offenses and property offenses. However, there were not group differences for illicit drug use, licit drug use, minor offenses, or overall delinquency. Family structure was not predictive of violent offenses in the regression model. However, as hypothesized, the regression model indicated that children from two parent households and single mother households engage less in property offenses in comparison to children from other household types. These results suggest that children from other types of family structures engage in higher levels of property crime. Family structure was not predictive of illicit drug use, licit drug use, minor offenses, or overall delinquency during adolescence. This suggests that children from other types of family structures are at increased risk for engaging in property offenses as an adolescent (Kierkus & Hewitt, 2009).

Perhaps children from untraditional households experience fewer bonds to their society and therefore they have less deterrence from crime, which is consistent with social control theory (Hirschi, 1969). Specifically, children from untraditional households may be less likely to have a strong attachment to their family, the first bond of social control, which reduces their deterrence from delinquency (Hirschi, 1969). Similarly, these results could be reflective of general strain theory, since these children have an untraditional family structure, which could cause multiple types of strain (e.g., broken families and unfavorable relations with parents) on them, and in turn lead to negatives emotions and ultimately delinquent behaviors (Agnew, 1992). In addition, the biopsychosocial model could come into play, such that children from untraditional families face more risk factors, biological (e.g., genetic predisposition and antisocial parents), psychological

(e.g., poor stress management) and social (e.g., lack of family support) for delinquent behaviors rather than protective factors. It is important to note that for the majority of the delinquency types, family structure was not a risk factor for later delinquency (Kierkus & Hewitt, 2009).

Association between harsh parenting practices and delinquency. The sixth and final main effect that was studied was harsh parenting practices, specifically spanking. It was hypothesized that young children who received harsh parenting practices would have higher levels of all types of delinquency in adolescence. This hypothesis was not supported by the results. Bivariate correlations indicated that harsh parenting practices were not associated with any type of delinquency. Furthermore, there were no significant findings for the regression models regarding harsh parenting practices. This study is contradictory of previous literature that suggests that harsh parenting practices are associated with poor outcomes such as delinquency in adolescence (Simons et al., 2000). Moreover, this study suggests that children who are not spanked during early childhood were just as likely to engage in delinquency during adolescence as children that are spanked. These results could be reflective of the measure that was used to gauge harsh parenting practices, that was based on one question. Further exploration of this finding is needed.

Summary of main effects. The main effects from this study did not completely support previous literatures' positive association between risk factors and delinquency (Miller et al., 2010; Thompson et al., 2010). These opposing results could potentially be caused because delinquency was investigated as dimensions instead of as a single construct. First, early childhood externalizing behaviors were not associated with any of the delinquency types. Next, males were engaged in higher levels of violent offenses, property offenses, and overall delinquency, in comparison to females (Miller et al., 2010). Children's sex was a significant risk

factor for some of the delinquency types but not all of them. Moreover, although children's ethnicity was significant for three delinquency types (i.e., illicit drug use, licit drug use, and minor drug use), it was not significant across all types (Wu et al., 2000). In contrast, SES was not statistically significant for any of the delinquency types. Family structure was significant for violent offenses and property offenses but was not significant for illicit drug use, licit drug use, minor offenses or overall delinquency (Kierkus & Hewitt, 2009). Contrary to previous literature, harsh parenting practices was not significant statistically significant for any delinquency types (Simons et al., 2000). Based on these results, there is evidence for studying risk factors for dimensions of delinquency rather than a single construct. These results further suggest that there is not one single risk factor that is a strong predictor across all six types of delinquency. Moreover, this study provides evidence that early childhood externalizing behaviors are not associated with delinquency in adolescence but instead may desist with age (Moffitt, 2006).

Moderated Effects on Early Externalizing Behaviors and Later Delinquency

The third aim of this study was to investigate whether risk factors (i.e., children's sex, children's ethnicity/race, SES, family structure, and harsh parenting practices) moderated the associations between early childhood externalizing behaviors and delinquency (i.e., violent offenses, property offenses, illicit drug use, licit drug use, minor drug use, and overall delinquency) in adolescence. This section of the study adds significantly to the current literature because of the investigation of moderation of the association between early childhood externalizing behaviors and delinquency in adolescence, whereas the majority of literature focused on this area investigates main effects (Reef et al., 2009; Thompson et al., 2010; Timmermans et al., 2009).

Moderated effects of children sex on the association between early child externalizing behaviors and delinquency. The first moderator examined was the children's sex. The hypothesis for children's sex was that the association between early childhood externalizing behaviors and later delinquency would be stronger for boys than for girls. This hypothesis was not supported by the results, in that males with prior externalizing behaviors were not more likely to engage in later delinquency. These results contradict previous studies that indicate boys who have early externalizing behaviors engage in higher levels of delinquency as adolescents (Miller et al., 2010). Children's sex did not moderate the association between early childhood externalizing behaviors and violent offenses, property offenses, illicit drug use, licit drug use, minor offenses, or overall delinquency. There were no interactions between children's sex and the association between early childhood externalizing behaviors and later delinquency. This lack of a moderated effect of children's sex suggests that both males and females are at equal risk for evolving from early childhood externalizing behaviors to delinquency in adolescence, contrary to what research indicated about main effects (Wong et al., 2012).

Moderation of children's ethnicity/race on the association between early child externalizing behaviors and delinquency. The second moderator that was investigated was children's ethnicity/race. The hypothesis was that the association between previous early externalizing behaviors and later delinquency would be stronger for black and Hispanics children for all areas of delinquency except illicit drug use and licit drug use. It was further hypothesized that Hispanics would show a stronger association between early externalizing behaviors and drug offenses in adolescence in comparison to black children. Children's ethnicity/race did not moderate the association between early childhood externalizing behaviors and violent offenses,

illicit drug use, licit drug use, minor offenses, or overall delinquency. However, there were statistically significant results, such that European American children who displayed higher levels of externalizing behaviors in early childhood engaged in higher levels of property offenses in adolescence in comparison to black children. Children's ethnicity helped explain and significantly impacted the association between early childhood externalizing behaviors and property offenses. These results suggested that property crimes remain relatively stable for black children, regardless of involvement in early externalizing behaviors. However, when the association was investigated for European American children, this pathway was positive, such that the increase in externalizing behaviors also increased engagement level in property offenses.

This research is novel because the moderated effect of ethnicity/race for the association between early externalizing behaviors and delinquency has not been immensely studied. Moreover, the results are consistent with social control theory, which suggest that an individual's bond to society deters them from criminal activity and African Americans have stronger bonds to their spirituality (Book & Pahl, 2005; Belgrave et al., 1997).

The results of this study indicated that European American children who have high rates of behavior problems during childhood are engaged in higher rates of property crimes during adolescence, which is consistent with Moffitt's (1993) life-course persistent trajectory. These findings bring rise to the question of the generalizability of Moffitt's (1993) theory. The majority of Moffitt's (1993) research was conducted on white children, and in terms of this study, Moffitt's (1993) theory was only applicable to the European American individuals and not the African American children. The moderated effect for this study suggests that Moffitt's (1993) theory may not be generalizable to all ethnicities/races, rather just white children. More research on this moderated effect is needed to fully understand the association. Moreover, this should be

further investigated in relation to the generalizability of Moffitt's (1993) theory as well.

Moderated effects of SES on the association between early child externalizing behaviors and delinquency. The third moderator investigated was SES. It was hypothesized that children from lower SES households who displayed prior externalizing behaviors would have a stronger association with higher levels of all types of delinquency in comparison to high SES. In contrast, it was further hypothesized that children from higher SES households with no prior displays of externalizing behaviors would show lower levels of delinquency. There were no significant findings for this moderation. SES did not moderate the association between early childhood externalizing behaviors and any type of delinquency in adolescence.

Moderated effects of family structure on the association between early child externalizing behaviors and delinquency. The fourth moderator investigated was family structure. It was hypothesized that there would be stronger associations between early childhood externalizing behaviors and later delinquency in single mother households and other household structures compared to two parent households. This hypothesis was not supported by results. Family structure was not a moderated effect on the association between early childhood externalizing behaviors and delinquency in adolescents. This study was the first study to the moderation of family structure on early childhood externalizing behaviors and delinquency. However, research had investigated the interaction of family structure and child sex on delinquency outcomes, or family structure and SES on delinquency outcomes, which has been significant (Griffin, Botvin, Scheier, Diaz, & Miller, 2000; Kierkus & Baer, 2003).

Moderated effects of harsh parenting practices on the association between early child externalizing behaviors and delinquency. The fifth and final moderator investigated was harsh parenting practices. It was hypothesized that the association between early childhood

externalizing behaviors and delinquency during adolescence would be stronger for children who received harsh parenting (i.e., for those children who were frequently spanked during early childhood). Harsh parenting practices did not moderate the associations between early externalizing behaviors and violent offenses, property offenses, licit drug use, minor offenses, or overall delinquency. However, harsh parenting practices did help explain and significantly impacted the association between early childhood externalizing behaviors and illicit drug use in adolescence. These results suggest that when harsh parenting practices were investigated, they did play a significant role in predicting the association between early childhood externalizing behaviors and illicit drug use in adolescence. Children who did not receive harsh parenting practices and displayed high levels of externalizing behaviors in early childhood were engaging in higher levels of illicit drug use compared to children who did receive harsh parenting practices. Children that did receive harsh parenting practices had a relatively stable association between early externalizing behaviors and illicit drug use.

These results could indicate that these children who display early childhood externalizing behaviors have a child effect and the parents engage in more permissive types of parenting practices (Scaramella & Leve, 2004). Perhaps, a cyclical pattern can be assumed for harsh parenting practices. Scaramella and Leve (2004) indicated that inappropriate behavior regulation could result in parental unresponsive behavior over time and increase the child's negative emotions, which would account for the increase in illicit drug use seen in the results. The biopsychosocial model also helps explain these results, such that biological influences (e.g., genetic predisposition), psychological influences (e.g., emotion regulation), and social (e.g., parenting practices) combine to put children at an increased risk for later delinquency (Irwin & Millstein, 1986). According to Moffitt (1993) children can have a genetic predisposition for a

difficult temperament, if these children do not receive adequate attention from their parent, it can have adverse outcomes during early childhood such as the inability to regulate their emotions, which leads to temper tantrums and the cyclical pattern continues to cause adverse outcomes such as delinquency, specifically illicit drug use in adolescence (Hill et al., 2006).

However, further research is needed to fully understand how this moderation operates. These results contribute to current literature, which indicated that child effects could be seen on parenting practices (Scaramella & Leve, 2004). More specifically, children with behaviors problems in early childhood could ultimately modify the type of parenting practices they receive.

Contributions, Limitations and Future Directions

The current study has several strengths and provides numerous contributions to literature. First, results contradicted previous literature that has suggested a pathway from early externalizing behaviors to delinquency, which contributes to the current literature (Webster-Stratton, 1996). Secondly, main effects for delinquency was not universally significant when delinquency was investigated as types rather than a single concept. Thirdly, was innovated, such that there was an investigation of moderation for the association between early childhood externalizing behaviors and future delinquency. Furthermore, delinquency for this study was conceptualized as dimensions for a better understanding of these associations rather than a single concept.

First, this study established that the pathway from early childhood externalizing behaviors to delinquency is not a clear cut as prior literature suggested. This research contradicted previous research that has indicated that high levels of early childhood externalizing behaviors are predictive of later problems, such as adolescent delinquency (Ruchkin et al., 2003; Webster-Stratton, 1996). However, these results indicated that the absence of problematic

behaviors in children does not preclude them from engaging in delinquency in adolescence, as they are just as likely to participate in delinquent acts later on. The lack of results for the association between early childhood externalizing behaviors and later delinquency could be a result of the BPI (Zill, 1990) covering a range of externalizing behaviors (e.g., headstrong and hyperactive behaviors), rather than focusing on externalizing behaviors that would directly line up with later delinquency (e.g., antisocial behaviors). More research is needed to effectively create prevention and intervention programs for delinquency.

In addition, this study highlighted main effects associated with the delinquency subtypes, which is the first study known to investigate these five dimensions of delinquency, in addition to the overall delinquency. The results suggested significant risk factors varied depending upon delinquency type, which is a contribution to current literature. It is critical when creating prevention and intervention programs to target appropriate risk factors to ensure program effectiveness. These results illuminate specific risk factors, such that for violent offenses, males are at higher risk than females, suggesting that interventions designed for violent offenses may need to target participants based on their specific demographic characteristics, such as children's sex. The foundation for creating prevention and intervention programs is an understanding of what risk factors are associated with the targeted behavior. There must be a strong understanding of risk factors to be proactive when trying to reduce problematic behaviors. Although main effects are vital for understanding delinquency, moderated effects shine light on important interactions that contribute to delinquency rates.

The investigation of moderated effects for the association between early childhood externalizing behaviors and delinquency in adolescence is of utmost importance to fully grasp the concept of delinquency. This study had two significant interactions between early childhood

externalizing behaviors and types of delinquency. Children's ethnicity/race moderated the association between and property offenses. Additionally, harsh parenting practices moderated the association between early childhood externalizing behaviors and illicit drug use. These results are novel and contribute greatly to the literature and illustrate the importance of further investigations of moderations.

Furthermore, this study was innovative, such that, the delinquency measure was investigated in terms of dimensions rather than a single category. The majority of research on delinquency up until this point has investigated delinquency as a single construct, or has dimensions that are not reflective of the classifications set forth by the United States Department of Justice (Reef et al., 2011; Timmermans et al., 2009). However, this study was the first known to investigated dimensions of delinquency that are reflective of the those used by the United States Department of Justice, and divided delinquency into five categories (i.e., violent offenses, property offenses, illicit drug use, licit drug use, and minor offenses), as well as a category for the overall delinquency rate. The results from this study indicated that delinquency should be investigated in terms of these dimensions or categories because the delinquency measures each had significant results for different risk factors. Furthermore, this means that current prevention and intervention programs that are a one size fits all and are gauged to target overall delinquency may not be sufficient enough because it may not be targeting the proper risk factors for each individual type of delinquency. Based on the results of the main and moderated effects, delinquency should be investigated in terms of its distinct dimensions for a comprehensive model of delinquency.

The current study had several innovative contributions to the literature. However, there are some limitations of this study that could be addressed in future research. The first limitation

of the study was the measure for harsh parenting practices. The measure used for this was drawn from the HOME-SF (Caldwell & Bradley, 1978) and only consisted of one question, which asked the mothers how many times in the past week they had spanked their child. This measure would provide a better picture of the impact that harsh parenting practices or lack of, can have on children if it probed more parenting practices that were associated with harsh parenting practices. The Conflict Tactics Scale: Parent-Child (Straus, 2007) would be a beneficial measure for future researching to probe a variety of harsh parenting practices. The CTSPC, measures physical assault, psychological aggression, and non-violent discipline techniques. Sample items in the CTSPC include questions such as, “When you had a problem with ___ in the past year, how many times did you discuss an issue calmly with ___?”, “How many times did you threaten to hit or throw something at ___?”, and “How many times did you push, grab or shove ___?” and the scale anchors for these questions were 0 (*never*) to 6 (*more than 20 times*). This measure allows for a more diverse range of harsh parenting practices rather than the one specific questioned used in this study (Waller et al., 2012).

The second limitation of this study would be the age of the dataset at the first wave 1986 and second wave in 1998 and the impact it has on the illicit drug use measure. The item inclusion list for the illicit drug scale would need adjustments for future research. In terms of illicit drug use, new illegal drugs are constantly being developed and used during adolescence, and the drugs that were popular in 1998 may not longer be popular for adolescents in 2014. Although the NLSY-79 (Zagorsky & White, 1999) targets a diverse range of illicit drugs (e.g., cocaine and marijuana), there are some illicit drugs that are more prevalent in society today. The NLSY-79 (Zagorsky & White, 1999) measure was adjusted in 1992 to include prescription and non-prescription drug use. However, there are other areas of illicit drug use that the NLSY-79

(Zagorsky & White, 1999) data set does not yet touch on (e.g., “bath salts”). Further, new prescription drugs, such as, OxyCotin, Vicodin, Ritalin, and Adderall, have all been added to the Monitoring the Future Survey (MTFS) since 1998 (Johnston et al., 2012). Although the NLSY-79 (Zagorsky & White, 1999) did not fall directly in line with the adjusted illicit drug use items that were used by the MTFS (Johnston et al., 2012) there are other aspects of the NLSY-79 (Zagorsky & White, 1999) that are more beneficial, such as the mother report of early childhood externalizing behaviors. Moreover, although the types of illicit drugs adolescents may be using has changed in recent years, the generalizability of these results are not impacted and the findings are still applicable. However, adding the new drugs to a measure would simply help it to remain relevant to adolescents today and perhaps even illicit drug use could be broken down into fine-grained categories for further exploration.

The third limitation of the study was the children’s ethnicity/race measure. The measure used for this study provided respondents with three categories to select from in terms of ethnicity/race (i.e., black, Hispanic, and European American). However, this study did not allow for the variety of ethnicities that are currently represents the United States population. Furthermore, compared to when the NLSY-79 (Zagorsky & White, 1999) was conducted in 1986, the Census Bureau provided individuals with the opportunity to identifying with more than one race in 2000. The NLYS data does not have an option for individuals to identify as bi-racial or multiracial, respondents indicate the ethnicity/race they most identify with. Moreover, the identification of other ethnicity/races would be beneficial. For instance, research has indicated that Native Americans have higher rates of substance use in comparison to other groups, which would be interesting to see how they compare to the current dominant ethnicities/races found in the NLSY-79 (Zagorsky & White, 1999; Wu et al., 2011). The ethnicity/race measure does not

reflect the identification set forth by the U.S. Census Bureau for identification of more than one race or expand upon other ethnicity/races, however, the results are still generalizable in their current form. Other considerations should add in other potential independent variables.

Future research should investigate other types of risk factors such as parental control, parental personality, child temperament, and peer influences (i.e., prosocial and antisocial peers). The results of this study suggest that parent practices could be reflective of parental control or lack of, which is consistent with current research (Scaramella & Leve, 2004). Other potential independent variables for instance include, peers, which are influential during adolescence and could influence an individual's involvement in delinquency or deter them from engaging in delinquency (Hirschi, 1969). Heimer (1996) indicated that females who believe their peers would not approve of them engaging in delinquency would refrain from engagement, which suggests that peers do play an influential part in this process. The identification of early risk factors for delinquency can aid in the development of prevention and intervention programs. Moreover, future research should investigate predictors of specific delinquency types. Research to date has suggested that variables such as, children's sex, children's ethnicity, SES, family structure, and parenting practices are risk factors for adolescent delinquency (Bradford et al., 2003; Low et al., 2012; Schroeder et al., 2010; Steketee et al., 2013; Whitney et al., 2010). However, this study illuminated the fact that there was not one specific risk factor that was associated with every type of delinquency. The results provide strong evidence that future research on delinquency should continue to investigate delinquency by type rather than by overall delinquency.

Theoretical Implications

The foundation for the study was based on Moffitt's (1993) life-course-persistent theory, which suggested that children engaged in high levels of behaviors problems continue to engage

in these behaviors over their lifetime. This study did support this pathway but support was only found as a moderated effect of children's ethnicity/race on the association between early childhood externalizing behaviors and illicit drug use. Moffitt's theory did not hold true for African American or Hispanic children. The lack of support for the theory with these two ethnicities questions the generalizability of Moffitt's (1993) theory to other ethnicities/race since his studies were primarily based on white children. This study suggests that although the theory holds true for white children it may not explain the behaviors of children from other ethnicities. Further research is needed to investigate the generalizability of Moffitt's (1993) theory to other ethnicities. Although Moffitt's theory only held true for one ethnicity, other theories used for this study did contribute to explaining the results.

Social control theory, specifically the bond of attachment, was instrumental in interpreting results for this study (Hirschi, 1969). Children who had stronger attachment bonds were less likely to engage in delinquent behaviors compared to children who may have weaker bonds. In addition, general strain theory supported results, suggesting that children who experience more strain in their life were more likely to become delinquent (e.g., children from untraditional family structures) (Agnew, 1992). The use of the biopsychosocial model was also beneficial for this study because it helped explain findings that may have had multiple influences, for example, children who did not receive harsh parenting practices as a child and had high levels of externalizing behaviors were more likely to engage in illicit drug use. The biopsychosocial model was useful in incorporating biological, psychological, and social risk factors to ultimately contribute to delinquency (Irwin & Millstein, 1986).

This study was complex and consisted of an eclectic group of theories to support the study, however, each of these theories contributed to the understanding of how or why

problematic behaviors persist or cease over time. Understanding behavior problems in children is difficult when looking through only one perspective because typically there are a variety of factors that contribute to these problems and the incorporation of multiple theories allowed for a comprehensive perspective that was needed. The continued use of multiple theories to study delinquency would be beneficial for truly understanding the multiple aspects that contribute to these behaviors.

Clinical Implications

Although there were no risk factors universal across delinquency types, it does not indicate that all prevention and intervention efforts should cease. Instead, it is plausible to suggest that it is a combination of risk factors, rather than one specific factor, that lead to later delinquency, such that the more risk factors an individual is exposed to the more likely they are to go on to later delinquency. The magnitude of risk factors that an individual is exposed to leads to more stress in an individual's life, which is associated with undesirable outcomes (Agnew, 1992). This rationalization is consistent with general strain theory, which explains that stress in an individual's life leads to an undesirable emotion state, and ultimately delinquency (Agnew, 1992). Therefore, based on the results from this study, it is suggested that prevention and intervention efforts still occur early in life but target a wide range of risk factors rather than specific aspects to be more effective.

Conclusions

Although some research has indicated that early childhood externalizing behaviors lead to later adverse outcomes such as delinquency in adolescence, this study did not support those assertions (Campbell, 1995). These results suggest that children's early behaviors should not be gauged to predict their behaviors later on in life. This study suggests that other childhood factors,

such as parental control and peer influence, should be further investigated as risk factors for delinquency in adolescence. Moreover, this study is essential for future research and the investigation of adolescent delinquency because it has not only indicated that early externalizing behaviors are not associated with delinquency but has indicated that there is a need for investigation of delinquency types. A broad categorization of adolescent delinquency does not allow for the full picture. Delinquency would be better understood if it was broken down into types because there are specific risk factors associated with each type and not one risk factor was universally significant (Demuth & Brown, 2004). Although delinquency is generally thought of in terms of one class of behaviors, there are significant differences in types of delinquency. This study has only begun to paint the picture of adolescent delinquency and further research is needed to truly understand each individual type of delinquency and the type of people that are more likely to engage in each type. Future research in these fields should continue to explore delinquency in terms of dimensions to fully grasp the concept.

References

- Agnew, R. (1992). Foundation for a general strain theory of crime and delinquency. *Criminology*, 30, 47-87.
- Agnew, R., Matthews, S., Bucher, J., Welcher, A., & Keyes, C. (2008). Socioeconomic status, economic problems, and delinquency. *Youth and Society*, 40, 159-181.
- Agnew, R., & Peterson, D. (1989). Leisure and delinquency. *Social Problems*, 36, 332-350.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.).
- Barber, B. K., & Harmon, E. L. (2002). Violating the self: Parental psychological control of children and adolescents. In B. K. Barber (Ed.), *Intrusive parenting: How psychological control affects children and adolescence* (pp. 15-52). Washington, DC: American Psychological Association.
- Barnes, J. C., & Beaver, K. M. (2010). An empirical examination of adolescence-limited offending: A direct test of Moffitt's maturity gap thesis. *Journal of Criminal Justice*, 38, 1176-1185.
- Belgrave, F. Z., Townsend, T. G., Cherry, V. R., & Cunningham, D. M. (1997). The influence of an Africentric worldview and demographic variables on drug knowledge, attitudes, and use among African American youth. *Journal of Community Psychology*, 25, 421-433.
- Benoit-Bryan, J. (2011). The runaway youth longitudinal study: A study spanning 15 years which examines the characteristics of kids who run away from home and the long term impacts of run away behavior on key outcomes in adulthood. (NCFY Publication No. 2-44). Retrieved from http://www.1800runaway.org/assets/1/7/nrs_longitudinal_study_report-_final.pdf.

- Bogart, L., Elliot, M., Kanouse, D., Kleinm D., Davies, S., Cuccaro, P., ... Schuster, M. (2013). Associations between perceived discrimination and racial/ethnic racial disparities in problem behaviors among preadolescent youths. *American Journal of Public Health, 6*, 1074-1081.
- Bongers, I. L., Koot, H. M., van der Ende, J., & Verhulst, F. C. (2004). Developmental trajectories of externalizing behaviors in childhood and adolescence. *Child Development, 75*, 1523-1537.
- Bornstein, M. H., & Sawyer, J. (2008). Family systems. In K. McCartney & D. Phillips (Eds.), *Blackwell Handbook on Early Childhood Development* (pp. 381-398). Malden, MA: Blackwell.
- Bradford, K., Barber, B. K., Olsen, J. A., Maughan, S. L., Erickson, L. D., Ward, D., & Stolz, H. E. (2003). A multi-national study of interparental conflict, parenting, and adolescent functioning: South Africa, Bangladesh, China, India, Bosnia, Germany, Palestine, Colombia, and the United States. *Marriage and Family Review, 35*, 107-137.
- Brook, J. S., & Pahl, K. (2005). The protective role of ethnic and racial identity and aspects of an Africentric orientation against drug use among African American young adults. *The Journal of Genetic Psychology, 166*, 329-345.
- Butts, J. A., & Mears, D. P. (2001). Reviving juvenile justice in a get-tough era. *Youth and Society, 33*, 169-198.
- Caldwell, B. M., & Bradley, R. H. (1979). *Home Observation for Measurement of the Environment*. Little Rock, AR: Center for Child Development and Education, University of Arkansas.
- Campbell, S. B. (1995). Behavior problems in preschool children: A review of recent research.

- Journal of Child Psychology and Allied Disciplines*, 36, 113-149.
- Carlo, G., Raffaelli, M., Laible, D. J., Meyer, K. A. (1999). Why are girls less physically aggressive than boys? Personality and parenting mediators of physical aggression. *Sex Roles*, 40, 711-729.
- Caspi, A. Moffitt, T., Silva, P., Stouthamer-Loeber, M., Krueger, R., & Schmutte, P. (1994). Are some people crime-prone? Replications of the personality-crime relationship across countries, genders, races, and methods. *Criminology*, 32, 163-195.
- Cicchetti, D., & Cohen, D. J. (2006). *Developmental psychology: Theory and method*. Hoboken, NJ: John Wiley & Sons.
- Centers for Disease Control and Prevention (CDC). (2011). Youth risk behavior surveillance- United States 2011. *Morbidity and Mortality Weekly Reports*, 61, No. SS04 (1-162).
- Cohen, M. A. (1998). The monetary value of saving a high risk youth. *Journal of Quantitative Criminology*, 14, 5-33.
- Cohen, M., & Piquero, A. R. (2009). New evidence on the monetary value of saving high-risk youth. *Journal of Quantitative Criminology*, 25, 25-49.
- Cohen, M. A., Piquero, A. R., & Jennings, W. G. (2010). Estimating the cost of bad outcomes for at-risk youth and the benefits of early childhood interventions to reduce them. *Criminal Justice Policy Review*, 21, 391-434.
- Compas, B. E., Hinden, B. R., & Gerhardt, C. A. (1995). Adolescent development: Pathways and processes of risk and resilience. *Annual Review of Psychology*, 46, 265-293.
- Demuth, S., & Brown, S. L. (2004). Family structure, family processes, and adolescent delinquency: The significance of parental absence versus parental gender. *Journal of Research in Crime and Delinquency*, 41, 58-81.

- Dodge, K. A., & Pettit, G. S. (2003). A biopsychosocial model of the development of chronic conduct problems in adolescence. *Developmental Psychology*, 39, 349-371.
- Fanti, K. A., & Henrich, C. C. (2010). Trajectories of pure and co-occurring internalizing and externalizing problems from age 2 to age 12: Findings from the National Institute of Child Health and Human Development Study of Early Child Care. *Developmental Psychology*, 46, 1159-1175.
- Frick, P. J., & Kimonis, E. R. (2008). Externalizing disorders of childhood. In J. Maddux & B. Winstead (Eds.), *Psychopathology: Foundations for a contemporary understanding* (pp. 349-374). New York, NY: Routledge.
- Freudenberg, N. (2009). Incarcerated and delinquent youth. In DiClemente, R., Santelli, J., & Crosby, R. (Eds.), *Adolescent health: Understanding and preventing risk behaviors* (pp. 339-358). San Francisco, CA: Jossey-Bass.
- Gardiner, H., & Kosmitzki, C. (2008). *Lives across cultures: Cross-cultural human development* (4th ed.). Boston, MA: Pearson.
- Griffin, K. G., Botvin, G. J., Scheier, L. M., Dias, T., & Miller, N. L. (2000). Parenting practices as predictors of substance use, delinquency, and aggression among urban minority youth: Moderating effects of family structure and gender. *Psychology of Addictive Behaviors*, 14, 174-184.
- Harden, K. P., D'Onofrio, B. M., Van Hulle, C., Turkheimer, E., Rodgers, J. L., Waldman, I. D., & Lahey, B. B. (2009). Population density and youth behavior. *The Journal of Child Psychology and Psychiatry*, 50, 999-1008.
- Hawkins, S. R., Graham, P. W., Williams, J., & Zahn, M. A. (2009). *Resilient girls - Factors that protect against delinquency (NCJ220124)*. Washington, DC: Office of Juvenile Justice

and Delinquency Prevention.

Heck, C., & Walsh, A. (2000). The effects of maltreatment and family structure on minor and serious delinquency. *International Journal of Offender Therapy and Comparative*

Criminology, 44, 178-193.

Heimer, K. (1996). Gender, interaction, and delinquency: Testing a theory of differential social control. *Social Psychology Quarterly*, 59, 39-61.

Hill, A. L., Degnan, K. A., Calkins, S. D., & Keane, S. P. (2006). Profiles of externalizing behavior problems for boys and girls across preschool: The roles of emotion regulation and inattention. *Developmental Psychology*, 42, 913-928.

Hinshaw, S. P. (1992). Externalizing behavior problems and academic underachievement in childhood and adolescence: Causal relationships underlying mechanisms. *Psychological Bulletin*, 111, 127-155.

Hirschi, T. (1969) *Causes of delinquency*. Berkeley, CA: University of California Press.

Hussey, D., Drinkard, A., Falletta, L., & Flannery, D. (2008). Understanding clinical complexity in delinquent youth: Comorbidities, service utilization, cost, and outcomes. *Journal of Psychoactive Drugs*, 40, 85-95.

Irwin, C. E., & Millstein, S. G. (1986). Biopsychosocial correlates of risk-taking behaviors during adolescence: Can the physician intervene? *Journal of Adolescent Health Care*, 7, 82-96.

Jeglum Bartusch, D. R., Lynam, D. R., Moffitt, T. E., & Silva, P. A. (1997) Is age important? Testing general versus a developmental theory of antisocial behavior. *Criminology*, 35, 13-48.

Jenson, W. R., Harward, S., & Bowen, J. (2011). Externalizing disorders in children and

- adolescents: Behavioral excess and behavioral deficits. In M. Bray & T. Kehle (Eds.), *The oxford handbook of school psychology* (pp. 230-256). New York, NY: Oxford University Press.
- Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2012). *Monitoring the Future national results on adolescent drug use: Overview of key findings, 2011*. Ann Arbor, MI: Institute for Social Research, The University of Michigan.
- Junger-Tas, J., Ribeaud, D., & Cruyff, M. J. L. F. (2004). Juvenile delinquency and gender. *European Journal of Criminology*, 1, 333-375.
- Kiff, C. J., Lengua, L. J., & Zalewski, M. (2011). Nature and nurturing: Parenting in the context of child temperament. *Clinical Child Family Psychology Review*, 14, 251-301.
- Kierkus, C. A., & Baer, D. (2003). Does the relationship between family structure and delinquency vary according to circumstances? An investigation of interaction effects. *Canadian Journal of Criminology and Criminal Justice*, 45, 405-430.
- Kierkus, C. A., & Hewitt, J. D. (2009). The contextual nature of family structure/delinquency relationship. *Journal of Criminal Justice*, 37, 123-132.
- Kulis, S. S., Marsiglia, F. F., Kopak, A. M., Olmsted, M. E., & Crossman, A. (2012). Ethnic identity and substance use among Mexican-Heritage preadolescents: Moderator effects of gender and time in the United States. *Journal of Early Adolescence*, 32, 165-199.
- Laird, R. D., Pettit, G. S., Dodge, K. A., & Bates, J. E. (2005). Peer relationship antecedents of delinquent behavior in late adolescence: Is there evidence of demographic group differences in developmental processes? *Development and Psychopathology*, 17, 127-144.
- Leaper, C., & Friedman, C. K. (2008). The socialization of gender. In J. E. Grusec & P. D.

- Hastings (Eds.), *Handbook of socialization theory and research* (pp. 561-587). New York, NY: Guilford Press.
- Leve, L. D., Kim, H. K., & Pears, K. C. (2005). Childhood temperament and family environment as predictors of internalizing and externalizing trajectories from ages 5 to 17. *Journal of Abnormal Child Psychology*, 33, 505-520.
- Lopez-Romero, L., Romero, E., & Luengo, M. A. (2012). Disentangling the role of psychopathic traits and externalizing behavior in predicting conduct problems from childhood. *Journal of Youth and Adolescence*, 41, 1397-1408.
- Low, S., Sinclair, R., & Shortt, J. W. (2012). The role of economic strain on adolescent delinquency: A microsocial process model. *Journal of Family Psychology*, 26, 576-584.
- Lui, J. (2004). Childhood externalizing behavior: Theory and implications. *Journal of Child and Adolescent Psychiatric Nursing*, 17, 93-103.
- McNulty, T. L. & Bellair, P. E. (2003). Explaining racial and ethnic differences in serious adolescent violent behavior. *Criminology*, 41, 709-748.
- Merton, R. K. (1983). Social structure and anomie. *American Sociological Review*, 3, 672-682.
- Miller, S., Malone, P., & Dodge, K. A. (2010). Developmental trajectories of boys' and girls' delinquency: Sex differences and links to later adolescent outcomes. *Journal of Abnormal Child Psychology*, 38, 1021-1032.
- Miner, J. L., & Clarke-Stewart, K. A. (2008). Trajectories of externalizing behaviors from age 2 to age 9: Relations with gender, temperament, ethnicity, parenting, and rater. *Developmental Psychology*, 44, 771-786.
- Moffitt, T. E. (1993). Adolescent-limited and life-course persistent anti-social behavior: A developmental taxonomy. *Psychological Review*, 100, 674-701.

- Moffitt, T. E. (2006). Life-course-persistent versus adolescent-limited antisocial behavior. In Cicchetti, D., and Cohen, D. (Eds.), *Development psychopathology* (pp. 570-598). New York, NY: John Wiley and Sons.
- Morris, A. S., Silk, J. S., Steinberg, L., Myers, S. S., & Robinson, L. R. (2007). The role of the family context in the development of emotion regulation. *Social Development, 16*, 361-388.
- Pagani, L. S., Tremblay, R. E., Nagin, D., Zoccolillo, M., Vitaro, F., & McDuff, P. (2004). Risk factor models for adolescent verbal and physical aggression towards mothers. *International Journal of Behavioral Development, 28*, 528-537.
- Patterson, G. R., DeBaryshe, B., & Ramsey, E. (1990). A developmental perspective on antisocial behavior. *American Psychologist, 44*, 329-335.
- Pitzer, M., Esser, G., Schmidt, M. H., & Laucht, M. (2009). Temperamental predictors of externalizing problems among boys and girls: A longitudinal study in a high-risk sample from ages 3 months to 15 years. *European Archives of Psychiatry and Clinical Neuroscience, 259*, 445-458.
- Raffaelli, M., & Crockett, L. J. (2003). Sexual risk taking in adolescence: The role of self-regulation and attraction to risk. *Developmental Psychology, 39*, 1036-1046.
- Reef, J., Diamantopoulou, S., van Meurs, I., Verhulst, F. C., & van der Ende, J. (2011). Developmental trajectories of child to adolescent externalizing behavior and adult DSM-IV disorder: Results of a 24-year longitudinal study. *Social Psychiatry Psychiatric Epidemiology, 46*, 1233-1241.
- Robins, L. N. (1978). Sturdy childhood predictors of adult antisocial behaviour: Replications from longitudinal studies. *Psychological Medicine, 8*, 611-622.

- Ruchkin, V., Koposov, R., Vermeiren, R., & Schwab-Stone, M. (2003). Psychopathology and age at onset of conduct problems in juvenile delinquents. *Journal of Clinical Psychiatry*, 64, 913- 920.
- Scaramella, L. V., & Leve, L. D. (2004). Clarifying parent-child reciprocities during early childhood: The early childhood coercion model. *Clinical Child and Family Psychology Review*, 7, 89-107.
- Schroeder, R. D., Osgood, A. K., & Oghia, M. J. (2010). Family transitions and juvenile delinquency. *Sociological Inquiry*, 80, 579-604.
- Shaw, D. S., Dishion, T. J., Supplee, L., Gardner, F., & Arnds, K. (2006). Random trial of a family-centered approach to the prevention of conduct problems: 2-year effects of the family check-up in early childhood. *Journal of Consulting and Psychology*, 74, 1-9.
- Simons, R. L., Wu, C., Lin, K., Gordon, L., & Conger, R. D. (2000). A cross-cultural examination of the link between corporal punishment and adolescent antisocial behavior. *Criminology*, 38, 47-79.
- Soper, D. S., (2006-2013). Interaction! (v.1.7.2211). [Software].
<http://www.danielsoper.com/Interaction/default.aspx>.
- Steketee, M., Junger, M., & Junger-Tas, J. (2013). Sex differences in the predictors of juvenile delinquency: Females are more susceptible to poor environments; Males are influenced more by low self-control. *Journal of Contemporary Criminal Justice*, 29, 88-105.
- Straus, M. A. (2007). Conflict tactic scales. In Jackson, N. A. (Ed.) *Encyclopedia of domestic violence* (p. 190). New York, NY: Routledge.
- Thompson, R., Tabone, J. K., Litrownik, A. J., Briggs, E. C., Hussey, J. M., English, D. J., & Dubowitz, H. (2010). Early adolescent risk behavior outcomes of childhood externalizing

- behavioral trajectories. *Journal of Early Adolescence*, 31, 234-257.
- Timmermans, M., van Lier, P. A. C., & Koot, H. M. (2009). Pathways of behavior problems from childhood to late adolescence leading to delinquency and academic underachievement. *Journal of Clinical Child & Adolescent Psychology*, 38, 630-638.
- U.S. Census Bureau. (2010). Overview of race and Hispanic origin 2010. Retrieved from <http://www.census.gov/prod/cen2010/briefs/c2010br-02.pdf>.
- United States Department of Health and Human Services. (2010). The 1997 HHS Guidelines. Retrieved from <http://aspe.hhs.gov/poverty/97poverty.htm>.
- United States Department of Justice, Federal Bureau of Investigation. (2012). *Crime in the United States, 2011*. Retrieved from <http://www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s/2011/crime-in-the-u.s.-2011/offenses-known-to-law-enforcement/offenses-known-to-law-enforcement>.
- United States Department of Justice, Office of Justice Programs, Office of Juvenile Justice and Delinquency Prevention. (1990-2010). *Statistics briefing book*. Retrieved from http://ojjdp.gov/ojstatbb/ezapop/asp/profile_section.asp.
- Volpe, R. J., & Chafouleas, S. M. (2011). Assessment of externalizing behavioral deficits. In M. Bray & T. Kehle (Eds.), *The oxford handbook of school psychology* (pp. 284-311). New York, NY: Oxford University Press.
- Waller, R., Gardner, F., Hyde, L. W., Shaw, D. S., Dishion, T. J., & Wilson, M. N. (2012). Do harsh and positive parenting predict parent reports of deceitful-callous behavior in early childhood? *Journal of Child Psychology and Psychiatry*, 53, 946-953.
- Webster-Stratton, C. (1996). Early-onset conduct problems: Does gender make a difference? *Journal of Consulting and Clinical Psychology*, 64, 540-551.

- Webster-Stratton, C., Reid, M. J., & Hammond, M. (2004). Treating children with early-onset conduct problems: Intervention outcomes for parent, child, and teacher training. *Journal of Clinical Child and Adolescent Psychology*, 33, 105-124.
- Wells, L. E., & Rankin, J. H. (1991). Families and delinquency: A meta-analysis of the impact of broken homes. *Social Problems*, 38, 71-93.
- White, J., Moffitt, T. E., Earls, F., Robins, L. N., & Silva, P. A. (1990). How early can we tell? Preschool predictors of boys' conduct disorder and delinquency. *Criminology*, 28, 507-533.
- Whitney, S. D., Renner, L. M., & Herrenkohl, T. I. (2010). Gender differences in risk and promotive classifications associated with adolescent delinquency. *The Journal of Genetic Psychology*, 171, 116-138.
- Wong, T. M. L., Loeber, R., Slotboom, A. M., Bijleveld, C. J. H., Hipwell, A. E., Stepp, S. D., & Hans, K. M. (2012). Sex differences in the risk threshold for delinquency. *Journal of Abnormal Child Psychology*, 41, 641-652.
- Wu, L., Woody, G. E., Yang, C., Pan, J., & Blazer, D. G. (2011). Racial/Ethnic variations in substance-related disorders among adolescents in the United States. *Archives of General Psychiatry*, 68, 1176-1185.
- Zagorsky, J. L., & White, L. (1999). *NLSY79 user's guide: A guide to the 1979–1998 National Longitudinal Survey of Youth data*. Washington, DC: U.S. Department of Labor.
- Zill, N. (1990). Behavior problem index based on parent report. In *National Health Interview Survey Child Health Supplement*. Washington, DC: National Center for Health Statistics.

Appendix

Delinquency Measures

Items, response categories and coding adapted from NLS 18 Young Adult Self Report Booklet.

Violent Offenses

Items

In the last year (last 12 months), have you ever:	Yes	No
a. Gotten into an argument or fight?	1	0
b. Used force to get money or things from someone else?	1	0
c. Hit or seriously threatened to hit someone?	1	0
d. Hurt someone badly enough to need bandages or a doctor?	1	0
e. Attached someone with the idea of seriously hurting or killing them?	1	0

Property Offenses

Items

In the last year (last 12 months), have you ever:	Yes	No
a. Intentionally damaged or destroyed property that did not belong to you?	1	0
b. Taken something from a store without paying for it?	1	0
c. Other than from a store, taken something not belonging to you that was worth less than \$50?	1	0
d. Other than a store, taken something not belonging to you that was worth more than \$50?	1	0
e. Taken a vehicle without the owner's permission?	1	0
f. Broken into a building or vehicle to steal something or just to look around?	1	0
g. Knowingly sold or held stolen goods?	1	0

Illicit Drug Use

Items

	Yes	No
a. Have you ever used marijuana?	1	0
b. Have you ever "sniffed" or "huffed" substance like glue, gas, sprays, fluids, or anything like that for kicks or to get high?	1	0
c. Have you ever used cocaine (other than "crack")?	1	0
d. Have you ever used "crack" ("rock") cocaine?	1	0
e. Have you ever used hallucinogens, such as LSD, PCP, peyote, or mescaline?	1	0

- f. Have you ever used sedatives or “downers,” such as barbiturates, sleeping pills or Seconal?
1	0

Licit Drug Use

Items

- a. About how old were you when you first time you had a glass of beer or wine or a drink of liquor, such as, whiskey, gin, scotch, etc? Do no include childhood sips that you might have had from an older person’s drink.

[] yrs.

Never had a drink of beer, wine, or liquor in your life [95]

- b. Have you ever smoked a cigarette?

Yes 1

No 0

Minor Delinquency

Item

In the last year (12 months), have you ever:

	Yes	No
a. Skipped a full day of school without a real excuse?	1	0
b. Lied to your parent(s) about something important?	1	0
c. Had to bring your parents to school because of something you did wrong?	1	0
d. Have you ever run away from home?	1	0

Table 1

Predictor Variables and Descriptive Statistics

Variables	<i>n</i>	%	<i>M</i>	<i>SD</i>	Range	Skewness	Kurtosis
Children's Sex	855						
Male	448	52.4					
Female	407	47.6					
Children's Ethnicity/Race	855						
Black	313	36.6					
Hispanic	206	24.1					
European American	336	39.1					
SES	800						
In Poverty	301	37.8					
Not in Poverty	498	62.3					
Family Structure	854						
Two Parent	434	50.8					
Single Mother	316	37.0					
Other Family Structure	104	12.4					
Harsh Parenting Practices	823		1.57	1.74	0 - 7	1.37	1.68
Early Externalizing	846		1.46	.30	0 – 2.67	.08	.15

EXTERNALIZING BEHAVIORS TO DELINQUENCY

Table 2

Results of Externalizing Behavior Scale Factor Analysis

Item	BPI Official Scale	1	2	3	4
Child cheats or tells lies	Antisocial	.46			
Child breaks things on purpose	Antisocial			.45	
Child is disobedient at school	Antisocial			.66	
Trouble getting along with teachers	Antisocial			.78	
Child bullies/is cruel to others	Antisocial	.60			
Child is not sorry after misbehaving	Antisocial				.55
Child argues too much	Headstrong	.68			
Child is disobedient at home	Headstrong	.70			
Child is stubborn, sullen, irritable	Headstrong	.65			
Child has a very strong temper	Headstrong	.65			
Child has difficulty concentrating	Hyperactive		.71		
Child is easily confused/in fog	Hyperactive		.70		
Difficulty getting mind off thoughts	Hyperactive		.51		
Impulsive, acts without thinking	Hyperactive		.55		
Child is restless or over active	Hyperactive		.56		
Trouble getting along with other children	Peer Problems			.55	
Child is not liked by other children	Peer Problems				.76
Cronbach's α		.77	.68	.61	.27

Note. Only factors loading at .40 or above were listed above. The highest loading was provided for items loading on multiple factors.

EXTERNALIZING BEHAVIORS TO DELINQUENCY

Table 3

Correlations Among the BPI Scales

Variable	Mean (SD)	<i>n</i>	1	2	3	4
1 BPI Headstrong	1.56 (.40)	846				
2 BPI Attention	1.55 (.39)	846	.53**			
3 BPI Social	1.16 (.27)	557	.48**	.43**		
4 BPI Other	1.35 (.44)	852	.31**	.30**	.35**	
5 BPI Full Scale	1.46 (.30)	846	.88**	.81**	.69**	.52**

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

Table 4

Descriptive Statistics for Delinquency Measures

Type of Delinquency	<i>n</i>	<i>Mean</i>	<i>SD</i>	Range	Skewness	Kurtosis
Violent Offenses	637	.15	.23	0 – 1	.63	1.88
Property Offenses	637	.11	.19	0 - 1	2.30	5.67
Illicit Drug Use	601	.09	.15	0 – .83	2.31	7.12
Licit Drug Use	586	.58	.42	0 – 1	-.30	-1.53
Minor Offenses	636	.30	.28	0 – 1	.63	-.47
Overall Delinquency	614	.18	.16	0 – 1	1.19	1.50

EXTERNALIZING BEHAVIORS TO DELINQUENCY

Table 5

Bivariate Correlations (N = 855)

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1 Male Sex													
2 Hispanic	.04												
3 Black	.00	-.43**											
4 SES	-.01	.01	.32**										
5 Two Parent	-.02	.10**	-.33**	-.41**									
6 Single Mother	.02	-.05	.34**	.42**	-.78**								
7 Harsh Parenting	.04	-.07	.05	.09*	.01	.03							
8 Early Externalizing	.08*	.02	-.02	.13**	-.08*	.05	.31**						
9 Violent Offenses	.15**	-.02	.05	.07	-.11**	.07	.04	.06					
10 Property Offenses	.24**	.02	-.02	.06	-.05	-.02	.03	.08*	.47**				
11 Illicit Drug Use	-.05	.12**	-.19**	-.05	-.01	-.02	-.04	.06	.24**	.34**			
12 Licit Drug Use	-0.03	.04	-.29**	-.06	.03	-.03	.01	.05	.21**	.25**	.49**		
13 Minor Offenses	.02	.07	-.07	-.04	-.06	.06	-.02	.02	.44**	.50**	.33**	.33**	
14 Overall Delinquency	.12**	.08	-.12**	.01	-.07	.02	.01	.09*	.70**	.78**	.63**	.60**	.77**

Note. * $p < .05$, ** $p < .01$ (all tests two-tailed).

EXTERNALIZING BEHAVIORS TO DELINQUENCY

Table 6

Results of Independent Samples T-Tests and Descriptive Statistics for Children's Sex

	Children's Sex						<i>t</i>	<i>df</i>
	Males			Females				
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>		
Violent Offenses	.18	.20	326	.12	.20	311	3.80**	635
Property Offenses	.15	.22	326	.06	.13	311	6.13**	635
Illicit Drug Use	.08	.14	312	.10	.15	289	-1.30	599
Licit Drug Use	.56	.42	296	.59	.42	290	-.83	584
Minor Offenses	.31	.28	325	.30	.27	311	.54	634
Overall Delinquency	.20	.17	317	.16	.13	317	2.96**	612

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

Table 7

Results of One Way ANOVAs for Children's Ethnicity/Race

	Children's Ethnicity/Race						<i>F</i>	η^2
	Black		Hispanic		European American			
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Violent Offenses	.16	.24	.14	.22	.14	.23	.68	.00
Property Offenses	.10	.16	.12	.22	.11	.19	.24	.00
Illicit Drug Use	.06 ^A	.09	.12 ^B	.17	.11 ^B	.16	11.67	.04**
Licit Drug Use	.42 ^A	.42	.61 ^B	.41	.71 ^C	.38	30.31	.09**
Minor Offenses	.30	.28	.34	.29	.28	.26	1.83	.01
Overall Delinquency	.16 ^A	.14	.20 ^B	.18	.19 ^B	.15	4.53	.01**

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. The superscripts indicate that the means in the columns differ at the $p < .05$ level.

Table 8

Results of Independent Samples T-Tests and Descriptive Statistics for Poverty Status

	Poverty Status						<i>t</i>	<i>df</i>
	Not in Poverty			In Poverty				
	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>		
Violent Offenses	.14	.23	380	.17	.23	224	-1.80	602
Property Offenses	.10	.18	380	.12	.21	224	-1.46	602
Illicit Drug Use	.10	.15	367	.08	.12	203	1.23	568
Licit Drug Use	.60	.42	361	.54	.44	195	1.48	554
Minor Offenses	.31	.27	379	.29	.29	224	.85	601
Overall Delinquency	.18	.15	372	.18	.16	211	-.16	581

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

Table 9

Results of One Way ANOVAs for Family Structure

	Family Structure							
	Two Parent		Single Mother		Other Family		<i>F</i>	η^2
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Violent Offenses	.13 ^A	.21	.17 ^B	.24	.19 ^{AB}	.28	4.16	.01*
Property Offenses	.10 ^A	.17	.10 ^A	.19	.16 ^B	.25	3.79	.01*
Illicit Drug Use	.09	.15	.09	.13	.11	.17	.59	.00
Licit Drug Use	.59	.43	.56	.41	.59	.42	.31	.00
Minor Offenses	.29	.26	.33	.29	.30	.31	1.32	.00
Overall Delinquency	.17	.14	.19	.15	.21	.21	2.01	.00

Note. * $p < .05$, ** $p < .01$, *** $p < .001$. The superscripts indicate that the means in the columns differ at the $p < .05$ level.

EXTERNALIZING BEHAVIORS TO DELINQUENCY

Table 10

Two Step Hierarchical Regression Model for Violent Offenses

Predictor	Step 1			Step 2		
	<i>US B</i>	<i>SE</i>	β	<i>US B</i>	<i>SE</i>	β
Male Sex	.14	.03	.15***	.07	.02	.15***
Hispanic	-.02	.03	-.04	-.02	.03	-.03
Black	.01	.02	.01	.01	.02	.02
SES	.02	.02	.03	.02	.02	.04
Two Parent	-.05	.03	-.10	-.04	.03	-.09
Single Mom	-.01	.03	-.03	-.01	.03	-.02
Harsh Parenting	.00	.01	.02	.00	.01	.02
Early Externalizing	.02	.03	.03	.16	.12	.21
Ext x Sex				.00	.07	.00
Ext x Hispanic				-.03	.08	-.02
Ext x Black				-.06	.08	-.04
Ext x SES				-.04	.08	-.03
Ext x Two Parent				-.14	.11	-.12
Ext x Single Mom				-.07	.11	-.06
Ext x Harsh Parenting				-.01	.02	-.02
R^2	.038			.042		
ΔR^2	.038			.004		

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

Table 11

Two Step Hierarchical Regression Model for Property Offenses

Predictor	Step 1			Step 2		
	<i>US B</i>	<i>SE</i>	β	<i>US B</i>	<i>SE</i>	β
Male Sex	.09	.02	.24***	.09	.02	.23***
Hispanic	-.01	.02	-.01	-.01	.02	-.02
Black	-.01	.02	-.04	-.01	.02	-.03
SES	.02	.02	.05	.02	.02	.04
Two Parent	-.06	.03	-.16*	-.05	.03	-.14*
Single Mom	-.06	.03	-.15*	-.05	.03	-.13
Harsh Parenting	.00	.00	.00	.00	.01	.00
Early Externalizing	.02	.03	.04	.17	.09	.26
Ext x Sex				-.02	.05	-.02
Ext x Hispanic				-.02	.07	-.01
Ext x Black				-.17	.07	-.16*
Ext x SES				.07	.06	.07
Ext x Two Parent				-.14	.09	-.15
Ext x Single Mom				-.08	.09	-.08
Ext x Harsh Parenting				-.00	.01	-.01
R^2	.073			.089		
ΔR^2	.073			.016		

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

Table 12

Two Step Hierarchical Regression Model for Illicit Drug Offenses

Predictor	Step 1			Step 2		
	<i>US B</i>	<i>SE</i>	β	<i>US B</i>	<i>SE</i>	β
Male Sex	-.02	.01	-.07	-.02	.01	-.07
Hispanic	.01	.02	.04	.01	.02	.03
Black	-.05	.02	-.18***	-.06	.02	-.18***
SES	-.01	.02	-.02	-.01	.02	-.03
Two Parent	-.03	.02	-.09	-.03	.02	-.09
Single Mom	-.01	.02	-.02	.00	.02	-.00
Harsh Parenting	-.00	.00	-.04	-.00	.00	-.02
Early Externalizing	.03	.02	.05	.08	.08	.15
Ext x Sex				-.03	.04	-.04
Ext x Hispanic				.04	.05	.04
Ext x Black				-.05	.06	-.06
Ext x SES				.02	.05	.03
Ext x Two Parent				-.03	.07	-.04
Ext x Single Mom				-.03	.07	-.04
Ext x Harsh Parenting				-.02	.01	-.10*
R^2	.046			.060		
ΔR^2	.046			.014		

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

Table 13

Two Step Hierarchical Regression Model for Licit Drug Offenses

Predictor	Step 1			Step 2		
	<i>US B</i>	<i>SE</i>	β	<i>US B</i>	<i>SE</i>	β
Male Sex	-.03	.04	-.04	-.03	.04	-.03
Hispanic	-.12	.05	-.12**	-.13	.05	-.13**
Black	-.33	.04	-.37***	-.34	.04	-.38***
SES	.00	.04	.00	.00	.04	.00
Two Parent	-.02	.06	-.03	-.03	.06	-.03
Single Mom	.05	.06	.06	.06	.06	.07
Harsh Parenting	.00	.01	.00	.00	.01	.00
Early Externalizing	.02	.06	.02	.03	.22	.02
Ext x Sex				-.20	.12	-.11
Ext x Hispanic				.17	.15	.06
Ext x Black				.02	.16	.01
Ext x SES				.01	.15	.01
Ext x Two Parent				-.01	.21	-.01
Ext x Single Mom				.13	.21	.06
Ext x Harsh Parenting				-.01	.03	-.01
R^2	.108			.117		
ΔR^2	.108			.010		

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

Table 14

Two Step Hierarchical Regression Model for Minor Offenses

	Step 1			Step 2		
	<i>US B</i>	<i>SE</i>	β	<i>US B</i>	<i>SE</i>	β
Male Sex	.00	.02	.00	.00	.02	.00
Hispanic	.05	.03	.08	.04	.03	.07
Black	.02	.03	.03	.02	.03	.03
SES	-.05	.03	-.09	-.05	.03	-.08
Two Parent	-.02	.04	-.04	-.01	.04	-.02
Single Mom	.04	.04	.07	.05	.04	.09
Harsh Parenting	-.00	.00	-.02	-.00	.01	-.03
Early Externalizing	.04	.04	.04	.22	.14	.23
Ext x Sex				-.13	.08	-.10
Ext x Hispanic				.08	.10	.04
Ext x Black				-.06	.10	-.04
Ext x SES				-.02	.09	-.01
Ext x Two Parent				-.18	.14	-.13
Ext x Single Mom				-.05	.14	-.03
Ext x Harsh Parenting				.00	.02	.01
R^2	.016			.028		
ΔR^2	.016			.012		

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

Table 15

Two Step Hierarchical Regression Model for Overall Delinquency

Predictor	Step 1			Step 2		
	<i>US B</i>	<i>SE</i>	β	<i>US B</i>	<i>SE</i>	β
Male Sex	.04	.01	.12*	.04	.01	.12*
Hispanic	-.01	.02	-.02	-.01	.02	-.03
Black	-.04	.02	-.13**	-.04	.02	-.13**
SES	.01	.02	.02	.01	.02	.02
Two Parent	-.04	.02	-.13	-.03	.02	-.11
Single Mom	-.02	.02	-.05	-.01	.02	-.03
Harsh Parenting	.00	.00	-.00	.00	.00	-.00
Early Externalizing	.03	.02	.06	.14	.08	.27
Ext x Sex				-.04	.05	-.06
Ext x Hispanic				.03	.06	.03
Ext x Black				-.08	.06	-.09
Ext x SES				.01	.05	.01
Ext x Two Parent				-.11	.06	-.14
Ext x Single Mom				-.03	.08	-.04
Ext x Harsh Parenting				-.01	.01	-.02
R^2	.040			.053		
ΔR^2	.040			.013		

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

Table 16.

Study Hypotheses

Hypotheses	Description	Accepted/Rejected
Hypothesis 1	Children that display high levels of early externalizing behaviors would have higher levels of all types of delinquency in adolescence.	Rejected
Main Effect Hypotheses		
Hypothesis 2	Males would have higher levels of all types of delinquency in adolescence.	Partially accepted
Hypothesis 3A	Black children and Hispanic children would have higher levels of violent offenses, property offenses, and minor offenses compared to European American children.	Rejected
Hypothesis 3B	Black children would have lower levels of both illicit and licit drug use compared to Hispanics.	Accepted
Hypothesis 4	Children from lower SES households would have higher levels of all delinquency types in adolescence.	Rejected
Hypothesis 5A	Children from two parent households would have lower levels of all types of delinquency in comparison to children from single parent households or other family structures.	Partially accepted
Hypothesis 5B	Children from other family structures would have higher types of all delinquency measures in comparison to children from single mother households.	Partially accepted
Hypothesis 6	Children who received harsh parenting practices would have higher levels of all types of delinquency in adolescence.	Rejected
Hypothesis 7	The association between early childhood externalizing behaviors and delinquency would be stronger for boys.	Rejected

Hypotheses	Description	Accept/Rejected
Hypothesis 8A	Black children with early childhood externalizing behaviors would have higher levels of violent offenses, property offenses, minor offenses, and overall delinquency.	Rejected
Hypothesis 8B	Hispanics with early externalizing behaviors would have higher levels of illicit drug use and licit drug use in adolescence in comparison to black children.	Rejected
Hypothesis 9A	Children from lower SES households who displayed prior externalizing behaviors would have a stronger association with higher levels of all types of delinquency in comparison to high SES.	Rejected
Hypothesis 9B	Children from higher SES households with no prior displays of externalizing behaviors would show lower levels of delinquency	Rejected
Hypothesis 10	Children from single mother households and other household structures with early externalizing behaviors would have higher levels of all types of delinquency compared to two parent households.	Rejected
Hypothesis 11	Children who received harsh parenting practices and had early externalizing behaviors would have higher levels of all types of delinquency.	Rejected

Figure 1. Moderation of children's ethnicity/race on early externalizing behaviors association with property offenses.

Figure 2. Moderation of harsh parenting practices on early childhood externalizing behaviors and illicit drug use.