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Trauma and Aggression in Juvenile Offenders

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TRAUMA AND AGGRESSION IN JUVENILE OFFENDERS

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ABSTRACT

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Indirect aggression has been found to be more common among females than males and may be an unconsidered contribution to aggression shown in delinquent girls. Although there are no research studies to date that have investigated the link between relational aggression and law violations, there are some studies that have considered indirect and overt aggression in females; however, this research has been largely inconclusive. An additional obstacle for offenders is the presence of previous traumas, which has been closely linked to both overt and indirect aggression. Although both males and females in the juvenile justice system are likely to have experienced trauma, the traumas experienced by males and females as well as the symptoms related to trauma appear to be different. Additionally, trauma appears to be related to high-level forms of aggression and delinquency; however, it is unclear whether trauma is related to low level, indirect forms of aggression. Lastly, little research has been conducted in order to

determine whether the severity and type of trauma and trauma symptoms is related to the severity and type of aggression displayed among juvenile offenders. Results of the present study suggest a link between trauma history and overt aggression as well as between trauma symptom severity and overt aggression in a sample of juvenile offenders. No such relationships were found for indirect forms of aggression. Results indicated relatively few gender differences in aggression, trauma history, and trauma symptom severity. Practical implications and directions for future research are discussed.

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TABLE OF CONTENTS

Page

Abstract……..... iv

Acknowledgement…… vi

List of Tables…… xi

Chapter I: Introduction……. 1

Juvenile Delinquency……... 1

Indirect Aggression and Juvenile Delinquency…… 2

Trauma and Aggression…… 4

Gaps in the Literature……... 4

Problem Statement……... 5

Research Questions and Hypotheses…… 6

Chapter II: Review of the Literature……..…. 8

High Levels of Aggression…….…….…….…… 9

Delinquency and Aggression…… 9

Behavior Problems Associated with Juvenile Delinquency……. 10

Relevant Theory……... 12

Risk Factors for Delinquency…….…….. 14

Low Levels of Aggression……... 16

Bullying…… 16

Indirect Aggression…….…….…… 17

Relevant Theory…….…….…….…… 18

Risk Factors for Bullying……. 19

Link Between Delinquency and Bullying…… 21

Gender Differences in Delinquency and Bullying…….. 22

Gender Differences in Expression of Behavior…… 23

Gender Differences in Risk Factors……. 27

Trauma and Delinquency……. 29

Traumatic Events and Situations…….……..…… 29

Traumatic Stress…….……. 30

Types of Trauma…….……..…… 30

Complex Trauma…….…… 31

Effects of Trauma……. 32

Link Between Trauma and Aggression…… 32

Gender Differences in Trauma Among Juvenile Offenders……. 33

Relevant Theory ……..…… 35

Summary…….. 36

Purpose of the Current Study…….……..……..…… 37

Chapter III: Methods…….…… 39

Research Questions…….……. 39

Participants…….……..……..…… 40

Measures…….……..…… 41

Demographics…….……..…… 41

Trauma Symptom Checklist for Children…… 41

Childhood Trauma Questionnaire…… 43

Young Adult Social Behavior Scale……. 46

Reactive/ Proactive Aggression Questionnaire……..... 48

Research Design…….……. 49

Variables…….…… 49

Procedures…… 52

Data Collection……. 53

Scoring…….. 54

Potential Limitations…… 55

Internal Validity……..……. 55

External Validity…….…….…… 56

Sample…….…….…… 56

Self-Report Data…….…….…… 57

Data Analyses……..…… 57

Research Questions and Hypotheses…… 58

Chapter IV: Results…….…….. 63

Demographics…….. 63

Statistical Assumptions…… 64

Research Questions 1 and 2: Pearson's Correlation……. 64

Research Questions 3, 4, and 5: Independent Samples T-Tests…….……. 67

Research Questions 6, 7, and 8: ANOVAs…….…….…… 69

Summary…….……. 70

Chapter V: Discussion…….....…….. 72

Summary…….. 72

Conclusions…….……. 74

History of Trauma…… 74

Trauma Symptoms…… 75

Aggression…… 75

Aggression and Trauma…… 76

Limitations…… 77

Internal and External Validity…… 77

Self-Report Data…… 77

Trauma History and Trauma Symptom Measurement…… 77

Future Research…… 78

Implications…… 79

References…… 81

LIST OF TABLES

Page

Table 1: TSCC Subscales Item Content……. 42

Table 2: CTQ Subscale Items……. 45

Table 3: YASB Subscale Items…….. 47

Table 4: Reverse Coded Items……... 54

Table 5: Frequency Distribution: Demographics, Entire Sample…….. 63

Table 6: Pearson Correlations for Trauma History, Trauma Symptom, and Outcome Variables……. 65

Table 7: Pearson Correlations for Trauma History and Trauma Symptom……... 66

Table 8: Means and Standard Deviations for Males and Females……. 68

Table 9: Means and Standard Deviations for Social, Relational, and Overt Aggression…….. 69

CHAPTER I

INTRODUCTION

Juvenile Delinquency

Juvenile delinquents, or juvenile offenders, include children and adolescents who commit an illegal act prior to the legal age of adulthood. Delinquent behaviors include destruction or stealing of property, commission of violent crimes against persons, possession or sale of alcohol or drugs, and illegal possession of weapons. Other acts considered delinquent, because they are committed by a juvenile, include truancy, running away, alcohol use or possession, and curfew violations; these acts are called status offenses (Office of Juvenile Justice and Delinquency Prevention, [OJJDP], 2013).

In 2011, law enforcement agencies made nearly 1.5 million arrests of people under the age of 18, representing a 31 percent decrease since 2001 (OJJDP, 2013). Interestingly, although the overall arrest rate has decreased for juveniles in the United States, the female arrest rate has increased nearly 66 percent over the past two decades (OJJDP, 2010).

Frequently, juvenile arrests are the result of aggressive behaviors. Juvenile arrests are most often categorized into three types of crime; violent offenses, property crime offenses, and status offenses (OJJDP, 2014). Males who enter the juvenile justice system account for nearly 84 percent of arrests for violent crimes (American Psychological Association, [APA], 2003) and are more likely to display physical aggression than female juvenile offenders. Although the violent crime rates for females are increasing, about half of females arrested have committed non-violent status offenses, including truancy, running away, and underage drinking (OJJDP, 2014).

Indirect Aggression and Juvenile Delinquency

Indirect aggression, a form of bullying, has been found to be more common among females than males (Crick & Grotpeter, 1995), may be an unconsidered contribution to the aggressive acts shown in delinquent girls. Indirect aggression refers to more covert types of bullying including, excluding others from social activities, damaging others' reputation through spreading rumors or gossiping, and withdrawing friendship as a source of punishment (Crick & Groteper, 1995).

Some research suggests that indirect aggression includes the unified construct of relational and social aggression (Archer & Coyne, 2005), whereas other research suggests that relational and social aggression are two separate constructs (Crothers, Schreiber, Field, & Kolbert, 2008). Social aggression is typically defined as those acts directed toward damaging another's self esteem and/or social status (Galen & Underwood, 1997), whereas relational aggression is defined as those behaviors that focus on the use of the relationship to manipulate others (Crick, 1996). Crothers and colleagues (2008) hypothesized that individuals who engage in relational aggression do not have the interpersonal maturity to effectively deal with interpersonal conflict, whereas individuals who engage in social aggression may have interpersonal maturity but wish to dominate the victim.

Although there are no research studies to date that have investigated the link between relational aggression and law violations; there are some studies that have considered both indirect and overt aggression in females. For example, there are data showing that females with conduct problems have been shown to use more relational aggression in their peer interactions in comparison to both male juvenile offenders and females without conduct problems (Mikami, Lee, Hinshaw, & Mullen, 2008; Moretti, Holland, & McKay, 2001). Other research indicates that

overtly aggressive females do not differ in self-reported relational and social aggression from typically developing adolescent females (Comstock, Crothers, Schreiber, Schmitt, Field, Hughes… & Lipinski, 2013). Specifically, in a sample of girls receiving treatment for aggression in a residential setting, Comstock and colleagues (2013) found rates of relational and social aggression similar to those reported in typically developing female adolescents. That is, the perpetration of relational and social aggression was similar among groups, but the overtly aggressive female adolescents also displayed more verbal and physical aggression. Taken together, it appears that typically developing adolescents may need interventions aimed at reducing relational and social aggression, whereas overtly aggressive adolescents are in need of interventions aimed at reducing relational and social aggression, in addition to verbal aggression, and physical aggression.

There are a host of risk factors that have been associated with the display of aggressive acts including poor parenting, low academic achievement, chaotic neighborhoods, problematic peer associations, as well as drug and alcohol use, to name a few (Bright & Jonson-Reid, 2008; Huizinga, Loeber, Thornberry, & Cothern, 2000; Wasserman, McReynolds, Ko, Katz, & Carpenter, 2005). An additional risk factor; trauma, has been closely linked to both physical/overt aggression as well as indirect aggression. Specifically, child victims of trauma (e.g., emotional abuse) are more likely to display relational aggression and intimate partner violence in adolescence and adulthood (Fang & Corso, 2007; Riggs & Kaminski, 2010). Additionally, research suggests that childhood trauma is related to greater hostility, aggression, and violence later in life (Crawford & Wright, 2007; Messman-Moore & Coates, 2007).

Trauma and Aggression

In a sample of 658 juvenile offenders, Dierkhising, Woods-Jaeger, Briggs, Lee, and Pynoos (2013) reported that 90 percent of justice-involved youth report experienced some type of traumatic event. Trauma is defined as "an emotional response to a terrible event like an accident, rape or natural disaster" (American Psychological Association, n.d.). Trauma may occur as a result of physical abuse or neglect, sexual abuse, or emotional abuse or neglect.

Early traumatic experiences are often cited as risk factors for aggressive and violent behavior. Research suggests that early trauma has a negative impact upon the ability to effectively express and regulate anger as well as other emotions (Erwin, Newman, McMackin, Morrissey, & Kaloupek, 2000). Although both males and females in the juvenile justice system are likely to have experienced trauma, the traumas experienced by males and females are reported to be different. Specifically, males are more likely to report having witnessed a violent event, whereas females are more likely to report being the victim of violence (Kerig & Becker, 2012). Researchers have also demonstrated that among juvenile offenders who report a history of trauma, female offenders are more likely than males to develop mental health problems (Cauffman, Feldman, Watherman, & Steiner, 1998), suggesting that for females, trauma may result in more negative outcomes. For example, Crimmins, Cleary, Brownstein, Spunt, and Warley (2000) suggested that females who have experienced trauma are more likely use alcohol and drugs, develop mental health problems, and engage in violent behaviors. These violent behaviors may then lead to arrest and involvement in the juvenile justice system.

Gaps in the Literature

The influence of relational aggression and trauma on female juvenile offenders highlights the need for research examining gender differences in aggression and trauma among juvenile

offenders. Through examination of aggression and trauma in male and female juvenile offenders, the need for gender specific treatments may be investigated. For example, researchers have suggested that female juvenile offenders may experience more frequent interpersonal difficulties than male offenders, often inhibiting the treatment process. Specifically, in the investigations of treatments aiming to reduce aggressive behaviors, female offenders demonstrated more socially hostile behaviors than males (Chamberlain, 2003) and more interpersonally aggressive behaviors than males (Taylor & Borduin, 2014), both of which negatively impacted treatment effectiveness. Additionally, the relationship between trauma and varying forms of aggression in juvenile offenders has not been thoroughly researched.

Problem Statement

It is evident that aggression in female offenders has not been as widely studied as aggression in male offenders (Crain, Finch, & Foster, 2005). Additionally, research regarding the use of indirect aggression in overtly aggressive (e.g., juvenile offender) populations is limited. One particular risk factor for aggressive behaviors, trauma, has been widely researched; however, although trauma appears to be related to high-level forms of aggression and delinquency; it is unclear whether trauma is related to low level, indirect forms of aggression (e.g., relational and social aggression). Lastly, little research has been conducted in order to determine whether the severity and type of trauma and trauma symptoms is related to the severity and type of aggression displayed among juvenile offenders. The influence of relational aggression and trauma on female juvenile offenders highlights the need for research examining gender differences in aggression and trauma among juvenile offenders. The following questions will be investigated.

Research Questions and Hypotheses

First, research questions focused on the relationship between aggression and trauma history in adolescent offenders. Specifically, research questions asked whether there was a relationship between; overt aggression and trauma history, relational aggression and trauma history, and social aggression and trauma history. It was hypothesized that all forms of aggression investigated would be positively correlated with trauma history.

Next, research questions investigated whether there was a relationship between aggression and trauma symptom severity in adolescent offenders. Specifically, research questions focused on the relationship between; overt aggression and trauma symptom severity, relational aggression and trauma symptom severity, and social aggression and trauma symptom severity. Similar to previously discussed hypotheses, it was hypothesized that overt, relational, and social aggression will each be positively correlated with trauma symptom severity.

Research questions also aimed to investigate whether there were differences in the incidence of aggression based on gender. Specifically, research questions asked whether there were gender differences in the incidence of overt aggression, relational aggression, and/or social aggression. It was hypothesized that females will use higher rates of relational and social aggression than males. It was also hypothesized that males will use higher rates of overt aggression.

Questions also asked whether there were gender differences in overall trauma history in the sample as well as if there were differences in physical abuse, physical neglect, emotional abuse, emotional neglect, and/or sexual abuse in the sample. It was hypothesized that females would endorse higher rates of sexual abuse compared to males and that male would endorse higher rates of physical abuse.

Additional research questions investigated whether there gender differences in overall trauma symptom severity as well as severity of PTSD symptoms, depression symptoms, anxiety symptoms, dissociation symptoms, anger symptoms, and/or sexual concern symptoms. It was hypothesized that males would demonstrate higher rates of anger symptoms compared to females and that females would demonstrate higher rates of all other symptoms.

Lastly, research questions investigated whether there are gender differences in aggression based on both trauma history and trauma related symptoms. Gender differences in overt aggression, relational aggression, and social aggression based on trauma history and trauma related symptom severity were investigated. It was hypothesized that females with high trauma history and high trauma symptom severity would report the highest rates of social and relational aggression, whereas males with high trauma history and high trauma symptom severity would report the highest rates of overt aggression.

CHAPTER II

LITERATURE REVIEW

Research suggests that there is no single explanation for aggressive behaviors in children (Bandura, 1973; Berkowitz, 1993; Dodge, 1980); however, typically, serious forms of aggressive behavior occur after earlier, less serious forms of aggression. In her book entitled, *Understanding Violence*, Elizabeth Englander (2003) describes the development of aggression in normal children. She reported that infants and toddlers may engage in aggressive behaviors; however, they lack deliberate intent to harm. Through the process of socialization children begin to understand the rules of society and learn that being aggressive can harm others. Children also learn prosocial behaviors to use in place of aggressive behaviors; however, some children lack these prosocial skills, and may still resort to aggressive behaviors later in childhood (Englander, 2003). It is important to note that not all individuals who display early aggressive behaviors progress to displaying serious aggressive behaviors; however, research suggests that most individuals who advance to extremely aggressive behaviors have displayed previous, less serious aggressive behaviors (Loeber, Wing, Keenan, Giroux, Stouthamer-Loeber, Van Kammen, & Maugham, 1993).

Loeber and colleagues (1993) suggested three distinct pathways that lead to the development of aggression in males. The first and earliest pathway, authority conflict, stems from early stubborn behavior which then leads to defiance/disobedience and later authority conflict including truancy and running away from home. The second pathway, known as the covert pathway, begins with minor covert behaviors (e.g., lying, shoplifting) that may lead to more serious covert behaviors (e.g., property crimes, vandalism, burglary). The third pathway, or the overt pathway, begins with minor overt aggression (e.g., bullying) and leads to more

serious forms of overt aggression (e.g., physical fighting, gang fighting) and eventually severe violence (e.g., rape, attacks etc.).

Analyses from the Pittsburgh Youth Study (Loeber, Wei, Stouthamer-Loeber, Huizanga, & Thornberry, 1999) provided further support for the previously discussed pathways to aggression and suggested that the development of aggression in boys took place systematically and followed a progression from less serious to more serious aggression. Although there is limited research on the development of aggression in girls, Gorman-Smith and Loeber (2005) suggested that similar developmental patterns of aggression and delinquent behaviors were found for girls, with approximately 70 percent of girls involved in the Pittsburgh Youth Study following the same pathways.

Early aggression appears to be the most significant predictor of delinquent behavior (Tremblay, Pihl, Vitaro, & Dobkin, 1994). For example, Haapasalo and Tremblay (1994) found that physical aggression in kindergarten was a significant predictor of later involvement in property crimes. Early aggressive behaviors also appear to significantly predict later aggressive and delinquent behaviors, whereas, prosocial behaviors appear to be a protective factor for those who are at a higher risk of engaging in delinquent behaviors (Haapasalo & Tremblay, 1994). Specific prosocial behaviors may include behaviors such as helping, sharing, cooperating, and effective communication.

High Levels of Aggression

Delinquency and Aggression

Delinquency refers to any illegal act committed by a juvenile, or someone under the legal age of adulthood. In 2011, law enforcement agencies in the U.S. made nearly 1.5 million arrests of individuals under the age of 18 (Office of Juvenile Justice and Delinquency Prevention

[OJJDP], 2014). A child or adolescent may be considered delinquent for breaking any federal, state, or local criminal laws. A youth may also be considered delinquent for status offenses including behaviors such as underage drinking, truancy, or running away (OJJDP, 2014).

Behavior Problems Associated with Juvenile Delinquency

In 2006, the National Mental Health Association reported that the prevalence of disruptive behavior disorders among youth in juvenile justice systems was between 30 percent and 50 percent. Children and adolescents with disruptive behavior disorders and conduct problems engage in aggressive and antisocial behaviors that violate the rights of others or major societal norms. These difficulties are often associated with negative outcomes including, but not limited to, psychiatric disorders, delinquency, substance use, and academic problems (Barry, Barry, Deming, & Lochman, 2008). In educational settings, students with conduct problems typically demonstrate aggressive and antisocial behaviors that disrupt the school environment and negatively affect both peers and teachers (Kimonis, Ogg, & Fefer, 2014). Commonly studied conduct problems and aggressive behaviors that may lead to juvenile delinquency include, Conduct Disorder (CD) and Oppositional Defiant Disorder (ODD).

Conduct Disorder. According to the *DSM-5*, CD is defined as a "repetitive and persistent pattern of behavior in which the basic rights of others or major age-appropriate societal norms or rules are violated" (APA, 2013). For example, the types of behaviors included in the CD diagnosis consist of aggressive conduct that threatens physical harm to people or animals, nonaggressive conduct that causes property loss or damage, deceitfulness and theft, and serious violations of rules (Fanti, Demetriou, & Kimonis, 2013).

According to the *Diagnostic and Statistical Manual* (5th ed.; DSM–5; American Psychiatric Association [APA], 2013), there are two types of CD, Childhood-Onset and

Adolescent-Onset CD. The distinction between subtypes is made based on the age of onset of conduct problems. Childhood-onset CD is diagnosed when the onset of symptoms occurs prior to age 10, whereas adolescent-onset CD is diagnosed when the onset of symptoms occurs after age 10 and prior to adulthood (APA, 2013). Youth diagnosed with childhood-onset CD typically have a higher risk for lifelong difficulties including co-morbid mental health problems and criminal activity (Canino et al., 2010).

In addition to differences in age of onset of CD, recent research has suggested that the presence of significant levels of callous-unemotional (CU) traits designates a clinically important and etiologically distinct subgroup of children and adolescents with CD (Frick, Ray, Thornton, & Kahn, 2014). Callous unemotional traits characterize children who lack empathy and guilt and display uncaring attitudes and behaviors in relation to others (Kimonis et al., 2014). This distinction between subgroups of children and adolescents with CD is important because the presence of CU traits (i.e., lack of remorse/empathy, callous use of others, shallow/deficient affect) designates children and adolescents with CD that shows a more severe and aggressive pattern of antisocial behavior (APA, 2013; Kimonis et al., 2014).

Oppositional Defiant Disorder. Youth diagnosed with ODD display a pattern of disruptive behavior characterized by anger and irritability, argumentativeness, and defiance toward authority figures, whereas youth diagnosed with CD display more severe aggressive and antisocial behaviors. ODD is defined by a recurrent pattern of developmentally inappropriate levels of defiant, disobedient, and hostile behavior toward authority figures**.** According to the *DSM-V* (APA, 2013), ODD is defined as a persistent behavioral pattern of angry or irritable mood; argumentative, defiant behavior towards authority figures; and vindictiveness lasting for at least six months. For a clinical diagnosis of ODD, the frequency and intensity of these

behaviors must be outside the typical range for a child's developmental level, gender, and culture. Some research suggests that the worldwide prevalence of ODD is around three percent; however, this number varies widely in the literature ranging from one to sixteen percent (Canino, Polanczyk, Bauermeister, Rohde, & Frick, 2010).

Nearly 50 percent of the children referred for significant behavior problems are diagnosed with ODD (Rockhill, Collett, McClellan, & Speltz, 2006). Children diagnosed with ODD may be quick to lose their temper, disobey parents, teachers, and other adults, ignore rules at home or at school, blame others for their mistakes, and easily annoy others (Rockhill et al., 2006). While most of these behaviors are considered developmentally normal in young children, children with ODD display more extreme behavior problems than what would be considered

Relevant Theory

Biological factors. Results from twin studies have demonstrated that genetic factors may influence aggressive behaviors and antisocial development in early childhood; however, genetic effects appear to be stronger for those with more severe antisocial behavior (Ehringer, Rhee, Young, Corley & Hewitt, 2006). In addition, several neurobiological factors have been associated with conduct problems in youth. These include, lower heart rate, lower skin conductance reactivity, reduced basal cortisol reactivity, abnormalities in the amygdala, and abnormalities in the prefrontal cortex (APA, 2013). Although these neurobiological factors are associated with youth conduct problems, it is still unclear whether the factors are related to ODD and CD diagnoses (APA, 2013).

Social learning theory. Central to social learning theory is the belief that learning criminal behaviors from peers leads to involvement in delinquency (Daigle, Cullen, & Wright, 2007). In a series of experiments, Bandura (1973) demonstrated that children displayed more

aggressive behavior after watching a model behave aggressively. Social learning theory suggests that children learn behaviors through both imitation and observational learning. For example, research has consistently demonstrated that children who are exposed to domestic violence are more likely to engage in violent and aggressive behaviors as adults (Herrera & McCloskey, 2003). Similarly, Piquero, Gover, MacDonald, and Piquero (2005) found that associating with delinquent peers is a significant predictor of theft. Systems theorists also suggest that delinquent behaviors are associated with interactions between the child/adolescent and his or her environment, including interactions with deviant peers. Systems theorists emphasize the role of individual characteristics, family and peer relations, and the broader environmental context in the development of delinquent behaviors (Borduin & Ronis, 2012).

Integrated theory. Systems theorists emphasize the role of individual characteristics, family and peer relations, and the broader environmental context in the development of delinquent behaviors (Borduin & Ronis, 2012). Agnew's integrated theory of juvenile delinquency also proposes that association with delinquent peers is a primary determinant of juvenile delinquency (Agnew, Piquero, & Cullen, 2009). Combining aspects of social learning theorists and systems theorists, the integrated theory of juvenile delinquency suggests that low bonding to conventional socializing agents, such as family or school, increases the chances that youths will associate with delinquent peers, ultimately increasing the likelihood of deviant behavior.

Consistent with integrated theory, Borduin and Ronis (2012) found that female juvenile offenders demonstrated severe disturbances in their family and peer relations. Specifically, using a sample of 142 female participants ages 11 to 17, Borduin and Ronis (2012) examined risk factors among violent female offenders, nonviolent female offenders, and non-delinquent youths

and found that females who commit both serious violent or nonviolent crimes have low bonding to family and school and high bonding or involvement with delinquent peers. These results suggest the importance of family and peer relations in the influence of delinquent behaviors. Overall, the theories used to explain juvenile delinquency conclude that individual characteristics as well as environmental characteristics are important correlates of delinquent and aggressive behaviors.

Risk Factors for Delinquency

In addition to early aggression, several additional risk factors are linked to juvenile delinquency. For example, individuals with attention problems and hyperactivity are more likely to behave impulsively and engage in risk taking behaviors, which may lead to delinquency (Hawkins, Herrenkohl, Farrington, Brewer, Catalano, Harachi, & Cothern, 1998). Individuals with low intelligence scores have also been found to be more likely to engage in delinquent behaviors (Moffitt, Lynam, & Silva, 1994). Similarly, Herrenkohl, Guo, Kosterman, Hawkins, and Catalano (2001) found that students with low academic achievement are at a higher risk for delinquency.

Mental health disorders. Research indicates that between 60 and 80 percent of youth involved with the juvenile justice system meet the criteria for at least one mental health disorder. Of this group, nearly 80 percent meet the diagnostic criteria for two or more mental health or substance abuse disorders (APA, 2010). In addition, approximately 15 to 20 percent of youth involved with the juvenile justice system experience significant emotional disturbances, a rate nearly 10 times higher than non-delinquent youths (APA, 2010). Similarly, research related to substance abuse and juvenile offenders indicates that substance abuse usually co-occurs with mental health disorders. In samples of juvenile offenders, previous research indicated that

female juvenile offenders engage in higher levels of substance abuse compared to non-offenders (Palmer, Jinks, & Hatcher, 2006).

Environmental characteristics. Family characteristics including parental conflict, poor supervision, and poor parent-child relationships have also been linked to delinquency (Derzon & Lipsey, 2000). In a review of the longitudinal research examining juvenile delinquency risk factors, Lipsey and Derzon (1998) found that having antisocial parents and/or parents with criminal backgrounds were predictive of juvenile delinquency for six to 11 year olds. For older children, peer-related risk factors appear to play a more important role (Lipsey & Derzon, 1998). Specifically, involvement with peers who engage in delinquent behavior, peer approval of delinquent behavior, and peer pressure to engage in delinquent behavior are strongly associated with juvenile delinquency (McCord, Widom, & Crowell, 2001). In addition to peer and family influences, previous research suggests a connection between violent and/or adverse environments and juvenile delinquency (McCord et al., 2001). For example, living in neighborhoods with high levels of poverty and crime is predictive of involvement in delinquent acts (Herrenkohl et al., 2001; McCord et al., 2001).

Low levels of aggression. Research also suggests that bullying in early childhood may be predictive of later violence and delinquency (Limber & Nation, 1998). For example, Eron, Huesmann, Dubow, Romanoff, and Yarmel (1987) found that in a sample of 500 children, aggressive behavior at age eight significantly predicted criminal behavior later in life. Similarly, in a bullying study, Olweus (1993) found that children who were identified as bullies were more likely to commit criminal acts (i.e., vandalism, fighting, theft, and truancy) compared to non-bullies.

Low Levels of Aggression

Bullying

International research has demonstrated that bullying is frequent and problematic worldwide (Smith, Morita, Junger-Tas, Olweus, Catalano & Slee, 1999). Bullying occurs more often than most people believe and is considered to be a common experience for children and adolescents in schools (Swearer, Song, Cary, Eagle, & Mickelson, 2001). In a nationwide study, Nansel, Overpeck, Pilla, Ruan, Simons-Morton, & Scheidt (2001) found that nearly 30 percent of middle school students were involved or affected by school bullying. In addition, around 13 percent of students were identified as bullies and around 11 percent of students were identified as victims. Researchers also found that a little more than seven percent of students were identified as both bullies and victims. More recently, Robers, Kemp, Truman, and Snyder (2013) found that 28 percent of students reported experiencing bullying behaviors over the past academic year.

Bullying has become a major concern in schools due to the negative outcomes and consequences for both bullies and victims. Such outcomes include depression, anxiety, low self-esteem, academic underachievement and suicidal ideation (Smokowski & Kopasz, 2005). Additionally, children and adolescents identified as bullies are more likely to drink alcohol and have substance abuse problems (Sullivan, Farrell, & Kliewer, 2006) and are more likely to experience social difficulties including exclusion and social isolation (Crick and Bigbee, 1998). Lastly, students who are involved in bullying are more likely to report conduct problems and display violent behaviors (Nansel et al., 2001).

The most widely accepted definition of a bully is someone who directly or indirectly causes or attempts to cause fear, discomfort, or injury upon another person. Bullying is an intentional and purposeful attempt to harm victims, typically occurring repeatedly and over time.

There is usually a power imbalance between the perpetrator and the victim, where the perpetrator has more (real or perceived) physical or social power (Olweus, 1993). As a result, bullying differs from other forms of aggression in that bullying is not always the result of conflict between individuals, but instead may be unprovoked, devoid of emotion, used for personal gain, or used to control/dominate others. Commonly identified types of bullying include physical (e.g. hitting, kicking, etc), verbal (e.g. teasing, name calling, etc.), and relational or social bullying (e.g. spreading rumors, social exclusion, etc.; Nansel et al., 2001). Overall, bullying may be categorized as either direct (e.g., physical and verbal bullying) or indirect (relational and social bullying).

Indirect Aggression

Indirect aggression is defined as aggression that occurs in the form of manipulation, gossiping, spreading rumors, destroying relationships, and social exclusion (Olweus, 1993). Some research suggests that indirect aggression includes the unified construct of relational and social aggression (Archer & Coyne, 2005), whereas other research suggests that relational and social aggression exist as two separate constructs (Crothers, Schreiber, Field, & Kolbert, 2008). For example, examination of the factor structure of the Young Adult Social Behavior Scale (YASB), Crothers, Schreiber, Field, and Kolbert (2008) aimed to determine whether relational and social aggression can be measured as separate factors. Specifically, researchers hypothesized that relational aggression and social aggression are separate constructs because the two types of aggression differ in the intent or goal of the perpetrator. In their sample of 629 college students, confirmatory factor analysis results indicated that two distinct factors exist; direct relationally aggressive behaviors and socially aggressive behaviors (Crothers et al., 20098).

Relational aggression. Relational aggression refers to harm within relationships that is caused by covert bullying or manipulative behavior (Young et al., 2010). According to Crick and Grotepeter (1995), relational aggression is defined as "behaviors that are intended to significantly damage another child's friendships or feelings of inclusion by the peer group" (pp.177). For example, relational aggression may include behaviors such as, excluding others from social activities and withdrawing friendship as a source of punishment. In a study of nearly two thousand seventh through ninth grade adolescents, Herrenkohl and Herrenkohl (2007) found that approximately six percent had used physical aggression, 11.9 percent used relational aggression, and 3.4 percent used both, suggesting that relational aggression is used more frequently than physical aggression.

Social aggression. Social aggression, which is often included in the definition of relational aggression (Crick & Grotepeter, 1995), was initially defined as behaviors, typically non-confrontational or concealed behaviors, that cause interpersonal damage (Cairns et al., 1989). Social aggression is typically defined as those acts directed toward damaging another's self esteem and/or social status (Galen & Underwood, 1997). This definition of social aggression includes gossiping, social exclusion, and social alienation.

Relevant Theory

According to an ecological systems theory approach, bullies and victims are in the center of an interrelated system, where reciprocal relationships exist between the individual, and the individual's microsystem (adolescent's family, peers, school, and other immediate influences), mesosystem (interactions between the adolescent's family, peers, school, and other immediate influences), exosystem (systems of institutions that indirectly affect the adolescent such as, the community and government), macrosystem (an adolescent's subculture and culture), and

chronosystem (environmental events, transitions over the life course, and sociohistorical circumstances; Bronfenbrenner & Ceci, 1994). The behaviors of bullies and victims are influenced by their individual characteristics in addition to their ecological contexts. Consistent with the ecological systems theory approach to bullying, Swearer and Espelage (2004) found that students involved in bullying often exhibit problems in other areas of their life including family and peer relations, school difficulties, and community difficulties.

Risk Factors for Bullying

Among those who are identified as bullies, a variety of risk factors exist. Many of these bullying risk factors overlap with the risk factors for delinquency, suggesting that low levels of aggression (e.g., bullying) are related to more severe levels of aggression (e.g., delinquency). For example, Gibb, Horwood, and Fergusson (2011) reported that bullying may lead to violent offenses, property offenses, and police arrests.

Environmental characteristics. Similar to peer risk factors for delinquency, peers play an important role in influencing bullying behaviors. When members of a peer group are involved in bully perpetration, other members of that peer group likely to be involved on bullying as well (Salmivalli, Huttunen, & Lagerspetz, 1997). Some researchers suggest that a lack of social skills may be linked to bullying behaviors (Pepler, Jiang, Craig, & Connolly, 2008), however, other researchers suggest that a specific subgroup of bullies possess superior social skills (Rodkin, Farmer, Pearl, & VanAcker, 2006). Bullies with superior social skills are often perceived by peers as popular, positively reinforcing their bullying behaviors (Rodkin et al., 2006).

Family characteristics also play a key role in bullying. In a meta-analysis on bullying, Duncan (2011) reported that bullies typically come from families with low warmth, high levels

of aggressive behaviors, poor family functioning, and authoritarian parenting styles. Additionally, frequent family conflict and poor parental monitoring are predictive of bullying behaviors at school (Cook, Williams, Guerra, Kim, & Sadek, 2010; Farrington & Ttofi, 2011).

Students who bully others frequently report living in violent neighborhoods (Bacchini, Esposito, & Affuso, 2009), suggesting a link between unsafe neighborhood environments and bullying. Swearer et al. (2011) also reported that living in a safe, connected neighborhood predicted less bullying than living in an unsafe, violent neighborhood. Similarly, in a sample of middle school students, bullying behavior was positively associated with concerns about neighborhood safety (Espelage, Bosworth, & Simon, 2000).

Individual characteristics. Of special concern to schools and researchers are student populations that are more at-risk for bullying. For example, racial and ethnic minorities, lesbian, gay, bisexual, and transgender students, students with disabilities, and students from low-income families are more likely to be bullied compared to other students (Hong & Espelage, 2012). Bullying behaviors also differ according to gender. Specifically, physical bullying is more common among males whereas verbal, relational, and social bullying are more common among females (Olweus, 1993).

Although those who are involved in bullying and delinquency engage in different types of aggressive behavior, the risk factors leading to these behaviors appear to be quite similar. Similar peer factors, family structure, and neighborhood characteristics appear to play a key role in predicting both bullying and delinquency. This connection among the risk factors for these behaviors suggests the need to further investigate the relationship between bullying and juvenile delinquency.

Link Between Delinquency and Bullying

As previously discussed, most individuals who behave aggressively, display low levels of aggression however; for some individuals, these low levels of aggression may lead to higher levels or more serious forms of aggression (Loeber et al., 1999; Tremblay et al., 1994). For example, one low level form of aggression, bullying, has been linked to the development of more serious forms of aggression. In a longitudinal study of 856 children, researchers found that participants' level of aggression at age eight was the best predictor of criminal behavior over the next 22 years (Huesmann, Eron, & Dubow, 2002). Similarly, in studies of bullying behavior, Olweus (1993) found that children identified as bullies were more likely than their peers to commit antisocial acts including vandalism, fighting, and theft. Additionally, these "bullies" were more likely than their non-bullying peers to have an arrest by the time that they reached adulthood.

One explanation for the link between bullying and later, more serious aggressive behavior suggests that children engaging in bullying become locked into a bullying cycle. Specifically, through bullying, a child achieves a goal, reinforcing the bullying behavior and the belief that behaving aggressively can help achieve goals (Rubin et al., 1998). Additionally, because bullies are often rejected by peers and lack friends, they have fewer opportunities to learn prosocial skills (Rubin, Bukowski, & Parker, 1998), which as previously discussed, serve as a protective factor for aggressive behavior. Furthermore, research suggests that children who are rejected by peers, lack prosocial skills, and engage in aggressive behaviors are a risk for juvenile delinquency (Coie & Dodge, 1998).

Gender Differences in Delinquency and Bullying

Over the past two decades, there has been a steady increase in the proportion of adolescent females who have come into contact with the juvenile justice system (Snyder & Sickmund, 2006). Specifically, youth arrest rates for males have decreased by 16 percent, whereas female arrest rates have increased by 66 percent (Office of Juvenile Justice and Delinquency Prevention, 2010). As a result, adolescent females now account for nearly 30 percent of all serious crimes committed by youth (Sickmund & Puzzanchera, 2014).

For both males and females, the arrest rates increased between 1983 and 1996, and then declined through 2011. However, from 1983 to 1996, the female arrest rate had increased nearly 73 percent compared to the male arrest rate, which increased 31 percent. Next, between 1996 and 2011, the female arrest rate declined 35 percent, while the male arrest rate declined nearly 52 percent. Overall, since 1983, the female juvenile arrest rate has increased more and declined less than the male rate, contributing to a lessening of the gender gap in juvenile arrest rates (OJJDP, 2014).

According to the Office of Juvenile Justice and Delinquency Prevention (2014), juvenile arrests are categorized into three types of crime. Violent crimes include murder, rape, robbery and aggravated assault. In 2011, there were 202 arrests for violent crimes for every 100,000 youth between the ages of 10 and 17. The male arrest rate for violent crimes was more than four times the rate for females (OJJDP, 2014). The second category; property crime offenses, include burglary, larceny-theft, motor-vehicle theft, and arson. In 2011, there were 995 property offense arrests for every 100,000 youth between the ages of 10 and 17. Between 2006 and 2009, the male and female rates for property offenses converged, as the male rate declined three percent and the female rate increased 25 percent (OJJDP, 2014). The third category includes other offenses

such as simple assault, vandalism, weapons law violations, drug abuse violation, liquor law violations, disorderly conduct, and running away. The disproportionate increase in female arrest rates for aggravated assault, simple assault, and weapons law violations have also contributed to the narrowed gender disparity in juvenile arrest rates.

Although current arrest statistics indicate that female adolescents are committing crimes at a rate higher than ever before, some researchers suggest that changes in legislation and police reporting practices have disproportionally impacted female arrest rates. Despite arguments against the rise in female crime, the high rate of females entering the juvenile justice system highlights the need to investigate this population. Specifically, research suggests the presence of gender differences in both risk factors and expression of aggressive behaviors among juvenile offenders.

Gender Differences in the Expression of Behavior

Conduct Disorder. Prevalence rates for CD in males range from 2.2 to eight percent, whereas prevalence rates in females range from zero to 1.4 percent (Maughan, Rowe, Messer, Goodman, & Meltzer, 2004). Due to the more frequent diagnosis in males, most research regarding CD has been conducted using male samples (Berkout, Young, & Gross, 2011). Additionally, research regarding explanations for gender differences is somewhat inconsistent. Loeber and Keenan (1994) suggest that although CD occurs at lower rates in females, when diagnosed, the disorder is more severe among female populations, whereas other research suggests that CD is diagnosed less often in females because the diagnostic criteria for CD is not an accurate description of female symptoms (Berkout, Young, & Gross, 2011; Moffitt, Arseneault, Jaffee, Kim-Cohen, Koenen, Odgers ... & Viding, 2008). Similarly, Baillargeon and colleagues (2007) found that males diagnosed with CD exhibited greater rates of aggression than

females diagnosed with CD (Baillargeon, Zoccolillo, Keenan, Côté, Pérusse, Wu, ... & Tremblay, 2007).

Consistent with Loeber and Keenan (1994), additional research has found that girls who are diagnosed with CD appear to show greater pathology than boys. Specifically, girls with CD demonstrate higher levels of bullying and callousness than males diagnosed with CD (Viding et al., 2009). In addition, females with CD have greater comorbidity with internalizing disorders, which are associated with more negative outcomes, again suggesting that when CD is present among females, the symptoms are more severe (Dishion, 2000).

Oppositional Defiant Disorder. Research consistently suggests that ODD is more frequent in boys than girls (Rockhill et al., 2006). For example, Alvarez and Ollendick (2003) found that compared to boys, young girls score higher on empathy and language skills, suggesting that these skills may be protective factors for behavior problems in girls. Other research suggests that gender difference may diminish when taking into consideration the person who is reporting ODD symptoms. Specifically, when parents report ODD symptoms, there are few gender differences; however, when teachers report ODD symptoms, there is a higher prevalence rate for boys compared to girls (Maughan, Rowe, Messer, Goodman & Meltzer, 2004). This suggests the possibility that boys with ODD may display more behavioral problems in classrooms than girls with ODD. In addition, some researchers suggest that girls may be experiencing ODD, however, they may display different symptoms than boys display. These researchers argue that different criteria for ODD should be used with girls, because girls often display more covert types of aggression, such as excluding other children from play and gossiping (Maughan et al., 2004).

Indirect aggression. As previously discussed, indirect aggression is one form of bullying that involves manipulation, destruction of relationships, and social exclusion (Olweus, 1993). Even though indirect aggression does not involve actual or threatened physical harm, like direct aggression, its purpose is to defeat or eliminate competition (Archer & Coyne, 2005). Indirect aggression includes the constructs of relational (behaviors intended to damage relationships) and social (behaviors intended to damage another's self-esteem or social status) aggression.

Gender differences in indirect aggression. Research often suggests that indirect aggression is more common among females than males (e.g., Crick, 1996; Crick & Grotpeter, 1995; Herrenkohl & Herrenkohl, 2007). Research also suggests that physical aggression is more common among males (e.g. Björkqvist, Österman, & Kaukiainen, 1992; Crick, Ostrov, Burr, Cullerton-Sen, Jansen-Yeh, & Ralston, 2006). Although female adolescents are consistently shown to use more relational aggression than male adolescents, this gender difference in the type of aggression appears to vary according to age.

In a three-year study of 458 students, Zimmer-Gembeck, Geiger, and Crick (2005) found that there were no gender differences in the use of relational aggression in third grade, however, in sixth grade girls used significantly more relational aggression than boys. It is likely that adolescent females display more behaviors consistent with relational aggression as they age because of the greater emphasis that many females place on interpersonal relationships (Crick & Grotpeter, 1995).

It is also hypothesized that as children become older and more socially skilled, they are more likely to engage in indirect forms of aggression. Additionally, as children age, physical aggression becomes less socially acceptable (Björkqvist et al., 1992; Björkqvist, Osterman, &

Lagerspetz, 1994). Furthermore, females may utilize indirect forms of aggression at an earlier age than males due to earlier maturation of the social skills and verbal skills necessary to engage in indirect aggression (Björkqvist et al., 1992). By adulthood, it appears that males and females utilize relational aggression at similar rates (Loudin, Loukas, & Robinson, 2003; Richardson & Green, 1999). Despite gender differences across development in the use of indirect aggression, research suggests that across all ages and developmental levels, males appear to engage in more physically aggressive behaviors than females (Archer & Coyne, 2005).

Indirect aggression among overtly aggressive females. Although research has not shown a link between high levels of relational aggression and law violations, some research suggests that female offenders may display high levels of relational aggression. For example, Herrenkohl, Catalano, Hemphill, and Toumbourou (2009) found that relational aggression among seventh and ninth grade students predicted later conduct problems (e.g. aggression, substance use, and binge drinking) and later mental health issues (e.g. depression, anxiety), suggesting the influence of relational aggression on delinquent behavior.

In samples of adolescent female offenders and female adolescents with conduct problems, researchers have concluded that girls with these problems use more relational aggression in their peer interactions compared to both males and females without conduct problems (Moretti et al., 2001; Mikami et al., 2008). Contrastingly, other research indicates that overtly-aggressive females do not differ in self-reported relational and social aggression from typically developing adolescent females (Comstock et al., 2013). Specifically, Comstock et al. (2013) found that that typically developing female adolescents reported levels of relational and social aggression similar to overtly-aggressive females; however, in addition to the perpetration of relational and social aggression, these overtly aggressive female adolescents also displayed

more verbal and physical aggression. This research suggests that typically developing adolescents may need interventions aimed at reducing relational and social aggression, whereas overtly aggressive adolescents are in need of interventions aimed at reducing relational and social aggression, verbal aggression, and physical aggression.

In a review of treatments for juvenile offenders, Taylor and Borduin (2014) note that two family-based intervention models have been effective in treating both male and female offenders. These models include multidimensional treatment foster care (MTFC) and multisystemic therapy (MST). Although both models have demonstrated effectiveness in reducing aggression and delinquent behaviors, researchers suggested that female juvenile offenders may experience more interpersonal difficulties than male offenders, hindering the treatment process (Chamberlain, Leve, & DeGarmo, 2007; Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 2009). For example, Chamberlain (2003) found that female offenders demonstrated more socially hostile behaviors, including teasing, defiance, and lying, which resulted in significant problems for foster parents in MFTC. Similarly, Taylor and Borduin (2014) concluded that female offenders involved in MST, demonstrated significant interpersonally aggressive behaviors with family, peers, and therapists. Overall, these results suggest that aggressive behaviors, particularly interpersonal aggression may negatively impact the treatment process of female juvenile delinquents.

Gender Differences in Risk Factors

Previous research suggests varying risks for the development of delinquent behaviors among males and females (Fagan, Van Horn, Hawkins, & Arthur, 2007; Gorman-Smith & Loeber, 2005; Kroneman, Loeber, & Hipwell, 2004). Gender differences in risk factors among juvenile offenders include, but are not limited to mental health problems (Wasserman,

McReynolds, Ko, Katz, & Carpenter, 2005), and maltreatment (Bright & Jonson-Reid, 2008). It is important to note that both males and females have evidenced these precursors to delinquent behaviors, however, the responses to these risk factors may differ according to gender (Bright, Kohl, & Jonson-Reid, 2014).

Mental health problems. Although internalizing mental health problems are risk factors for both genders, these problems may have a stronger impact on females (Cauffman, 2008). For example, Wareham & Boots (2012) found that depression is a stronger indicator of future delinquent behaviors for females than males. Similarly, Miller (1994) found that female juvenile offenders were more likely to have suicidal ideation and behaviors than male juvenile offenders.

Similar to gender differences in other risk factors for juvenile delinquency, gender differences appear to exist in substance abuse among juvenile offenders. For example, researchers have found that between 50 percent and 80 (Henggeler, Clingempeel, Brondino, & Pickrel, 2002) percent of female juvenile offenders report past or current substance abuse. Female offenders report more heroin and cocaine abuse, whereas male offenders report more alcohol use (Palmer, Jinks, & Hatcher, 2006).

Maltreatment/trauma. Research suggests that the types of trauma experienced may differ for males and females. For example, in a sample of incarcerated youth, males reported higher rates of witnessing a violent event, whereas females reported higher rates of being the victim of violence (Kerig & Becker, 2012). Similarly, Wood, Foy, Goguen, Pynoos, and James (2002) found that in a sample of incarcerated youth, females reported significantly higher rates of sexual abuse than males. Specifically, Wood et al. (2002) found that nearly 29 percent of incarcerated females reported being a victim of sexual trauma compared to three percent of incarcerated males.

The negative consequences of abuse and trauma may also vary by gender. For example, research suggests that physical and sexual abuse are more closely linked to offending and running away in females than in males (McCabe, Lansing, Garland, & Hough, 2002; Siegel & Williams, 2003). Further review of the gender differences in trauma among juvenile offenders is reviewed below.

The research on mental health problems and trauma among offenders concludes that these factors may be precursors to, or co-occurring problems of offending behaviors; however, the types of problems and the effects of these experiences may differ according to gender, suggesting the importance of further research differentiating male and female juvenile offenders.

Trauma and Delinquency

As previously reviewed, one specific risk factor, trauma, has been closely linked to both physical/overt aggression as well as indirect aggression. Specifically, research suggests that childhood trauma is related to greater hostility, aggression, and violence later in life (Crawford & Wright, 2007; Messman-Moore & Coates, 2007). Additionally, child victims of trauma (e.g., emotional abuse) are more likely to display relational aggression and intimate partner violence in adolescence and adulthood (Riggs & Kaminski, 2010).

Traumatic Events and Situations

According to the National Child Traumatic Stress Network (2004) children and adolescents may experience acute traumatic events or chronic traumatic situations. Acute traumatic events occur at a particular time and place and involve; (1) experiencing a serious injury to yourself or witnessing a serious injury to or the death of someone else, (2) facing imminent threats of serious injury or death to yourself or others, or (3) experiencing a violation of personal physical integrity. Such events may include school shootings, gang-violence, terrorist

attacks, natural disasters, serious accidents, sudden or violent loss of a loved one, and physical or sexual assault (e.g. raped, physically beat, shot; Hennessey, Ford, Mahoney, Ko, Siegfried, 2004). Chronic traumatic situations refer to trauma that occurs repeatedly over long periods of time. Chronic traumatic situations may include physical abuse, sexual abuse, domestic violence, or involvement in war (NCTSN, 2004.).

Traumatic Stress

Traumatic stress occurs when an individual is exposed to or experiences traumatic events or situations, and when this exposure or experience overwhelms an individual's ability to cope (NCTSN, 2004). Individuals may respond differently to traumatic stress, however symptoms of intense distress include; difficulty sleeping, decreased attention and concentration, anger, and withdrawal. In response to traumatic stress, individuals may develop mental health disorders including posttraumatic stress disorder (PTSD), depression, anxiety, and other behavior disorders (NCTSN, 2004). In addition, repeated trauma may lead to increased engagement in high risk behaviors and increased difficulties with interpersonal relationships. These difficulties and problematic behaviors may also be associated with adolescents' increased likelihood of entering the juvenile justice system (NCTSN, 2004).

Types of Trauma

According to the Substance Abuse and Mental Health Services Administration (SAMHSA, n.d.), the types of trauma include; (1) sexual abuse, (2) physical abuse, (3) emotional abuse, (4) domestic violence, and (5) community violence. Sexual abuse is defined as unwanted or coercive sexual contact or exposure to age-inappropriate sexual material or environments (SAMHSA, n.d.). Physical abuse is defined as non-accidental physical pain or injury. This may be the result of punching, beating, kicking, biting, burning or otherwise physically harming an

individual. Physical abuse also includes severe forms of corporal punishment (U.S. Department of Health and Human Services, 2006).

Emotional abuse includes (1) acts of commission against an individual such as, verbal abuse and excessive demands or expectations that causes harm to an individual and (2) acts of omission against a minor such as, emotional neglect or intentional social deprivation (SAMHSA, n.d.). According to the Department of Justice's (DOJ) Office on Violence Against Women (n.d.), domestic violence is defined as "a pattern of abusive behavior in any relationship that is used by one partner to gain or maintain power and control over another intimate partner." This may include physical, sexual, or emotional abuse. Specific behaviors related to domestic violence include intimidation, manipulation, attempts to frighten, terrorize, threaten, or injure another (DOJ, n.d.). Trauma may also result from additional sources of violence including experiencing or witnessing community violence (e.g. gang-related violence), school violence, bullying, natural disasters, and political violence (SAMHSA, n.d.).

Complex Trauma

Over 90 percent of delinquent youth have experienced a traumatically stressful life event and the typical delinquent has experienced an average of 14 distinct traumas in his or her lifetime (Abram, Teplin, Charles, Longworth, McClelland, & Dulcan, 2004). Additionally, juvenile offenders have been found to be at high risk for multiple trauma (Burton, Foy, Bwanausi, Johnson, & Moore, 1994). Juvenile offenders also appear to be at high risk for developing PTSD as a result of the multiple traumas that they may have experienced (Burton et al., 1994). For example, Costello, Erkanli, Fairbank, and Angold (2002) found that over 82 percent of juvenile offenders reported exposure to multiple traumas compared to 44.5 percent of non-offending youth.

It is also important to consider that individuals who experience trauma that persists over time and across developmental periods are more likely experience negative outcomes (e.g., higher rates of delinquency), compared to those who experienced trauma in only one developmental stage (Thornberry, Ireland, & Smith 2001). According to Ford, Chapman, Mack, and Pearson (2006), trauma experiences result in distress that impacts executive functions of the brain, therefore, if trauma persists over time, youth may demonstrate extreme difficulty regulating affect, a rigid cognitive style, and limited coping strategies.

Link Between Trauma and Aggression

As previously reviewed, research often cites trauma and a risk factor for later aggressive and criminal acts. Specifically, child abuse and/or neglect, witnessing violence, and poverty are common risk factors for aggressive and antisocial behavior (Hussey, Chang, & Kotch, 2006). Agnew (1992) suggested that delinquency in the form of aggression may be a coping mechanism for youth who have experienced trauma.

Research has shown high rates of trauma among juvenile offenders, with some research suggesting that approximately 90 percent of justice-involved youth report experienced some type of traumatic event (Dierkhising et al., 2013). Using DSM-IV criteria, Ford, Hartman, Hawke, and Chapman, (2008) found that 61 percent of youth in a detention center reported being exposed to a traumatic event. Additionally, Kerig, Ward, Vanderzee, and Moeddel, (2009) found that, 85 percent of female juvenile offenders and 72 percent male juvenile offenders met the DSM-IV criteria for exposure to trauma. Similarly, in the Rochester Youth Development Study, children with a history of abuse were significantly more likely to commit violent acts between the ages 14 and 18, even after controlling for gender, ethnicity, socioeconomic status, and family structure (Smith & Thornberry, 1995).

Research suggests that trauma victims may experience a variety of outcomes including; substance abuse, depression, anxiety, and PTSD, to name a few. For children, responses to traumatic events may include difficultly identifying and managing emotions, difficulty with self-regulation, difficulty with impulse control, and hypervigilance or avoidance behaviors (Kisiel, Fehrenbach, Liang, Stolbach, McClelland, Griffin, ... & Spinazzola, 2014). Some research suggests a lack of association between the type of trauma or severity of trauma and later delinquent behavior (Platt & Freyd, 2012); however, other research suggests that youth who experienced physical abuse were more likely to exhibit delinquent behaviors compared to youth who experienced neglect (Grogan-Kaylor, Ruffolo, Ortego, & Clark, 2008; Villodas, Litrownik, Thompson, Roesch, English, Dubowitz, ... & Runyan, 2012). For example, some research suggests that children and adolescents who develop PTSD symptoms have been found to display higher levels of defiance, aggression, and internalizing problems (Scheeringa & Zeanah, 1995). Taken together, it is somewhat unclear whether there are differences in aggression based on the type of trauma experienced.

Gender Differences in Trauma among Juvenile Offenders

As previously discussed in the section reviewing gender differences in trauma as a risk factor for aggression, research suggests that although both males and females in the juvenile justice system are likely to have experienced trauma, the traumas experienced by males and females appear to be different. In addition to gender differences in the types of experiences, research also suggests that males and females may differ in their responses to trauma.

Males are more likely to report having witnessed a violent event, whereas females are more likely to report being the victim of violence (Kerig, & Becker, 2012; Steiner et al., 1997; Wood et al., 2002). For example, Cauffman, Feldman, Waterman, and Steiner (1998) found that

female juvenile offenders were over three times more likely than male offenders to have been a victim of sexual abuse or physical attack. Similarly, in a meta-analysis, Tolin and Foa (2006), found that adolescent females were more likely to have a history of sexual assault and sexual abuse than adolescent males. This pattern of gender differences is also found among adolescent females in the juvenile justice system; however, it is important to note that female adolescents in the juvenile justice system are more likely to have experienced a traumatic event in general, compared to female adolescents in the general population (Tolin & Foa, 2006).

Post Traumatic Stress Disorder (PTSD) has been found to be more common among youth in the juvenile justice system than in community samples, with higher rates of PTSD for juvenile females than males (Abram et al., 2004), suggesting that males and females may differ in their symptoms related to trauma and/or responses to trauma. Specifically, in a sample of juvenile delinquents, Abram et al. (2004) found that significantly more males, 93.2 percent, than females, 84 percent, reported experiencing a traumatic event, however, the females met the diagnostic criteria for PTSD more often than males, suggesting that although both male and female juvenile offenders may experience trauma, these traumatic events may have a stronger impact on female offenders. Similarly, Dierkhising et al. (2013) found that early age of onset of trauma exposure was significantly correlated with increased post-traumatic stress reactions among females adolescents, but not among male adolescents.

Gender differences in the relationship between trauma and aggression. Trauma symptoms have consistently been found to be related to the severity of aggressive behaviors; however, researchers have found gender differences in aggressive styles, consistent with previously discussed gender differences in aggression. For example, Cullerton-Sen, Murray-Close, Cicchetti, Crick, & Rogosch (2008) found that child maltreatment was associated with

aggressive behaviors; however, gender differences emerged based on type of maltreatment and type of aggression. Specifically, they found that in males, maltreatment was associated with physical aggression, whereas, in females, maltreatment was associated with relational aggression. Additionally, for males physical abuse was associated with overall aggression; whereas for females, sexual abuse was associated with overall aggression.

In a study of investigating the effects of neglect on adolescent aggression and delinquency, Logan-Greene and Jones (2015) found that males may be more likely to develop aggressive and delinquent behaviors in response to chronic neglect compared to females. Additionally, the authors stated that findings do not suggest that females are not impacted by chronic neglect but rather that effects of chronic neglect may appear different in males and females. Furthermore, Cauffman, Feldman, Watherman, and Steiner (1998) reported that female offenders who have experienced trauma more likely than males to develop mental health problems, providing support for gender differences in the impact of traumatic events. Similarly, in a study investigating the relationships among trauma exposure, PTSD, and mental health problems in a sample of juvenile offenders found that female offenders demonstrated higher rates of trauma exposure, higher rates of PTSD, and higher rates of mental health problems (e.g., depression, anxiety, somatic complaints; Kerig, Ward, Vanderzee, & Moeddel, 2009).

Relevant Theory

A number of theories have been proposed to help explain the link between trauma and delinquency. For example, Ford Chapman, Mack, and Pearson (2006) propose the *Trauma Coping Model,* which suggests that the link between childhood trauma and later aggression is mediated by mental health problems, such as depression, anxiety, and irritability. This model proposes that childhood trauma leads to physical and mental distress, which in then leads to

emotional dysregulation, impulsivity, difficulty with cognitive processing, and eventually aggression.

Contrastingly, social learning and emotional numbing hypotheses suggest that aggression/violence is may not be mediated by mental health problems (Hoeve, Colins, Mulder, Loeber, Stams, & Vermeiren, 2015). For example, consistent with social learning persepctive some researchers suggest that caregivers who physically abuse children are modeling aggressive behavior for youth, increasing their risk for future aggressive behaviors (Kerig & Becker, 2012; Widom, Czaja, & Dutton, 2014). Additionally, the emotional numbing hypothesis suggests that emotional numbing is used to help cope with overwhelming distress associated with trauma, which leads to emotional detachment and ultimately increased externaling (e.g., aggressive) behaviors (Kimonis, Fanti, Isoma, & Donoghue, 2013). Lastly, some research suggests that youth who have experienced trauma either in their home or in their community, may resort to self-help methods in order to feel safe. These self-help methods may include behaviors such as, carrying weapons, engaging in physical conflicts, joining gangs, and drug or alcohol use (Burrell, 2013).

Summary

Indirect aggression, a form of bullying, has been found to be more common among females than males (Crick & Grotpeter, 1995) and may be an unconsidered contribution to the aggressive acts shown in delinquent girls. Indirect aggression refers to more covert types of bullying, including excluding others from social activities, damaging others' reputation through spreading rumors or gossiping, and withdrawing friendship as a source of punishment (Crick & Groteper, 1995). Although there are no research studies to date that have investigated the link between relational aggression and law violations; there are some studies that have considered

indirect and overt aggression in females. For example, there are data showing that females with conduct problems have been shown to use more relational aggression in their peer interactions in comparison to both male juvenile offenders and females without conduct problems (Mikami et al., 2008; Moretti et al., 2001). Additionally, researchers have suggested that female juvenile offenders may experience more frequent interpersonal difficulties than male offenders, often inhibiting the treatment process (Chamberlain, 2003; Taylor & Borduin, 2014).

An additional obstacle to the treatment of female offenders is the presence of previous traumas, which has been closely linked to both physical/overt aggression as well as indirect aggression. Specifically, child victims of trauma (e.g., emotional abuse) are more likely to display relational aggression and intimate partner violence in adolescence and adulthood (Fang & Corso, 2007; Riggs & Kaminski, 2010). Additionally, research suggests that childhood trauma is related to greater hostility, aggression, and violence later in life (Crawford & Wright, 2007; Messman-Moore & Coates, 2007).

Although both males and females in the juvenile justice system are likely to have experienced trauma, the traumas experienced by males and females are reported to be different. Specifically, males are more likely to report having witnessed a violent event, whereas females are more likely to report being the victim of violence (Kerig & Becker, 2012). Researchers have also demonstrated that among juvenile offenders who report a history of trauma, female offenders are more likely than males to develop mental health problems (Cauffman et al., 1998), suggesting that for females, trauma may result in more negative outcomes.

Purpose of the Current Study

Overall, trauma appears to be related to high-level forms of aggression and delinquency; however, it is unclear whether trauma is related to low level, indirect forms of aggression (e.g.,

relational and social aggression). Additionally, little research has been conducted in order to determine whether the severity and type of trauma and trauma symptoms is related to the severity and type of aggression displayed among juvenile offenders. Lastly, the influence of relational aggression and trauma on female juvenile offenders highlights the need for research examining gender differences in aggression and trauma among juvenile offenders. Through examination of aggression and trauma in male and female juvenile offenders, the need for gender specific treatments may be investigated.

Chapter III

METHODS

The purpose of this quantitative study was to investigate aggression, trauma, and trauma-related experiences among male and female juvenile offenders. Below is a description of the procedures for recruitment of participants, administration of measures, and data collection. Psychometric properties of the measures used, along with research methodology, and data analyses, are reviewed.

Research Questions

Research Question 1. Is there a relationship between measures of aggression and trauma history among adolescent offenders?

Hypothesis 1. It was hypothesized that overt, relational, and social aggression will each be positively correlated with trauma history.

Research Question 2. Is there a relationship between measures of aggression and trauma symptom severity among adolescent offenders?

Hypothesis 2. It was hypothesized that overt, relational, and social aggression will each be positively correlated with trauma symptom severity.

Research Question 3. Are there gender differences in measures of aggression among adolescent offenders?

Hypothesis 3. It was hypothesized that females will use higher rates of relational and social aggression than males. It was also hypothesized that males will use higher rates of overt aggression.

Research Question 4. Are there gender differences in measures of trauma history among adolescent offenders?

***Hypothesis 4*.** It was hypothesized that females would endorse higher rates of sexual abuse compared to males and that male would endorse higher rates of physical abuse.

Research Question 5. Are there gender differences in measures of trauma symptom severity among adolescent offenders?

Hypothesis 5. It was hypothesized that males would demonstrate higher rates of anger symptoms compared to females and that females would demonstrate higher rates of all other symptoms.

Research Question 6. Are there gender differences in measures of overt aggression based on trauma history and trauma related symptom severity?

Hypothesis 6. It was hypothesized males with high trauma history and high trauma symptom severity would report the highest rates of overt aggression.

Research Question 7. Are there gender differences in measures of relational aggression based on trauma history and trauma related symptom severity?

Hypothesis 7. It was hypothesized that females with high trauma history and high trauma symptom severity would report the highest rates of relational aggression.

Research Question 8. Are there gender differences in measures of social aggression based on trauma history and trauma related symptom severity?

Hypothesis 8. It was hypothesized that females with high trauma history and high trauma symptom severity would report the highest rates of social aggression.

Participants

Participants in the study consisted of a convenience sample of 34 adolescents between the ages of 14 and 18 years. All participants were enrolled in a behavior-disordered school in the Mid-Atlantic United States. More specifically, all participants were adjudicated through the

juvenile justice system. Information regarding the specific crimes of the participants is not available.

A total of 73 students were referred for participation. Once referred, students under age 18 were given a permission form for parents or guardians to sign. A total of 54 permission forms were sent home with students under age 18. Of the 54 permission forms sent home, 15 permission forms were returned representing a return rate of 28 percent. Students age 18, were provided with a consent form. Nineteen students age 18 signed a consent form agreeing to participate in the study. In total, 34 students participated in the study (47 percent of total referred students).

Measures

Demographics

Demographic information was obtained from each participant using an investigator-developed questionnaire. Specific questions including participants' birth date, primary language, race, grade, and gender were asked.

Trauma Symptoms Checklist for Children

The Trauma Symptoms Checklist for Children (TSCC) was used to assess the effects of childhood trauma through self-reported trauma-related symptoms. Specifically, the TSCC is used to evaluate children who have experienced traumatic events including physical and sexual abuse, victimization by peers, major losses, the witnessing of violence done to others, and natural disasters.

The TSCC is a 54 item self-report questionnaire with six clinical scales (Anxiety, Depression, Anger, Posttraumatic Stress, Dissociation, and Sexual Concerns) and two validity scales, (Underresponse and Hyperresponse; *Table 1*). Scale scored were derived from the sum of

individual item scores. Participants responded to items using a four-point Likert scale from one ("never") to four ("almost always"). High scores on the TSCC represent greater trauma symptoms. The TSCC measures posttraumatic stress and related psychological symptoms in children ages 8-16 years who have experienced traumatic events (e.g., physical abuse/neglect, emotional abuse/neglect, sexual abuse, witness to violence, etc). Although the TSCC was originally designed for use with children ages 8-16, the author reports it may also be utilized with older adolescents, with the caution that the wording may be overly simple for this age group (Briere, 1996), therefore the present study utilized the measure for students up to age 18.

Table 1

TSCC Subscales Item Content

Scale	Item Content
Anxiety (ANX)	Generalized anxiety, hyperarousal, worry, specific fears, sense of impending danger
Depression (DEP)	Feelings of sadness, unhappiness, and loneliness; episodes of tearfulness; depressive cognitions such as guilt and self-denigration; and self-injuriousness and suicidality
Anger (ANG)	Angry thoughts, feelings, and behaviors including feeling mad, feeling mean, and hurting others; having difficulty de-escalating anger; wanting to yell at or hurt people; and arguing and fighting
Posttraumatic Stress (PTS)	Posttraumatic symptoms, including intrusive thoughts, sensations, and memories of painful past events; nightmares; fears; and cognitive avoidance of painful events
Dissociation (DIS)	Disscosiate symptomology, including derealization; one's mind

	going blank; emotional numbing; pretending to be someone else or somewhere else; day-dreaming; memory problems; and dissociative avoidance
Sexual Concerns (SC)	Sexual thoughts or feelings that are atypical when they occur earlier than expected or with greater than normal frequency; sexual conflicts; negative responses to sexual stimuli; and fear of being sexually exploited

Briere (1996)

TSCC reliability and validity. The TSCC is standardized on a large sample of racially and economically diverse children, providing norms on age and sex (Briere, 1996). Reliability analysis of the TSCC scales in the normative sample demonstrated high internal consistency for five of the six clinical scales, with alphas ranging from .82 to .89. The Sexual Concerns scale has slightly lower reliability, with an alpha of .77 (Briere, 1996). Additionally, the TSCC has demonstrated strong construct validity (Evans, Briere, Boggiano, & Barrett, 1994) and convergent and discriminant validity (Briere, 1996; Evans et al., 1994).

Scoring. A total TSCC score was calculated in order to separate participants into "low," "moderate" and "high" trauma symptom categories. The TSCC measured symptoms associated with trauma including anxiety, depression, anger, posttraumatic stress, dissociation, and sexual concerns. Raw scale scores were derived by summing the response values for all items comprising the scale. Higher scores reflect higher symptomology.

Childhood Trauma Questionnaire

The Childhood Trauma Questionnaire (CTQ) was used as a measure of trauma history. The CTQ is a 28-item self-report screening measure for abuse and neglect histories. The CTQ is

a brief, reliable, and valid screening measure developed for adolescents and adults ages 12 and older. The CTQ measures five types of abuse and neglect; emotional abuse, emotional neglect, physical abuse, physical neglect, and sexual abuse (see *Table 2)*. Emotional abuse refers to "verbal assaults on a child's sense of worth or well-being, or any humiliating, demeaning, or threatening behavior directed toward a child by an older person." Physical abuse on the CTQ refers to "bodily assaults on a child by an older person that pose a risk of, or result in, injury." Sexual abuse refers to "sexual contact or conduct between a child and older person; explicit coercion is a frequent but not essential feature of these experiences." Emotional neglect includes, " the failure of caretakers to provide a child's basic psychological and emotional needs, such as love, encouragement, belonging, and support." Lastly, physical neglect refers to "the failure of caregivers to provide a child's basic physical needs, including food, shelter, safety and supervision, and health" (Bernstein, Ahluvalia, Pogge, & Handelsman, 1997).

The CTQ also includes a three-item Minimization/Denial Scale. Participants responded to items using a five-point Likert scale from one ("never true") to five ("always true"). Participants responded to questions about childhood experiences (e.g., "I didn't have enough to eat," "I felt loved," "People in my family hit me so hard that it left me with bruises or marks"). Total scores were calculated for each clinical scale by summing the item responses for each scale.

Table 2

CTQ Subscale Items

Scale	Items
Physical Abuse	I got hit so hard that I had to see a doctor or go to the hospital.
	My family hit me so hard that it left me with bruises or marks.
	I was punished with a belt/board/cord/other hard object
	I believe that I was physically abused.
	Beaten so badly it was noticed by a teacher/neighbor/doctor.
Physical Neglect	I didn't have enough to eat
	I knew there was someone to take care of me and protect me.
	My parents were too drunk or high to take care of the family.
	I had to wear dirty clothes.
	There was someone to take me to the doctor if I needed it
Emotional Abuse	People in my family called me "stupid," "lazy," or "ugly."
	I thought that my parents wished I had never been born.
	People in my family said hurtful or insulting things to me.
	I felt that someone in my family hated me.
	I believe that I was emotionally abused.
Emotional Neglect	Someone in my family helped me feel important or special.
	I felt loved.
	People in my family looked out for each other.
	People in my family felt close to each other.
	My family was a source of strength and support.

Sexual Abuse	Someone tried to touch me in a sexual way/made me touch them.
	Someone threatened me unless I did something sexual.
	Someone tried to make me do/watch sexual things.
	Someone molested me.
	I believe that I was sexually abused.

Bernstein & Fink (1998)

CTQ reliability and validity. Research suggests that the CTQ has good reliability and high internal consistency. Specifically, over a three month period, the test-retest coefficient was .80 (Fink, Bernstein, Hendelsman, Foote, & Lovejoy, 1995). Internal consistency scores range from .81 to .95 (Berstein et al., 1997). Additionally, validity of the CTQ was found to be satisfactory (Bernstein et al., 1997).

Scoring. A total CTQ score was calculated in order to dichotomize participants into "low" and "high" trauma categories. The CTQ measured five types of abuse and neglect; emotional abuse, emotional neglect, physical abuse, physical neglect, and sexual abuse. Raw scale scores were derived by summing the response values for all items comprising the scale. Higher score reflects greater trauma history.

Young Adult Social Behavior Scale

The Young Adult Social Behavior Scale (YASB), developed by Crothers, Schreiber, Field, and Kolbert (2008), was used to assess participants' relational and social aggression pre and post intervention. The YASB is a 14-item instrument designed to measure self-reported healthy and maladaptive behaviors in friendships or relationships. Specifically, the YASB measures social aggression, relational aggression, and interpersonal maturity. The YASB uses a 5-point Likert scale with response choices ranging from one ("Never") to five ("Always").

The YASB uses the following definitions of social and relational aggression. Social aggression was defined as "gossiping, social exclusion, isolation, or alienation, writing notes or talking about someone, and stealing friends or romantic partners" (Crothers et al., 2008). Relational aggression was defined as "the use of confrontational strategies to achieve interpersonal damage, including not talking to or hanging around with someone, deliberately ignoring someone, threatening to withdraw emotional support or friendship, and excluding someone from a group by informing them he or she is not welcome" (Crothers et al., 2008). Interpersonal maturity was defined as "healthy social skills," and included items that dealt with issues such as willingness to work through conflict, honesty in dealing with interpersonal conflict, and respecting others' opinions (Crothers et al., 2008; *Table 3*).

Table 3

YASB Subscale Items

Relational Aggression	**Social Aggression**
• When I am angry with someone, that person is often the last to know. I will talk to others first.	• When I do not like someone's personality, I derive a certain degree of pleasure when a friend listens to and agrees to my assessment of the person's personality.
• When I am frustrated with my partner/colleague/friend, I give that person the silent treatment.	• I contribute to the rumor mill at school/work or with my friends and family.
• I criticize people who are close to me.	• I break a friend's confidentiality to have a good story to tell.
• I intentionally exclude friends from activities	• I confront people in public to achieve

to make a point with them.

- When I am angry with a friend, I have threatened to sever the relationship in hopes that the person will comply with my wishes.

maximum damage.

- I have attempted to steal a rival's friend.

Crothers et al., (2008)

YASB reliability and validity. In an examination of the structure and utility of the YASB using confirmatory factor analysis, Crothers et al. (2008) found that the YASB items have good, although not excessively high, standard loadings on the hypothesized latent constructs of relational aggression, social aggression, and interpersonal maturity. Specifically, Crothers et al. (2008) concluded that the validity findings from this study supported the utility of the YASB as a measure of relational aggression for older adolescents and young adults.

Scoring. Raw scale scores were derived by summing the response values for all items comprising the scale. Higher scores reflect greater relational and social aggression.

Reactive/Proactive Aggression Questionnaire

The Reactive/Proactive Aggression Questionnaire (RPQ) was used as a measure of overt aggression. Specifically, this questionnaire was used to assess participants' proactive and reactive aggressive behaviors. This 23 item scale included items referring to both verbal and physical forms of reactive and proactive aggressive behaviors. Participants were asked to rate each item in terms of its frequency of occurrence using a 3-point scale (0 = *never*, 1= *sometimes,* 2 = *often*). The scale contains 12 items indexing proactive aggression (e.g., "Used force to get money or things from others") and 11 items measuring reactive aggression (e.g., "Hit others to defend yourself"). The items of the RPQ reflect either physical or verbal aggression and include the motivation and situational context for the aggression.

RPQ reliability and validity. Evidence supporting the construct validity and reliability of the scales has been reported (Raine, Dodge, Loeber, Gatzke-Kopp, Lynam, Reynolds, ... & Liu, 2006). Internal consistencies range from .84 to .90 (Reactive Aggression) and .85 to .91 (Proactive Aggression; Raine et al., 2006). Raine et al. (2006) also reported mean item-total correlations between 0.45 and 0.58 for the reactive scale, and between 0.41 and 0.57 for the proactive scale. Additional studies have found that the RPQ demonstrates adequate construct validity and convergent and discriminant validity in cross-cultural samples (Fossati, Raine, Borroni, Bizzozero, Volpi, Santalucia, & Maffeiet, 2009; Seah & Ang, 2008).

Scoring. The RPQ scores (0, 1 or 2) for proactive aggression items (2, 4, 6, 9, 10, 12, 15, 17, 18, 20, 21, 23) and reactive items (1, 3, 5, 7, 8, 11, 13, 14, 16, 19, 22) were summated to form proactive and reactive scales. Proactive and reactive scale scores were summated to obtain total aggression scores. Total raw scores were derived by summing the response values for all items. Higher score reflect greater overt aggression.

Research Design

Variables

The following variables were used in the present study; overt aggression, relational aggression, social aggression, gender, trauma history, and trauma symptom severity. Overt aggression was defined as the use of physical and or verbal aggression and was measured using the Reactive Proactive Aggression Questionnaire. Relational aggression was defined as "the use of confrontational strategies to achieve interpersonal damage, including not talking to or hanging around with someone, deliberately ignoring someone, threatening to withdraw emotional support or friendship, and excluding someone from a group by informing them he or she is not welcome" (Crothers et al., 2009). Social aggression was defined as "gossiping, social exclusion, isolation,

or alienation, writing notes or talking about someone, and stealing friends or romantic partners" (Crothers et al., 2009). Relational and social aggression were measured using the Young Adult Social Behavior Scale.

Trauma history was defined as the severity of five types of abuse and neglect; emotional abuse, emotional neglect, physical abuse, physical neglect, and sexual abuse. Trauma history was measured using the Childhood Trauma Questionnaire. Trauma symptom severity was defined as the severity of five types of symptoms associated with traumatic experiences; anxiety, depression, anger, posttraumatic stress, dissociation, and sexual concerns. Trauma Symptom Severity was measured using the Trauma Symptom Checklist for Children.

Research Question 1 Variables

Aggression and trauma history serve as the variables for research question one. Specifically, research question one investigates the relationship between overt aggression and trauma history; relational aggression and trauma history; and social aggression and trauma history. All variables were measured on continuous scales.

Research Question 2 Variables

Aggression and trauma symptom severity serve as the variables for research question two. Specifically, research question two investigates the relationship between overt aggression and trauma symptom severity; relational aggression and trauma symptom severity; and social aggression and trauma symptom severity. All variables were measured on continuous scales.

Research Question 3 Variables

Independent Variable. Gender serviced as the single independent variable for research question three. This categorical variable was used in order to determine gender differences in dependent measures.

Dependent Variables. For research question three, aggression served as the dependent variable. Specifically, three types of aggression were measured on continuous scales. Relational and social aggression were measured using the Young Adult Social Behavior Scale. Overt aggression was measured using the Reactive Proactive Aggression Questionnaire.

Research Question 4 Variables

Independent Variable. Gender serviced as single the independent variable for research questions four. This categorical variable was used in order to determine gender differences in dependent measures.

Dependent Variable. For research question four**,** total trauma history served as the dependent variable. Total trauma history was measured on a continuous scale using the Childhood Trauma Questionnaire.

Research Question 5 Variables

Independent Variable. Gender serviced as single the independent variable for research questions four. This categorical variable was used in order to determine gender differences in dependent measures.

Dependent Variables. For research question five, total trauma symptom severity served as the dependent variable. Total trauma symptom severity was measured on a continuous scale using the Trauma Symptom Checklist for Children.

Research Questions 6, 7, and 8 Variables

Independent Variables. There are three independent variables for research questions six, seven, and eight; gender, trauma history, and trauma symptom severity. Gender was a categorical variable in which participants identified as either male or female. Trauma history was measured using the Childhood Trauma Questionnaire. Questions regarding physical abuse,

physical neglect, emotional abuse, emotional neglect, and sexual abuse were asked. Participants were then categorized into two groups; "high trauma" and "low trauma." Trauma symptom severity was measured using the Trauma Symptom Checklist for Children. Participants responded to questions regarding symptoms of anxiety, depression, anger, posttraumatic stress, dissociation, and sexual concerns. Participants were categorized into three groups representing "low" "moderate," and "high" trauma symptom severity.

Dependent Variables. For research questions six, seven, and eight, aggression served as the dependent variable. Specifically, three types of aggression were measured on continuous scales. For research question six, overt aggression was measured on a continuous scale using the Reactive Proactive Aggression Questionnaire. For research question seven, relational aggression was measured on a continuous scale using the Young Adult Social Behavior Scale. For research question eight, social aggression was measured on a continuous scale using the Young Adult Social Behavior Scale.

Procedures

Approval for the study was obtained from the Institutional Review Board (IRB) of Duquesne University. As part of the standard educational practice of the school, the school counseling team met with individual students in order to establish an Individualized Service Plan (ISP). Students who displayed a history of aggressive behaviors were referred to participate in the study. No exclusionary criteria were applied; all participants referred for aggression who completed the necessary consent forms were included in the study.

For referred students under age 18, parents were contacted over the phone and informed about the study and the potential for their child's enrollment in the study, using a standardized phone script. Once parents or guardians agreed to their child participating in the study, the

student investigator sent home two hard copies of the parental permission form with instruction for the parent or guardian to sign one form and return it to school. The second copy was for the parent or guardian's records. If written permission is not returned from the parent, a follow-up phone call was used to obtain verbal permission. Participants who were 18 years of age were provided with an informed consent form, those under 18 were provided an assent form. All participants were made aware that participation was voluntary and that he or she could withdraw from the study at any time.

Parents were guaranteed confidentiality, as their children's responses and participation would not include any personal identifying information. The limits of confidentiality were clarified with each parent or guardian and participant at the outset of data collection in the permission/assent form. The information gathered from the instruments in this study did not ask about current offenses nor did questions asked place the child or youth at-risk for any disciplinary procedures in the treatment program or by the police. In the permission and assent forms, parents and participants were notified that if the participants' answers on any of the measures raise concerns about the youth's safety, the student investigator collecting data would immediately notify the student investigator's primary supervisor as well as the student's school psychologist and/or school counselor.

Data Collection

Once consent and assent forms were obtained, participants completed one data collection. Participants completed all measures independently. Instruments were administered by the principle investigator according to standardized protocols. Participants completed all measures independently. Data collection took approximately 25-45 minutes, depending on the individual completing the form. Data were collected and stored in a locked facility. When entered

electronically, data were de-identified with a legend that was locked in a separate, secure location.

Scoring

Reverse Coding. In the scoring process, negatively-worded items (i.e., wording that represents the opposite of the construct being measured) were reversed-scored for all scales. Items on the YASB were reverse scored so that high scores equated to high levels of the construct being measured (social aggression and relational aggression). Additionally, items on the CTQ were reverse scored so that high scores equated to high levels of the construct being measured (trauma). Table 2 lists all reverse coded items.

Table 4

Reverse coded items

CTQ Items[a]	YASB Items[b]
2	3
5	6
7	10
10	14
13	
16	
19	
22	
26	
28	

[a] Bernstein & Fink (1998)

[b] Crothers et al. (2008)

Forming Categorical Variables. Participants were categorized into trauma history and trauma symptom severity groups in order to investigate group differences in aggression. The analyses were conducted using dichotomized total CTQ scores. Subjects were divided into two groups dichotomized at the median of the total CTQ score (median = 13). A total CTQ score greater than or equal to 13 was designated as "high trauma" (n= 17) and a total CTQ score less than 13 was designated as "low trauma."

Briere (1996) specified the cutoff points to distinguish the presence of significant trauma. The cutoff points are eight or higher for physical abuse, physical neglect, and sexual abuse, 10 or higher for emotional abuse, and 15 or higher for emotional neglect. It is important to note that participants within the sample reported overall low rates of trauma. Specifically, only one participant reported a clinically significant level of emotional neglect and only one participant reported a clinically significant level of sexual abuse. No participants endorsed items consistent with clinically significant physical abuse, physical neglect, or emotional abuse. Due to overall low rates of trauma, these cutoff points were not used.

In order to group participants based on trauma symptom severity, participants were divided into three groups A total TSCC score less than or equal to 22 was designated as "low" (n= 11), a total TSCC score between 23 and 39 was designated as "moderate" (n= 12) and a total TSCC score greater than or equal to 40 was designated as "high" (n= 11).

Potential Limitations

Internal Validity

Internal validity refers to the extent to which the results of the study are attributable to the manipulated independent variable and cannot be explained by other factors. A community sample or control group of non-juvenile offenders would have been useful in determining

differences in traumatic experiences and aggression. The present study utilized a non-experimental design in order to investigate the relationship between variables and group differences in aggression. The design lacks internal validity, and therefore no inferences of causation have been made**.**

External Validity

External validity refers to the generalizability of the results of the extent to which the results may be replicated in other groups and settings (Beehr & O'Hara, 1987). The Hawthorne effect refers to the fact that participants may behave differently because they know they are participating in a study (Beehr & O'Hara, 1987). This may have occurred because participants knew that their responses and behaviors were monitored. Participants may have attempted to present themselves in a more positive light or provide socially acceptable answers. Participants may have also provided answers that exaggerate bad behaviors. In order to encourage participants to provide honest answers, the experimenter emphasized that all information was confidential. Treatment by setting interaction suggests that results may differ depending on the setting in which the study is conducted (Beehr & O'Hara, 1987). The results of the current study may only be generalized to adjudicated adolescents, or similar populations.

Sample

As previously mentioned, for participants under the age of 18, 54 permission forms were sent home, with only 15 permission forms returned, representing a return rate of 28 percent. It is unclear whether the parents/guardians received the permission forms, if the students failed to return the completed forms, or if parents/guardians chose to not allow their child to participate. No data was available regarding students who did not return permission forms, therefore the extent to which the sample was biased in this aspect was not assessed.

Self-report Data

An additional limitation of the study was that all data was obtained from self-report instruments, suggesting the possibility of recall bias, reporter bias, and social desirability bias; however, as previously discussed, the measures used within the study have demonstrated adequate reliability and validity. Additionally, an advantage of using self-report data is that is self-report data allows for greater understanding of individuals' perspectives. This perspective is especially important when investigating internalizing psychological symptoms as measured on the TSCC.

Data Analyses

Research questions one and two investigated the relationships between; 1) aggression and trauma history and 2) aggression and trauma symptom severity. Pearson's correlations were used to investigate these relationships. Research questions three, four, and five investigated differences in aggression based on; 1) gender, 2) trauma history, and 3) trauma symptom severity. Independent sample t-tests were used to determine whether the mean differences are statistically significant. Research questions six, seven, and eight investigated gender differences in aggression (overt aggression, relational aggression, social aggression) based on trauma history and trauma symptom severity.

Post-hoc power analysis for a 2 x 2 x 3 ANOVA was conducted in G*Power (Faul, Erdfelder, Lang, & Buchner, 2007) in order to determine the power using an alpha of 0.05, and a medium effect size. Power analysis yielded a power of 0.59. The three-way ANOVA was used to determine if there is an interaction effect between three independent categorical variables (gender, trauma history, trauma related symptoms) on a continuous dependent variable (relational aggression, social aggression, overt aggression).

Research Questions and Hypotheses

This study focused on the effects of gender, trauma history, and trauma symptom severity on aggression. Specifically, this study investigated relational, social, and overt aggression in a sample of juvenile offenders. The following questions will be investigated:

Research Question 1

Is there a relationship between measures of aggression and trauma history among adolescent offenders?

Hypothesis 1. It was hypothesized that overt, relational, and social aggression will each be positively correlated with trauma history.

Statistical Analysis. Pearson's correlations were used to assess the strength of a linear relationship between trauma history severity and aggression. Given that all variables for research question one are continuous and the hypotheses aim to determine the relationships among variables, Pearson's correlation is the most appropriate statistic.

Research Question 2

Is there a relationship between measures of aggression and trauma symptom severity among adolescent offenders?

Hypothesis 2. It was hypothesized that overt, relational, and social aggression will each be positively correlated with trauma symptom severity.

Statistical Analysis. Pearson's correlations were used to assess the strength of a linear relationship between trauma symptom severity and aggression. Given that all variables for research question two are continuous and the hypotheses aim to determine the relationships among variables, Pearson's correlation is the most appropriate statistic.

Research Question 3

Are there gender differences in measures of aggression among adolescent offenders?

Hypothesis 3. It was hypothesized that females will use higher rates of relational and social aggression than males. It was also hypothesized that males will use higher rates of overt aggression.

Statistical Analysis. The independent-samples t-test was conducted in order to assess if differences between the means of two independent groups on a continuous dependent variable. Three independent-samples t-tests were used to determine whether the mean differences of aggression for males and females are statistically significant. Specifically t-tests were run in order to determine whether there was a gender difference in overt aggression, relational aggression, and/or social aggression. This statistical test was chosen because the research question involves one dependent variable measured on a continuous scale (aggression) and one categorical independent variable consisting of two independent groups (gender). The *t*-test will be two-tailed with the probability of rejecting the null hypothesis when it is true set at $p < .05$.

Research Question 4:

Are there gender differences in measures of trauma history among adolescent offenders?

Hypothesis 4. It was hypothesized that females would endorse higher rates of sexual abuse compared to males and that male would endorse higher rates of physical abuse.

Statistical Analysis. The independent-samples t-test was used to determine if a difference exists between the means of two independent groups on a continuous dependent variable. Specifically, the independent samples t-test was used to determine whether the mean differences of trauma history for males and females were statistically significant. This statistical test was chosen because the research question involves one dependent variable measured on a

continuous scale (trauma history) and one categorical independent variable consisting of two independent groups (gender). The *t*-test will be two-tailed with the probability of rejecting the null hypothesis when it is true set at $p < .05$.

Research Question 5:

Are there gender differences in measures of trauma symptom severity among adolescent offenders?

Hypothesis 5. It was hypothesized that males would demonstrate higher rates of anger symptoms compared to females and that females would demonstrate higher rates of all other symptoms.

Statistical Analysis. The independent-samples t-test was used to determine if a difference exists between the means of two independent groups on a continuous dependent variable. Specifically, the independent samples t-test was used to determine whether the mean differences of trauma symptom severity for males and females were statistically significant. This statistical test was chosen because the research question involves one dependent variable measured on a continuous scale (trauma symptom severity) and one categorical independent variable consisting of two independent groups (gender). The *t*-test will be two-tailed with the probability of rejecting the null hypothesis when it was true set at $p < .05$.

Research Question 6:

Are there gender differences in measures of overt aggression based on trauma history and trauma related symptom severity?

Hypothesis 6. It was hypothesized males with high trauma history and high trauma symptom severity would report the highest rates of overt aggression.

Statistical Analysis. The three-way ANOVA was used to determine if there is an interaction effect between three independent variables (gender, trauma history, trauma related symptoms) on a continuous dependent variable (overt aggression). A factorial ANOVA was chosen in order to examine differences on a continuous dependant variable between three independent discrete grouping variables. The probability of rejecting the null hypothesis when it is true was set at $p < 0.05$.

Research Question 7:

Are there gender differences in measures of relational aggression based on trauma history and trauma related symptom severity?

Hypothesis 7. It was hypothesized that females with high trauma history and high trauma symptom severity would report the highest rates of relational aggression.

Statistical Analysis. The three-way Analysis of Variance (ANOVA) was used to determine if there is an interaction effect between three independent variables (gender, trauma history, trauma related symptoms) on a continuous dependent variable (relational aggression). A factorial ANOVA was chosen in order to examine differences on a continuous dependant variable between three independent discrete grouping variables. The probability of rejecting the null hypothesis when it is true was set at $p < 0.05$.

Research Question 8:

Are there gender differences in measures of social aggression based on trauma history and trauma related symptom severity?

Hypothesis 8. It was hypothesized that females with high trauma history and high trauma symptom severity would report the highest rates of social aggression.

Statistical Analysis. The three-way ANOVA was used to determine if there is an interaction effect between three independent variables (gender, trauma history, trauma related symptoms) on a continuous dependent variable (social aggression). A factorial ANOVA was chosen in order to examine differences on a continuous dependant variable between three independent discrete grouping variables. The probability of rejecting the null hypothesis when it is true was set at $p < 0.05$.

Chapter IV

RESULTS

Demographic data and descriptive statistics are presented for the participants and variables in the study in the form of aggregated means, medians, and standard deviations. Correlational results of variables are also reviewed. Next, results of independent t-tests are presented. Lastly, ANOVA results investigating the group differences in relational, social, and overt aggression are presented.

Demographics

SPSS 22.0 was used for statistical analysis. Of the 34 participants, 13 participants identified as female (38.2 percent) and 21 participants identified as male (61.8 percent). Twenty seven participants identified at African American/Black (79.41 percent), one participant identified as Caucasian (2.94 percent), four participants identified as bi-racial (11.76 percent), and one participant identified as other (5.88 percent). It is important to note that the following results represent a nearly homogenous sample based on participants' racial identification. Participants ranged from ages 14 to 18, with the majority of participants age 18 (55.88 percent).

Table 5

Frequency Distribution: Demographics, Entire Sample

	N	**Percent**
Male	21	61.80
Female	13	38.20
African American	27	79.41
Caucasian	1	2.94
Bi-racial	4	11.76

Other	2	5.88
Age 14	3	8.80
Age 15	2	5.90
Age 16	3	8.80
Age 17	7	20.60
Age 18	19	55.88

Statistical Assumptions

There were no univariate outliers in the data, as assessed by inspection of a boxplot, and no multivariate outliers, as assessed by Mahalanobis distance ($p > .001$). There was homogeneity of covariance matrices, as assessed by Box's M test ($p > .001$) and homogeneity of variance, for overt aggression, relational aggression, and social aggression for all group combinations of gender, trauma history, and trauma symptom severity, as assessed by Levene's test for equality of variances, $p > .05$. There was no evidence of multicollinearity among dependent variables, as assessed by Pearson correlation ($r < 0.9$); however, contrary to hypothesis, dependent variables were weakly correlated, suggesting that the dependent variables (overt aggression, social aggression, and relational aggression) should be analyzed separately. Lastly, tests of normality suggested that the data were not normally distributed; however; research suggests that Pearson's correlation, independent t-tests, and ANOVAs are fairly robust to deviations from normality (Bray & Maxwell, 1985).

Research Questions 1 and 2: Pearson's Correlations

In order to identify associations between variables (trauma history, trauma related symptoms, relational aggression, social aggression, overt aggression) a series of preliminary analyses were conducted (Table 6). Results indicated moderate positive correlations between

overt aggression and trauma history, r = .575 and overt aggression and trauma symptom severity, r = .559; however, no significant correlations were found for relational or social aggression and trauma history, trauma symptom severity.

Further analyses revealed significant correlations specific types of trauma and overt aggression as well as between specific types of trauma symptoms and overt aggression. Results indicated a moderate positive correlation between emotional abuse and overt aggression, r = .553, emotional neglect and overt aggression, r = .484, and sexual abuse and overt aggression, r = .357. Results also indicated moderate positive correlations with overt aggression for PTSD symptoms, r = .538; anxiety symptoms, r = .354; anger symptoms, r = .669; and dissociation symptoms, r = .478.

Table 6

Pearson Correlations for Trauma History, Trauma Symptom, and Outcome Variables

	Social Aggression	Relational Aggression	Overt Aggression
CTQ Total	-.040	.144	.575**
Physical Abuse	-.083	-.142	.169
Physical Neglect	-.153	.149	.318
Emotional Abuse	-.068	.090	.553**
Emotional Neglect	.223	.197	.484**
Sexual Abuse	-.201	.007	.357*
TSCC Total	-.260	-.016	.559**
PTSD Symptoms	-.150	.036	.538**
ANX Symptoms	-.259	.005	.354*

DEP Symptoms	-.142	.047	.273
ANG Symptoms	-.312	-.037	.669**
SC Symptoms	-.190	-.115	.330
DIS Symptoms	-.198	.026	.478**

Note: * = statistically significant at $p < .05$, ** = statistically significant at $p < .01$

Additional correlational analyses were conducted in order to determine the relationship between types of trauma history and trauma symptom severity. Results revealed a moderate positive correlation between physical abuse and dissociation symptoms, $r = .394$. Physical neglect was moderately correlated with depression symptoms, $r = .481$; dissociation symptoms, $r = .487$; and total trauma symptom score, $r = .370$. Emotional neglect was moderately correlated with PTSD symptoms, $r = .396$; depression symptoms, $r = .493$; anger symptoms, $r = .404$; dissociation symptoms, $r = .584$; and total trauma symptom score, $r = .476$. Sexual abuse was moderately correlated with anger symptoms, $r = .461$ and sexual concern symptoms, $r = .584$. Emotional abuse was not significantly correlated with any of the trauma symptom subtypes. Lastly, total trauma history scores were significantly correlated with depression symptoms, $r = .459$; anger symptoms, $r = .479$; dissociation symptoms, $r = .561$; and total trauma symptom score, $r = .495$ (Table 7).

Table 7

Pearson Correlations for Trauma History and Trauma Symptom

	PTS	ANX	DEP	ANG	SC	DIS	TSCC Total
Physical Abuse	.205	.119	.177	.149	.083	.394*	.241
Physical Neglect	.179	.183	.481**	.307	.127	.487**	.370*

Emotional Abuse	.245	.124	.217	.265	-.002	.330	.253
Emotional Neglect	.396*	.286	.493**	.404*	.140	.584**	.476**
Sexual Abuse	.139	.312	.142	.461**	.344*	.109	.312
CTQ Total	.330	.308	.459**	.479**	.226	.561**	.495**

Note: * = statistically significant at $p < .05$, ** = statistically significant at $p < .01$

Research Questions 3, 4, and 5: Independent Samples T-Tests

Additional analyses were conducted in order to investigate gender differences in aggression, trauma history, and trauma related symptoms. Means and standard deviations for total trauma history, trauma history subtypes, total trauma related symptoms, and trauma related symptom subtypes for both genders are listed in Table 8.

Independent-samples t-tests were run to determine if there were differences in aggression, trauma history, and trauma symptoms between males and females. Results indicated no significant gender differences in overt, relational, or social aggression. Results also indicated no significant difference in mean trauma history scores for males and females. Further investigation of the specific types of trauma revealed a statistically significant difference in mean physical abuse scores for males and females, t (32) = 3.42, $p < .05$, $\eta^2 = .268$. Specifically, males reported greater history of physical abuse ($M = 2.33$) compared to females ($M = 0.23$). Additionally, although not statistically significant, females ($M = 1.92$) in the sample appeared to report more sexual abuse than males ($M = 0.10$), t (32) = -1.95, $p = .059$. Across all other types of abuse males reported higher levels, although these differences were not statistically significant. Additionally, there were no statistically significant differences in mean overall trauma symptom severity or trauma symptom subgroups for males and females.

Table 8

Means and Standard Deviations for Males and Females

	Males		Females	
	M	SD	M	SD
Social Aggression	8.95	3.23	10. 62	2.84
Relational Aggression	8.67	2.08	8.46	2.25
Overt Aggression	14.85	6.19	17.08	6.22
CTQ Total	17.81	12.15	12.92	11.60
Physical Abuse	2.33	2.15	0.23	0.60
Physical Neglect	2.05	2.11	0.92	1.32
Emotional Abuse	2.86	2.67	1.84	2.51
Emotional Neglect	5.48	4.35	3.46	3.43
Sexual Abuse	0.10	0.30	1.92	4.31
TSCC Total	34.38	22.70	38.23	25.74
PTSD Symptoms	6.19	4.19	6.92	6.22
Anxiety Symptoms	3.76	3.42	4.77	4.83
Depression Symptoms	4.38	5.07	6.38	3.97
Anger Symptoms	7.71	5.36	9.46	9.46
Sexual Concern Symptoms	5.71	4.71	5.31	4.39
Dissociation Symptoms	7.86	6.25	6.54	5.32

Research Question 6, 7, and 8: ANOVAs

As a result of previously discussed weak correlations among dependent variables in the present sample, three separate 2 x 2 x 3 ANOVAs were run for each of the dependent variables. The three-way ANOVA was used to determine if there was an interaction effect between three independent variables (gender, trauma history, trauma symptom severity) on a continuous dependent variable (relational aggression, social aggression, overt aggression). The means and standard deviations for social, relational, and overt aggression as a function of the three factors are presented in Table 9.

Three-way interactions for relational, F (2, 22) = .12, p > .05, social aggression, F (2, 22) = .15, p > .05, and overt aggression, F (2, 22) = 2.21, p = > .05 were not statistically significant. Results indicate a significant main effect of trauma history on overt aggression, F (2, 22) = 4.60, p = .043, η^2 = .173. Specifically, higher rates of overt aggression were reported for participants with greater trauma history.

Table 9

Means and standard deviations for social, relational, and overt aggression

Gender	Trauma History	Trauma Symptom Severity	Overt Aggression		Relational Aggression		Social Aggression	
			M	SD	M	SD	M	SD
Male	Low	Low	11.20	2.42	7.60	1.42	9.80	.97
		Moderate	10.66	3.12	7.66	1.84	7.00	1.26
		High	15.00	5.41	5.00	3.18	9.00	2.18
	High	Low	11.50	3.83	10.00	2.25	9.00	1.54
		Moderate	18.00	2.42	10.80	1.42	9.60	.97

		High	19.20	2.42	9.60	1.42	7.40	.97
Female	Low	Low	7.00	3.83	13.00	2.25	9.00	1.54
		Moderate	15.33	3.12	10.33	1.84	8.00	1.26
		High	21.00	3.83	8.50	2.25	8.50	1.54
	High	Low	21.00	3.83	12.00	2.25	7.50	1.54
		Moderate	18.00	5.41	8.00	3.18	12.00	2.18
		High	20.00	3.12	10.66	1.84	8.00	1.26

Summary

The results of the analyses conducted in the study yielded several important findings. First, results indicated positive correlations for overt aggression and trauma history as well as for overt aggression and trauma symptoms severity; however, no significant correlations were found when investigating the relationships between relational and social aggression and trauma history and trauma symptom severity. Additionally, results indicated relatively few gender differences in aggression, trauma history, and trauma symptom severity. No significant differences in types of aggression or trauma symptom severity were reported. While males and females did not differ in overall reported trauma history, males reported significantly more physical abuse than females.

Lastly, three-way interactions investigating the effects of gender, trauma history, and trauma symptom severity for relational, social, and overt aggression were not statistically significant. Consistent with correlational results suggesting a positive correlation between overt aggression and trauma history, results also indicated a significant main effect of trauma history

on overt aggression, with higher rates of overt aggression for participants with greater trauma history.

CHAPTER V

DISCUSSION

Summary

Research questions one and two investigated whether there was a relationship between: 1) aggression and trauma history and 2) aggression and trauma symptom severity. Contrary to hypotheses, results indicated a positive relationship between trauma history and overt aggression; however, no relationship was found for trauma history and relational or social aggression. Similarly, a positive relationship was found between overall trauma symptom severity and overt aggression, but not for overall trauma symptom severity and relational or social aggression. These results are consistent with previous literature suggesting a relationship between trauma and aggression (Dierkhising et al., 2013; Kerig et al., 2009; Smith & Thornberry, 1995) as well as a link between mental health problems associated with trauma and aggression (Ford et al., 2006; Hoeve et al., 2015); however, in the current sample, this link does not appear to extend to indirect forms of aggression.

Although little research has investigated the relationships between specific types of trauma and aggression, some research has indicated that that youth who experienced physical abuse were more likely to exhibit delinquent behaviors compared to youth who experienced neglect (Grogan-Kaylor et al., 2008; Villodas et al., 2012). Contrary to previous research, results of the present study suggested positive relationships between emotional abuse and overt aggression, emotional neglect and overt aggression, and sexual abuse and overt aggression. No such relationships were found for physical abuse and physical neglect. Additionally, overt aggression was found to be positively related to PTSD symptoms, anxiety symptoms, anger

symptoms, and dissociation symptoms; however, no relationships were found between overt aggression and depression symptoms or sexual concerns.

Research questions three, four, and five investigated gender differences in aggression, trauma history, and trauma symptom severity. No gender differences were found in overt, relational, or social aggression. Additionally, no gender differences were found in overall trauma history. Upon further investigation of subtypes of trauma, results showed that males experienced higher rates of physical abuse compared to females. Additionally, although not statistically significant, females reported higher rates of sexual abuse consistent with previous literature (Cauffman et al., 1998). Contrary to hypotheses, no gender differences were found in overall trauma symptom severity or in trauma symptom severity subtype. It was expected that males would report higher rates of anger and that females would report higher rates of all other trauma symptoms (Abram et al., 2004; Dierkhising et al., 2013) however, based on the current sample, males and females appeared to be experiencing trauma symptoms at similar rates.

Research questions six, seven, and eight investigated the impact of gender, trauma history, and trauma symptom severity on overt aggression, relational aggression, and social aggression. It was hypothesized that males with high rates of trauma history and high rates of trauma symptom severity would display the highest rates of overt aggression; whereas females with high rates of trauma history and trauma symptom severity would display the highest rates of relational and social aggression. The interaction for gender, trauma history, and trauma symptom severity was non-significant for all types of aggression; however results again suggested that across genders and trauma symptoms, participants with greater trauma history endorsed greater rates of overt aggression.

Conclusions

History of Trauma

The results of the present study are consistent with previous research suggesting a link between traumatic experiences and use of physical aggression (Dierkhising et al., 2013; Kerig et al., 2009; Smith & Thornberry, 1995); however, the present study found no relationship between relational aggression or social aggression and trauma history (physical abuse/neglect; emotional abuse/neglect; sexual abuse). Similarly, in one of the few studies investigating the relationship between trauma and indirect aggression, Bauer and colleagues (2006) found that traumatic experiences, specifically exposure to intimate partner violence, was not related to increased relational aggression but was associated with increased physical aggression (Bauer, Herrenkohl, Lozano, Rivara, Hill, & Hawkins, 2006).

Overall, it is important to note that within the present sample, both males and females appeared to reported overall low rates of abuse and neglect using the cut-off scores recommended by Bernstein and Fink (1998). Specifically, using these cut-off scores only one participant reported "clinically significant" abuse/neglect; therefore, the present study categorized participants based on high and low levels of trauma. According to Dixon, Howie, and Starling (2004), over 70 percent of incarcerated female adolescents have a history of trauma. Selph, Ast, and Dolan (2014) estimated that 92 percent of incarcerated female adolescents have experienced emotional, physical or sexual abuse. In the present sample 100 percent of the female participants endorsed experiencing some type of abuse and/or neglect.

Trauma Symptoms

Although research demonstrates similarities among male and female juvenile offenders (e.g., similar risk factors), researchers have also suggested significant gender differences among juvenile offenders including high rates of traumatic symptoms (e.g., PTSD, depression, anxiety) among female offenders compared to male offenders (Cauffman et al., 1998; Kerig et al., 2009). Contrary to this research, males and females in the present study reported similar levels of PTSD symptoms, anxiety symptoms, depression symptoms, anger symptoms, sexual concern symptoms, and dissociation symptoms.

Aggression

Previous research regarding whether females with conduct problems utilize more relational aggression compared to normative samples (e.g., Mikami et al., 2008; Moretti et al., 2001), or similar rates of relational aggression compared to typically developing females (e.g., Comstock et al., 2013) is somewhat unclear. Additionally, research suggests gender differences in indirect aggression that vary across age groups (Björkqvist et al., 1992; Osterman, & Lagerspetz, 1994). Consistent with the theory that as individuals age (a majority of participants were age 18), males and females may utilize relational aggression at similar rates (Loudin, Loukas, & Robinson, 2003; Richardson & Green, 1999), results of the present study suggested no gender differences in rates of relational and social aggression. Regarding overt aggression, research consistently finds that males across all ages appear to engage in more physically aggressive behaviors than females (Archer & Coyne, 2005). Surprisingly, males and females in the present sample reported similar levels of overt aggression.

It is worthy to note that within the present sample, the majority of participants (79 percent) identified as African-American. According to Crothers, Field, and Kolbert (2005) the

socialization process for African American female adolescents may impact their use of varying forms of aggression. Specifically, African American females are often socialized in a way that prepares them to deal with prejudice and discrimination through learning to avoid internalizing negative messages. Crothers, Field, and Kolbert (2005) suggested that as a result, African American females may be less likely to engage in relational aggression and more likely to be direct and overt when dealing with conflict compared to White females. Results investigating the relationship between gender role identity and relational aggression indicated that non-white female adolescents displayed significantly lower rates of relational aggression and were more likely to identify with traditionally masculine traits (e.g., direct confrontation; Crothers, Field, & Kolbert, 2005). Although the present study did not investigate gender role identity, similar aggression scores for males and females within the sample as well as overall higher rates of overt aggression compared to relational and social aggression, suggest that females within the sample may engage in aggressive behaviors that are traditionally considered masculine in nature.

Aggression and Trauma

Consistent with previous research, results of the present study suggest an association between trauma exposure and overtly aggressive behaviors. Research across genders and ethnicities has concluded that more severe forms of trauma, such as chronic or frequent traumas, are related to more violent and frequent delinquent behaviors (Smith & Thornberry, 1995; Maxfield & Widom, 1996). Similarly, the present study found that for both males and females, higher rates of trauma history were associated with higher rates of overt aggression.

Limitations

Internal and External Validity

The present study utilized a non-experimental design in order to investigate the relationship between trauma history, trauma symptom, and aggression as well as group differences in aggression. The design lacks internal validity, and therefore no inferences of causation have been made.

An additional limitation of the study is the extent to which the results can be generalized to other populations. Generalization of this study is impacted by the homogeneity of this highly specific sample of juvenile offenders, as all participants were juvenile offenders from a specific geographic location, enrolled in the same school for adjudicated youth. The relatively small sample size also limits the generalizability of the results. It is likely that greater variation in aggression would occur given a larger sample size.

Self-Report Data

It is also important to consider limitations of the instruments utilized within the study. As previously discussed, all data was obtained from self-report instruments, suggesting the possibility of recall bias, reporter bias, and social desirability bias; however, all instruments utilized have demonstrated adequate reliability and validity.

Trauma History and Trauma Symptom Measurement

Although the proposed study attempted to examine the relationship between trauma and aggression in juvenile offenders, the present study was unable to assess all types of trauma and all symptomatology related to traumatic experiences. Specifically, the present research was limited to investigating the experiences of trauma in the form of abuse and neglect. The CTQ asked questions regarding histories of child abuse and neglect as traumatic events; however,

additional trauma events (e.g., witnessing domestic violence, neighborhood violence, car accident, natural disaster, etc.) were not included, limiting the understanding of traumatic experiences in the sample. Similarly, the TSCC included questions regarding a variety of symptoms related to traumatic experiences (e.g., anxiety, depression, anger, posttraumatic stress, dissociation, and sexual concerns); however, this is not an exhaustive list of all symptoms of trauma.

Future Research

As previously discussed, the present research was limited to investigating trauma in the form of abuse/neglect. Future research should focus on the relationship between exposure to violence (e.g., community violence, intimate partner violence) and indirect forms of aggression, as exposure to violence is frequently cited as a predictor of overt aggressive behavior (Copeland-Linder, Johnson, Haynie, Chung, & Cheng, 2012; Wiebe, Blackstone, Mollen, Culyba, & Fein, 2011). Furthermore, adolescents may be exposed to violence in a variety of settings; at home from parents, siblings, or other caregivers; at school from peers or adults; and in their neighborhoods/communities (Finkelhor, 2008).

Additionally, the present study did not compare adolescents who experienced one form of trauma to those who experienced multiple forms. Although research suggests that juvenile offenders are at a high risk for multiple traumas (Burton et al., 1994, Costello, et al., 2002), it may important to differentiate between those who experience multiple traumas in order to obtain a better understanding of the relationship between complex trauma and aggression in juvenile offenders. Similarly, future research should aim to differentiate between those who experience trauma early in development versus those who experience trauma later in life. Finkelhor, Ormrod, and Turner (2007) suggested that the timing of a traumatic experience is important in

understanding outcomes because youth who experience trauma early in life are more likely to experience other types of trauma later in life. Although the present study investigated overall trauma symptom severity, the present study was unable to differentiate between those who experienced multiple symptoms associated with trauma and those who experienced one symptom at a higher severity. Future research should again aim to focus on developing a greater understanding of the complexity of trauma symptoms and their relationship to aggressive behaviors.

Lastly, as previously discussed the current sample was primarily homogenous in terms of race and age with the majority of participants identifying as African American and age 18. The current results suggest that among African American older adolescents males and females demonstrate similar levels of relational and social aggression consistent with previous findings (Crothers, Field, & Kolbert, 2005; Loudin, Loukas, & Robinson, 2003; Richardson & Green, 1999), therefore future research should aim to investigate trauma and aggression among samples of juvenile offenders across ages and races.

Implications

Overall, the present study suggests that both male and female juvenile offenders experience significant co-occurring problems including mental health disorders/symptoms and histories of trauma. It is possible that these co-occurring problems may impact treatment effectiveness, therefore these problems should also be considered in the development of treatment programs for adolescent offenders. Specifically, the present study supports the view that it is important to screen for trauma exposure in juvenile offender populations.

Most interventions used for treating children and adolescents with aggressive and antisocial behaviors are cognitive-behavioral interventions aimed at improving self-control and

regulating aggressive, antisocial, and criminal behavior (Piquero, Farrington, Nagin, & Moffitt, 2010). Although it is necessary to address forms of aggression in juvenile offender populations, other issues, such as high rates of trauma experiences among juvenile offenders (Abram et al., 2004; Wood et al., 2002) may have an impact on the success of interventions designed for juvenile offenders. Effective trauma-focused treatments (e.g. TF-CBT) have been designed for use with adolescent populations; however, trauma focused treatments are used less often in juvenile offender populations due to a lack of resources in these settings and a greater emphasis on treatments for behavior management (Mahoney, Ford, Ko, Siegfried, 2004).

Results of the present study combined with the extensive research base on the high rates of trauma among juvenile offenders highlight the need for trauma-focused treatment in juvenile offender populations. Treatments should target children and adolescents exposed to trauma in order to reduce the likelihood of re-traumatization and the occurrence of trauma related symptoms (e.g., depression, anxiety, anger, etc). Additionally, as results of the present study suggest that males may experience more physical abuse whereas females may experience more sexual abuse, it is imperative that gender responsive interventions be implemented in juvenile justice settings.

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