

INFLUENCE OF CHILDHOOD MALTREATMENT SEVERITY ON AGGRESSIVE
BEHAVIOR OUTCOMES

by

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Childhood maltreatment contributes to a vast array of mental and behavioral health problems in youth. Children who are victims of childhood maltreatment are at an increased risk of engaging in aggressive behavior. This results in poor school relationships, suspensions, and increased risk of later juvenile offending. Aggressive behavior can be categorized by function: proactive and reactive. It is still unknown how the level of severity of childhood maltreatment influences later functions and overall levels of aggression in young adulthood. In the current study two groups were examined: non-offenders and offenders. The present study used multiple correlations for an exploratory analysis into the relationship between self-reported maltreatment severity and later self-reported functions of aggression. Additionally, multiple hierarchical regressions were used to examine the differences in the influence of severity on later aggressive outcomes between non-offenders and offenders. Forty-eight students from East Carolina University and 51 probationers in North Carolina participated in the study. Participants completed the Childhood Trauma Questionnaire (CTQ) to assess the level of severity experienced across emotional, physical, and sexual abuse. Second, they completed the Reactive Proactive Questionnaire (RPQ) to assess the level of current functions of aggression and overall aggression. Correlational analyses were run separately for each group, non-offenders and

offenders. In the non-offender population, emotional abuse severity was positively correlated with proactive aggression. In the offender population, emotional abuse severity was positively correlated with proactive aggression, reactive aggression, and overall total aggression. In the offender population, physical abuse was positively correlated with proactive aggression and reactive aggression, and the overall aggression reported. Sexual abuse severity was not significantly related to aggression in either subsample, although it was reported at a low rate of occurrence. Results of the first regression analysis with the young adult offender subsample revealed that childhood maltreatment severity was a significant predictor of later aggressive behavior above and beyond SES and sex. For the young adult non-offender subsample, maltreatment severity was not a predictor of aggressive behavior. The results suggest that severity has a unique impact on the level of aggression exhibited. Additionally, the results reflect that childhood maltreatment can have a substantial impact on individual's later aggressive behaviors.

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by

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CHAPTER I: INTRODUCTION

Childhood maltreatment is related to a spectrum of mental and behavioral health difficulties in youth (Lansford et al., 2002; English et al., 2005; Manly, Cicchetti, & Barnett, 1994; Kinard, 2004; Tiesl, 2007; Prino & Peyrot, 1994). These difficulties contribute to a rising societal cost reflected in mental and behavioral health services (Hoeve et al., 2015). However, these are not the only contributors to the rising costs maltreatment imposes. Youth who exhibit externalizing behavior problems are at a higher risk of becoming juvenile offenders, requiring incarceration and associated services (Lansford et al., 2002; Mersky & Reynolds, 2007). The maltreatment literature often draws attention to the relationship between childhood maltreatment and externalizing problems, more specifically aggressive behaviors (Berzenski & Yates, 2010; Brendgen, Vitaro, Tremblay, & Lavoie, 2001; Crawford & Wright, 2007; Shackman & Pollack, 2014; Slep, Heyman, & Snarr, 2011; Zurbriggen, Gobin, & Freyd, 2010).

Child maltreatment is associated with aggression even after statistically controlling for family, child, and biological characteristics (Hoeve et al., 2015). Understanding the developmental and behavioral effects of maltreatment is complicated due to the variability of individuals' experiences. The different ways that children process the experience, the resiliency children acquire to cope with their experience, and the forms of maltreatment experienced are all unique (English et al., 2005). Maltreatment experiences can vary in type, severity, chronicity, frequency, timing, and perpetrator, and although these features are intertwined, it is important to study each of the above mentioned factors related to maltreatment individually in order to further examine the relationship to later aggressive behaviors. Researchers have studied the combined influence of these characteristics; however, the severity of maltreatment and its relationship to later aggression has been neglected. Within the scarce literature on the severity of the

maltreatment experience, some significant relationships have been identified and linked to mental health outcomes (Jackson et al., 2014; English et al., 2005). For example, it was found that severity of abuse, when categorized by type, was predictive of later difficulty with socialization skills in youth. Yet, it is still unclear in the maltreatment literature whether the component of severity in maltreatment accounts for a significant proportion of the relationship between maltreatment experience and later aggressive behaviors in youth.

Researchers study aggressive acts through function categorized into proactive and reactive aggression (Hubbard, McAuliffe, Morrow, & Romano, 2010). In the same way that child maltreatment comes in different types and severities, aggressive behavior can be developed through different environmental antecedents (e.g., discipline style, family structure, maltreatment experience). The type of aggressive behavior possesses characteristics of different intentions, means, and motives. Two categories of aggression have been popularly studied: proactive and reactive aggression. Proactive aggression is motivated by the want and/or need for a tangible item or feeling, such as power and control (Brendgen et al., 2001). Reactive aggression is preceded by feelings of frustration or by a situation that is evaluated as threatening or aversive. Essentially, proactive aggression is used to acquire something desirable to the individual and reactive aggression is used in situations that make the individual feel angry or inferior.

Aggression is a behavior that most often stems from a lack of coping skills, social skills, and understanding others' emotions. Victims' perception of their abuse history can affect their coping, social, and emotional skills. Thus the relationship of those perceptions to later developed aggression should be further examined (Kempes, Matthys, de Vries, & Engeland, 2005; Young & Widom, 2013). Some researchers imply that there is utility in studying aggressive behavior in these two forms due to their distinct nature, while others believe that

children who exhibit aggression show both types, and the separation will not be useful to uncovering more about the relationship to childhood aggression (Kempes et al., 2005).

Models of maltreatment include multiple perspectives that highlight the importance of ecological and consequential variables (English et al., 2005; Cicchetti & Toth, 1995). For example, children who have experienced physical maltreatment may have learned to use aggression as a means of obtaining tangible items and attention (Thompson & Tabone, 2010; Teisl, 2007). These children are more likely to have difficulties with comprehending others and their own emotions accurately (Rogosch, Cicchetti, & Aber, 1995). This causes them to misinterpret social cues, handle conflict in negative ways, and use less prosocial behaviors with peers (Miller, Williams, & McCoy, 2004). Additionally, maltreatment has been shown to increase the risk of aggressive behaviors, juvenile delinquency, and psychopathology (Manly, Kim, Rogosch, & Cicchetti, 2001; Pechtel, Lyons-Ruth, Anderson, & Teicher, 2014). The developmental psychopathology model views childhood through developmental pathways that shape future outcomes as determined by ecological, family, and personal factors (English et al., 2005). Ecological factors refer to the interaction style among families (child-parent, parent-parent) and neighborhood context that a child is influenced by, while family factors refer to the family make-up (e. g., blended, divorced, single-parent home) and income. Personal factors that shape future outcomes for children include personality factors such as resiliency and mental health problems such as anxiety and depression. Throughout childhood children must overcome challenges across many developmental stages; if a child is faced with adversities such as maltreatment, their ability to conquer a stage successfully becomes more difficult (English et al., 2005, Manly et al., 1994).

In the maltreatment literature, a relationship has been continually identified between previous maltreatment and later externalizing behavior problems such as aggressive behaviors. The relationship between maltreatment and aggressive behaviors has been consistent, yet many gaps still exist. Research on the relationship between a victims perceived level of severity and current reporting of aggressive behaviors might provide an insight into the development and maintenance of aggressive behaviors in youth. Researchers have repeatedly studied the type of abuse and its various emotional, physical, and behavioral effects. However, developmental pathways giving insight to the individual-level course of each of these types of aggression is less well understood. Researchers have struggled in identifying agreed upon definitions and measures for severity, and thus halted research on these factors and the examination of the relationship between the different features of abuse. Despite the negative outcomes associated with maltreatment, evidence does not exist for specific maltreatment characteristics and their pathways to aggressive behaviors. To better understand the pathways that lead to aggression, maltreatment must be studied through the interpretation of the individual's experience. A thorough investigation into the contributing factors to aggressive outcomes cannot be done without including severity as a measure. The current study examines how an individual's perception of the maltreatment experience, self-reported severity level, is related to their current self-reported aggressive behaviors and their functions.

The purpose of the current study is to examine the influence of young adults' perceptions of the severity of maltreatment in childhood on aggressive outcomes in early adulthood. The research aims of the present study are: a) to investigate the relationship between severity level of each type of abuse and proactive and reactive aggression and b) to investigate the relationship between severity of maltreatment on total aggression level reported.

CHAPTER II: LITERATURE REVIEW

Maltreatment Characteristics and Aggression

Specific abuse histories can influence externalizing behavior in various ways, many of which remain unknown. Early childhood maltreatment has shown to negatively affect academic performance (Lansford et. al, 2002), peer relationships (English et al., 2005; Kinard 2004), mental health (Lansford et. al, 2002), and behavior problems (Manly et al., 1994; Kinard, 2004; Tiesl 2007; Prino & Peyrot, 1994). Different factors of maltreatment such as type, timing, chronicity, and severity may be useful in predicting the course and development of proactive and reactive aggressive outcomes in children, adolescents, and adults. Additionally, these different factors may shed light on the significance of their influence on the development of different aggressive outcomes.

Maltreatment has been widely recognized for being a risk factor for later offending in young adults (Gover, 2002; Lansford et al., 2007). Research has shown a strong relationship between a history of maltreatment and specific forms of violent behavior. For example, youth who were sexually abused were more likely to commit sexual offenses while youth who were physically abused were more likely to commit violent crimes (van der Put, Lanctot, Ruiter, & van Vugt, 2015). The term 'Cycle of Violence' is often used to describe the relationship between youth that were victimized and engage in delinquent behavior (Bender, 2009). The relationship between maltreatment and later aggressive behavior in juveniles has been consistent; however, the specific pathways that lead to offending among maltreated youth are unknown. Maltreatment is suspected to contribute to later aggressive behaviors through the process of modeling. Problem behavior is commonly attributed to modeling of poor relationships in the household. Appropriate relationships must occur for the child to be able to observe, learn, and gain positive

reinforcement for their social interactions. If no such positive relationship exists in the home environment, the child's ability to gain access to positive modeling and reinforcement may not exist (Prather & Golden, 2009). Additionally, this may create poor coping skills that have been shown to lead to poor peer choices and negative relationship to school. It has been shown that both harsh and neglectful parenting styles lead to aggressive and delinquent behaviors.

Inconsistent parenting may lead to detrimental effects when coupled with an authoritarian, harsh discipline, parenting style (Patterson & Stouthamer-Loeber, 1984). In addition to harsh, neglectful, and inconsistent parenting practices leading to delinquent behaviors, previous research has shown that delinquent peer groups and a poor relationship with school contribute to later offending behavior (Gover, 2002). Due to these variables, we can hypothesize that children who later go on to engage in offending behavior were impacted by their abusive home environments in such a way that they were either not able to effectively cope, create and maintain positive relationships, and/or develop positive relationships in school.

The bulk of research studies investigating the relationship between maltreatment and aggressive outcomes have focused on looking at the type of abuse (Manly et al., 1994; McGee & Wolfe, 1994; Jaffee, 2004). Most commonly, childhood maltreatment type is divided into four categories: neglect, physical abuse, sexual abuse, and emotional abuse. It is common that types of abuse co-occur for the duration of the maltreatment experience. For example, it has been found that emotional abuse and physical abuse are correlated at .78 for co-occurrence. Among the types, physical abuse and neglect have been the most frequently investigated and negative effects of these types of maltreatment have been identified (Jackson et al., 2014).

Neglect. Neglect is the most prevalent type of abuse, defined by failure to provide basic needs and lack of basic supervision (Cicchetti, Jonson-Reid, & Synder & Merritt, 2014). Neglect

can be further categorized dependent upon what is lacking (e.g., food, shelter; Jonson-Reid, Synder & Merritt, 2014). However, for the purpose of this study it will stand as one category. Risk factors associated with neglect include race, ethnicity, sex, and timing of experience (Manly et al., 2001). Poverty has been identified as the greatest risk factor associated with neglect. Neglect has been identified as a risk factor for increased behavior problems, increased aggression (McGee & Wolfe, 1994; Manly et al., 1994), and more specifically, proactive aggression (Brendgen et al., 2001). In comparison to non-neglected peers, girls who have experienced neglect show an increase in behavior problems (McGee & Wolfe, 1994). In comparison to children who experienced other types of abuse, neglect has also been shown to be associated with more social withdrawal and internalizing symptoms (Manly et al., 1994). Neglect and emotional abuse are commonly co-occurring; therefore, when neglect and emotional abuse were combined as one independent factor, an increase in behavior problems was observed. However, this can vary based on the child's sex, race, ethnicity, and the different features of abuse. Each of these factors can serve as risk or protective factors for a child who experiences neglect.

Limited research exists on the development of aggression in children who have experienced neglect. A study exploring proactive thinking style (i.e., justification, entitlement, over-confidence) in association with criminal behavior has been the only study to date attempting to create an association between neglect and later proactively influenced criminal behavior (Cuadra, Jaffe, Thomas, & DiLillo, 2014). In a study that explored abuse by type, frequency, and severity, neglect was easier to identify by welfare agencies when it occurred over a long period of time versus a single occurrence (Jackson et al., 2014). Unfortunately, this limits the data available on children who experienced neglect for a short duration and biases the sample to include only chronically neglected children. Additionally, the influence of type was calculated

as a whole, instead of exploring each type of abuse and the influence of characteristics in a single type. Advancement into exploring the specific link between severity of maltreatment and aggression could aid in the understanding of the long-term consequences of maltreatment.

Emotional Abuse. Emotional abuse is the most understudied type of abuse, is the least reported to social services, and as a result has the least amount of evidence related to negative outcomes (Slep et al., 2011). Emotional abuse is broadly defined as the neglect of a child's emotional and/or psychological needs leading to long-term psychological harm (Maguire et al., 2015). This encompasses an array of parenting behaviors, including unresponsiveness, hostility, being emotionally unavailable, isolation, and being excessively critical and controlling (Crawford & Wright, 2007). Emotional abuse can cause children to believe they are unworthy of love and attention through the constant reminders that they are not wanted and hold no value (Spinazzola et. al, 2014). One of the most common characteristics of emotional abuse is being insensitive to a child's developmental level. For example, a mother that neglects her child's needs may hold the belief that her eight-month old is crying to make her angry, instead of calling for her attention (e.g., a cry for food, comfort). This makes the experience emotionally traumatic and neglectful for the child. Additionally, the effect of this emotional maltreatment over time can be substantially harmful. In a study comparing childhood emotional trauma to later aggression in adolescence, it was revealed that different types of emotional abuse have differentiating effects on long-term outcomes of aggression. Results revealed that both physical and neglectful emotional maltreatment were related to social withdrawal, however only emotional abuse (not neglect) was related to increased aggression (Shaffer, Yates, & Egeland, 2009).

A study examining the relationship between childhood emotional abuse and intimate partner violence showed that emotional abuse was a significant predictor of perpetrating

aggression (Crawford & Wright, 2007). Internalizing symptoms, insecure/anxious attachment with caregiver, and an increase in aggressive behaviors in middle school were all identified as outcomes of emotional abuse. Additionally, a study examining the relationship between emotional, physical, and sexual abuse on adult rape, emotional abuse was found to be a significant predictor of rape victimization when other types of abuse were controlled for (Messan-Moore & Brown, 2004). Thus, research shows a relationship between emotional abuse leading to both later aggression and victimization by aggressive acts. Two studies found that emotional abuse was the strongest predictor, when compared to each type of abuse, in perpetration of intimate partner violence and victimization in relationship violence (Berzenski & Yates, 2010, Zurbriggen et al., 2010). No studies to date have examined the relationship between emotional abuse and different types of aggression. Additionally, this research would provide a better understanding of how emotional abuse has an influence on later aggressive behaviors. Further research would allow more isolation of the specific aggressive outcomes, reactive and proactive, that are related to emotional abuse.

Physical Abuse. Physical abuse is defined as harmful acts upon a child using the force of body or object (Ellenbough, Trocme, Wekerle, & McLeod, 2015). The most common of these acts include slapping, hitting, and spanking. Poverty stands as the biggest risk factor for childhood physical abuse followed by negative or coercive relationships with parents (Cullerton-Sen et al., 2008). Parents who are physically abusive are more likely to come from low-income backgrounds, have low social support, deal with high levels of stress, and frequently report experiencing loneliness. Parents and/or caregivers can often act as the abusers, victims, or bystanders of the abuse and the cycle of abuse often continues, sometimes through generations.

The children who suffer from physical abuse, as compared to other type of abuse victims, are at a higher risk of exhibiting negative behavioral outcomes.

Physical abuse has an abundance of research to capture its negative effects, especially externalizing behavior problems such as aggression (Manly et al., 1994; Lansford et. al, 2002; Cummings & Berkowits, 2013; Cullerton-Sen et al., 2008). Childhood physical abuse is a risk factor for the development of anger and aggression problems in youth (Ellenbough et al., 2015). In a study comparing the level of aggression exhibited across children with different types of abuse histories, higher levels of aggression were found in children who had experienced physical abuse, in comparison to children who had experienced other types of abuse (Arata, 2015). Most children identified as experiencing physical abuse have experienced it at a sensitive developmental period, infancy and early childhood, in their life. Sensitive developmental periods are a time in a child's life where limited brain development is occurring and negative impacts can be extremely detrimental (Cummings & Berkowitz, 2013). Children shown to have experienced physical abuse during this time show problems with attention (Garrido, Taussig, Culhane, & Raviv, 2015) and aggression (Arata, 2015), are at high risk for developing antisocial behavior later in life (Jaffee, 2004, Shackman & Pollack, 2014), and are at higher risk for juvenile delinquency (Lansford et. al, 2002). Even though there is an abundance of research on the negative effects of physical abuse, no study to date has taken into account the severity of this form of maltreatment and its relationship to these negative outcomes.

Sexual abuse. Sexual abuse can be defined in many ways, dependent on the sexual act forced upon the child. In broad terms, it encompasses any sexual act that is performed and/or forced upon a child that includes the child's participation in or witnessing of a sexual event. Girls are more likely than boys to report and experience sexual abuse (Tyler, 2002). Girls report one in

four sexual abuse cases, while boys report one in ten. A staggering 45% of women have been reported to experience sexual abuse in adolescence or adulthood (Kelley, 2015). Experiencing early sexual trauma has been shown to influence substantial negative effects encompassing social, emotional, cognitive, and behavioral problems (Hassan et al., 2015). The detrimental consequences continue into adolescence and adulthood, specifically in sexual relationships, dating, and intimacy (Feiring, Simon & Cleland, 2010). Risky sexual behavior and being the victim of dating aggression are among the most common negative outcomes. These factors put the adolescent at risk for sexually transmitted diseases, unexpected pregnancy, and criminal behavior.

Sexual abuse is more closely linked to internalizing symptoms, such as anxiety and depression (Feiring et al., 2010). Although internalizing behaviors are more prominent, aggressive behaviors are still present and closely related negative outcomes. In a study comparing children with abuse histories with children who do not have abuse histories, those with abuse histories engaged in delinquent behaviors at an earlier age (Swanston et al., 2003). In a meta-analysis on sexual abuse and coping strategies, increases in aggressive and delinquent behaviors were found in victims of childhood sexual abuse (Tremblay, Herbert, & Piche, 1999). The lack of coping strategies used was found to be predictive of aggressive and delinquent behaviors. Additionally, it has been identified that the victims' cognitive interpretation and evaluation of the abusive event has a relationship to later adjustment and coping. In a study comparing children with sexual abuse histories and those with no abuse histories, those suffering from abuse exhibited more aggressive behavior (Garnefski, 1998). Additionally, a meta-analysis reviewing the effects of sexual maltreatment on the development of conduct disorder chose to investigate the effect of chronic sexual abuse in comparison to momentary abuse (Maniglio,

2015). It was found that repeated molestation was more strongly related to conduct disorder in comparison to non-repetitive molestation. Severity of abuse was hypothesized to have an influence on aggressive and conduct related behaviors; however, chronicity was also shown to have an influence on these behaviors. More in depth contributions to the sexual abuse literature on the chronicity, severity, and timing of abuse and their influence on aggressive outcomes are needed.

For the purposes of this study, three categories of maltreatment will be explored: emotional, physical, and sexual. Although neglect is an important category of maltreatment, the measure selected separates abuse and neglect as two different categories. To narrow the focus to maltreatment subtypes, the three main categories of abuse will be explored.

Severity of Maltreatment

The difficulty in defining severity is one reason why researchers have avoided studying the characteristic. However, the level of severity experienced has shown to significantly influence behavioral outcomes (Jackson et al., 2014). Across all types of abuse, severity has been defined variably and the chosen definition has been selected dependent upon the measure used in a study, and not based on a unifying definition of severity. Multiple measures exist, and have been utilized, to capture the level of severity across all types of abuse.

A study linking maltreatment to aggressive outcomes, conducted by Manly, Kim, Rogosch, and Cicchetti (2001), also found that severity was related to an increased level of aggression. Severity was examined by asking participants to rate the severity of abuse experienced on a Likert scale. Results indicated that the severity of emotional abuse during infancy and preschool age groups had a significant impact on an increase in aggressive behaviors. Emotional abuse commonly co-occurs with other types of abuse; therefore, there is a

need for research on the effect severity of combined types of abuse on aggression. A second study investigated the relationship between level of severity of physical abuse, aggressive behavior, and attention problems. Both minor and severe physical abuse categories were shown to elevate levels of aggressive behaviors. However, when severity and attention problems were both entered to predict aggressive behaviors, only minor severity levels had a significant relationship with aggressive behaviors in comparison to high severity. Unfortunately, no data on chronicity was collected; therefore, we cannot definitively explain the relationship of physical abuse to aggression when all factors are accounted for.

Severity of abuse describes the harsh trauma and impact of abuse the child suffers. The role of severity is of utmost importance when differentiating the role that abuse plays in later outcomes. The cruelty of abuse a child experienced could skew the way risk and protective factors play a role in abuse and behavioral outcomes. For example, it has been shown that poverty is a risk factor for neglect; although, we do not know how the severity of neglect and poverty together influence the later behavioral outcomes of the child. Additionally, poverty and harsh parenting style are risk factors for childhood physical abuse. What is unknown is how the severity of physical abuse influences the later aggressive outcomes commonly seen in children who are victims of physical abuse (Manly et al., 2001). The substantial gap in the literature for severity of abuse severely limits our understanding of the role of severity in aggressive outcomes. For the purposes of this study, severity will be defined as the individuals' perception of the level of severity that was inflicted on them during their maltreatment experience(s). Severity will be assessed using a self-report measure that captures the three main types of abuse (emotional, physical, and sexual) and captures severity on a 5-point Likert scale. A self-report measure of maltreatment is important in the current study because it allows the researcher to

examine the relationship between perceived maltreatment severity and later aggressive behaviors.

Aggression

The different combinations and presentations of maltreatment can influence the development of behavior problems. Early behavior problems have been linked to more severe outcomes in middle childhood, adolescence, and adulthood. The most common outcome of maltreatment is aggressive behavior, which can lead to juvenile delinquency and criminal behavior (Lansford et al., 2002; Cuadra et al., 2014; Day, Bream, & Pal, 1992). Additionally, aggressive behaviors are the most prevalent behaviors that lead children to be referred to mental health services. Children who have experienced maltreatment may use aggression as a means to obtain an end goal, tangible object, or feeling such as power and control (Thompson & Tabone, 2010). Two functions of aggressive behaviors have been identified in the literature, proactive and reactive aggression. Proactive aggression is commonly referred to as “cold-blooded” and occurs due to a want or need, not a result of being provoked (Brendgen et al., 2001). On the other hand, reactive aggression is referred to as “hot-blooded” and is a result of being angry in response to an actual or perceived threat.

Proactive Aggression. Proactive aggression is exhibited in 15% of children with aggressive problems (Brendgen et al., 2001). It often presents through coercive or dominating acts, such as bullying (Day et al., 1992). Children who engage in proactive aggressive acts are more likely to justify and rationalize their actions, project a sense of entitlement, and overestimate the likelihood of negative consequences (Cuadra et al., 2014). Proactive aggression is more likely to be related to delinquency, in contrast with reactive aggression that leads to intimate partner violence (Hubbard et al., 2010; Brendgen et al., 2001). Although proactive

aggression involves committing aggressive acts, people who have been identified as proactively aggressive have a more manipulative and coercive nature (Day et al., 1992).

Different pathways and environmental factors lead to the development of reactive and proactive aggression (Hubbard et al., 2010). Parental substance abuse has been found to be a risk factor for the development of proactive aggression (Brendgen et al., 2001). In a study examining proactive and reactive aggression in boys at ages 13, 15, 16, and 17 years, moderators for proactive aggression were found (Brendgen et al., 2001). Boys who exhibited proactive aggression at 13 years of age were found to have a decrease in these aggressive acts if parental supervision was increased at the age of 15 years. Thus, an increase in parental supervision at 15 years old decreased the likelihood of delinquency in boys with proactive aggression. Last, proactive aggression was found to have a unique contribution to delinquency-related violence that reactive aggression did not.

Reactive Aggression. Reactive aggression is exhibited by 32% of children with aggressive behavior problems; however 53% of children exhibit both types of aggression (Brendgen et al., 2001). Reactive aggression is characterized by the misattribution of hostile intentions of others and acting upon those situations in aggressive ways (Day et al., 1992). An example of this is a child who cannot handle being playfully teased by peers and acts aggressively in defense. Children who exhibit reactive aggressive acts are more likely to have poor problem solving abilities, attention problems, and inhibit fear in aggressive situations (Cuadra et al., 2014).

Reactive aggression has been shown to be a risk factor for later dating aggression and intimate partner violence (Hubbard et al., 2010, Brendgen et al., 2001). Physical abuse and lack of maternal caregiving have been shown to influence the development of reactive aggression

(Hubbard et al., 2010). In the same study mentioned above, where boys were assessed at ages 13, 15, 16, and 17 years, it was found that less maternal care in 15-year old boys increased the likelihood of reactive aggression and dating violence (Brendgen et al., 2001). Maternal caregiving moderated the relationship between reactive aggression and dating violence.

Proactive and reactive aggression can occur together; however, one presentation may be more prominent than the other. To better isolate the factors that influence both types of aggression uniquely, one specific factor should be analyzed in part with the functions of aggression. In the present study, maltreatment severity and its relationship to the functions of aggression is explored to further understand the relationship that maltreatment has to the functions of aggression. This allows for a more thorough investigation of the contributing factors in the development and maintenance of aggression as a consequence of abuse.

Purpose of the Present Study

Research has identified many problematic outcomes for different forms of child maltreatment and aggression. The most debilitating of outcomes has been that children who experienced maltreatment show later externalizing and aggressive behaviors (Manly et al., 2001). The literature currently holds information on the major influence of the type of maltreatment in relation to aggression, without separately examining severity of maltreatment on later aggression. Examining a potential relationship between severity level of maltreatment and the later development of aggression can further our knowledge on the relationship between the two variables in children, adolescents, and young adults.

The literature on type of maltreatment is extensive, with many researchers evaluating maltreatment's impact on later aggressive behaviors. Physical abuse has been closely linked to externalizing disorders, while neglect has been shown to lead towards more internalizing

symptoms and disorders (Manly et al., 1994; Cummings & Berkowitz, 2013; Ellenbough et al., 2015). However, the different factors of maltreatment, such as severity, are crucially understudied despite their importance. These factors can substantially influence the course and development of later aggressive problems in youth due to their altering of the maltreatment experience. More knowledge on the relationship between these factors could lead to later identification of at-risk children and proactive measures. Risk and protective factors that play a role in childhood maltreatment and later aggressive behaviors are sex and socioeconomic status. Poverty and maltreatment have a strong relationship, as evidenced by earlier research, especially with neglect and physical maltreatment (Manly et al., 2001). Additionally, socioeconomic status has been shown to be closely related to peer rejection, which is a risk factor for the development of later aggressive behavior problems in young adults. Research has also shown that girls are more likely to report maltreatment and be victims of sexual maltreatment specifically. Last, it has been shown that boys are more likely to exhibit reactive aggression than girls (Bolger & Patterson, 2001). Due to these known risk factors, sex and socioeconomic status was controlled for in the model for the present study.

Research investigating the relationship between the characteristics of abuse and aggressive outcomes is limited. It has not yet been identified whether the influence of specific factors of maltreatment predict later proactive and reactive aggression. Aggression accounts for 25% of all special services in schools, and half of child referrals for psychological services. Moreover, adults who showed increased aggression in childhood commit the majority of all crimes (Hubbard et al., 2010). The various characteristics of maltreatment that differentially predict the mechanisms through which negative aggressive outcomes develop are not well understood. These mechanisms can exist through learned experiences, the reinforcement of

aggressive acts, and many other bidirectional relationships that have not yet been studied.

Further research could be conducted to better understand how the association between maltreatments' severity level of the three main types of abuse contributes uniquely to aggressive behavioral outcomes. For the purposes of this study, a self-report measure was used so that victims could report the severity of past maltreatment experienced as measured on a 5 point Likert scale. Severity is defined as the self-report by the individual of the level of harshness and debilitation of his/her maltreatment. Severity of maltreatment was categorized across emotional, physical, and sexual abuse. Neglect was excluded due to the inability of the measure to capture neglect in one category; the measure used looks at emotional and physical neglect separately. In the present study, I hypothesized that the perceived level of maltreatment severity in childhood can independently influence the level and functions of aggressive behavior reported in young adults. I also hypothesized that the level of severity, in all the three main types of abuse (emotional, physical, and sexual), will be related to the overall levels of aggression reported.

Specific research questions include:

1. In non-offenders, are higher levels of self-reported severity of past emotional abuse related to higher levels of current, self-reported proactive and reactive aggression?
 - 1a. In offenders, are higher levels of self-reported severity of past emotional abuse related to higher levels of current, self-reported proactive and reactive aggression?
2. In non-offenders, are higher levels of self-reported severity of past physical abuse related to higher levels of current, self-reported reactive and proactive aggression?
 - 2a. In offenders, are higher levels of self-reported severity of past physical abuse related to higher levels of current, self-reported reactive and proactive aggression?

3. In non-offenders, are higher levels of self-reported severity of past sexual abuse related to higher levels of current, self-reported proactive and reactive aggression?
- 3a. In offenders, are higher levels of self-reported severity of past sexual abuse related to higher levels of current, self-reported proactive and reactive aggression?
4. After controlling for sex and SES, do higher levels of self-reported severity across all three dimensions of abuse explain a significant amount of variance in the overall levels of current aggression of non-offenders?
5. After controlling for sex and SES, do higher levels of self-reported severity across all three dimensions of abuse explain a significant amount of variance in the overall levels of current aggression of offenders?

CHAPTER III: METHODS

Participants

The current study sample included 99 young adults currently enrolled in a southern university ($n = 48$) or on probation in North Carolina ($n = 51$). The sexes of the participants were 59 males and 40 females. Participants ranged in age from 18-29 years old, with a mean age of 21.9 years old (Table 1). Of the sample, 62% of participants were from median or high-income households while 36% were from low SES households. Included in the sample were 18 male non-offenders, 30 female non-offenders, 41 male offenders, and 10 female offenders.

Students (non-offenders) were recruited through an online system for course credit in their Introductory Psychology course if they endorsed a history of childhood maltreatment prior to the age of 18 years old. Once they were registered, no additional prerequisites were necessary to participate in reference to their maltreatment history. Probationers/parolees (offenders) were recruited through two probation offices in North Carolina. The 54 individuals had all been convicted of at least one crime and were currently on probation or parole for that offense. Their probation officers were responsible for recruiting this sample of individuals. Childhood maltreatment was not a prerequisite for this subsample even though it was frequently endorsed. Exclusion criteria for this subsample included less than a 9th grade education, having a diagnosed developmental/intellectual disability or psychotic disorders, or being non-English speaking. Once probation officers had selected probationers to participate they were asked to come to a conference room, upon completion of their probation meeting, where they signed a consent form to participate in the study. Once they were in the meeting room with the researchers, they were briefed about the study and consent forms were signed if they continued to agree to participate.

Table 1

Demographics of Non-Offenders and Offenders

	Non-Offenders	Offenders
Sex		
Male	18 (37.5%)	41 (80.4%)
Female	30 (62.5%)	10 (19.6%)
Average	19	24
Age		
Low SES	11 (22.9%)	25 (50%)

Materials

Participants completed two self-report questionnaires on past experiences with child abuse and current aggressive behavior: the *Child Trauma Questionnaire-Short Form (CTQ-SF)* and the *Reactive Proactive Aggression Questionnaire (RPQ)*. Retrospective, self-reported experiences of childhood maltreatment on the CTQ-SF was used to assess the type and severity of abuse. The three main dimensions (emotional, physical, & sexual abuse) were used to examine type and level of severity. Self-reported aggression on the RPQ was used to assess participants' current type of aggression in the past 12 months and total aggressive behavior.

Child Trauma Questionnaire - Short Form (CTQ-SF). The *CTQ-SF* was developed by Bernstein et al. (1997) to examine childhood abuse occurring before the age of 18. The 40-item scale was revised to a 28-item scale for purposes of brevity in delivery. The 28-item scale has three dimensions: emotional abuse and neglect, physical abuse and neglect, and sexual abuse. These translate to five categories of abuse: emotional neglect, physical neglect, emotional abuse,

physical abuse, and sexual abuse. Each of the five categories is represented by five items on a 5-point Likert scale. This scale allows the participant to respond on a 1-5 scale of severity “1=never true”, “2=rarely true”, “3=sometimes true”, “4=often true”, and “5=very often true.” The additional three items integrated in the measure account for minimization scores and were not used in data analyses. CTQ-SF was found to have clinical utility, as evidenced by acceptable scores corresponding to the five categories of abuse (Spinhoven et al., 2014). Item loadings onto DSM-IV descriptions of abuse for the five categories resulted in a small to moderate (.13 - .56) correlation, while item loadings for the overall scale were moderate to large (.48 - .84). Studies have reported good convergent and discriminant validity (Thombs et al., 2007). Additionally, good internal consistency was found ($\alpha = .83$) for the CTQ-SF (Hopfinger, Berking, Bockting, & Ebert, 2016).

Reactive Proactive Aggression Questionnaire (RPQ). The *RPQ* is a self-report tool that measures the level of reactive aggression, proactive aggression, and overall total aggression. These factors are assessed through 23 items relevant to proactive and reactive aggression. Participants can answer the 23 items with the following answers: “Never,” “Sometimes,” and “Often.” The *RPQ*, using a three-factor model, has been found to serve as the best fit for investigating adolescents/young adults at-risk for aggressive behavior (Smeets et al., 2016). Additionally, the *RPQ* has been shown to be a good fit, using a two-factor model, for adolescents/young adults (Baker, Raine, Liu, & Jacobson, 2008). It was found that four categories of individuals are able to be identified reliably through the *RPQ*: low reactive/proactive, predominantly proactive, predominantly reactive, and high reactive/proactive. The *RPQ* has been evidenced to show good internal consistency and construct validity in samples with children, adolescents, and adults (Cima, Raine, Meesters, & Pompa, 2013).

Procedures

The present study was approved by the University's Institutional Review Board (IRB; see appendix). Data collection occurred in the psychology building at a southern university and two probation offices in North Carolina. Data collection of college participants took place in a classroom in the psychology building, while data collection of probationers occurred in the conference room of the probation office. Each data collection session lasted approximately 30 minutes to an hour. All participants were provided measures in a specified sequence: informed consent, demographic questionnaire, maltreatment questionnaire, and reactive proactive questionnaire. Participants were presented with an informed consent document and additionally were given a verbal summary of the measures they would be given during the data collection process. If individuals agreed to participate, they were then given a demographic questionnaire. This questionnaire was used to obtain information on their age, gender, current relationship status, and household members. The next measure given was the CTQ. When presented with this measure, participants were asked to answer according to maltreatment experienced before the age of 18. This measure was given to retrospectively understand the victim's perception of past abuse. The last measure presented was the RPQ. When presented with this measure, participants were asked to rate the questions, as they currently experienced them in the past year, not retrospectively as with the previous measure. When all measures were completed participants were debriefed for purposes of informing participants about the different measures of the study and how helpful their data would be to the overall study. Any questions participants had about the study were answered to the best of the researchers' abilities.

Data Analyses

Correlations and descriptive statistics were obtained for both groups, offenders and non-offenders (see Table 2 and Table 3). Due to the distinct nature of the two groups, as supported by t-tests (i.e. sex, SES), higher order analyses were conducted by looking at the two groups separately. To answer the first three research questions, correlations between maltreatment severity, of each of the three types of abuse, and proactive and reactive aggression were run to determine whether a relationship was present between the variables (see Table 4 & 5). Of the 99 participants, 2 participants (one from each group) indicated high levels of minimization on the childhood maltreatment severity measure, meaning that they minimized the alleged abuse. Therefore, their data was excluded from the study to control for internal validity. Hierarchical linear regressions were run for each sampled population separately, offenders and non-offenders, due to the distinct nature depicted across the two groups. The first step included sex and socioeconomic status; step 2 included an overall total severity score for childhood maltreatment. The outcome variable was the total level of aggression. The sex of the participant and socioeconomic status were added to the model to control for additional factors that have been shown to contribute to aggressive behaviors.

CHAPTER IV: RESULTS

Descriptive statistics revealed that the non-offender population reported higher levels of emotional, sexual, and overall maltreatment severity (Table 2). Independent samples t-test were conducted to examine the significance of the differences between the two groups on maltreatment severity and aggressive behavior (Tables 2 & 3). The offender group reported higher levels of physical abuse severity in comparison to non-offenders; however, this was not a significant difference, $t(97) = -.052, p = .959$. The non-offender group reported higher levels of emotional abuse severity, which was significantly higher than the levels reported by the offender group, $t(97) = 3.624, p < .001$. The difference reported in sexual abuse severity was not significant between the two groups, $t(97) = 1.382, p = .170$. However, sexual abuse severity was endorsed at a low rate across all participants (a score of 5 translates to 'no history of abuse'). Overall severity of abuse reported by the non-offender group was not significantly higher than the severity reported for the offender group, $t(97) = 2.721, p = .704$.

For reactive aggression, the non-offender group reported higher levels of current reactive aggression (as exhibited in the past year) in comparison to the offender group. The difference reported between the two groups was significant, $t(97) = 2.439, p < .01$. The offender group reported higher levels of proactive aggression in comparison to the non-offender group; however this difference was not significant, $t(97) = -.486, p = .628$. For total aggression scores, the non-offender group reported higher levels of overall aggression than the offender group. This difference was not significant for overall aggression, $t(97) = 1.605, p = .112$. Table 3 presents the results of the independent samples t-test for aggressive behaviors reported.

Table 2

Maltreatment Severity Scores for Non-Offenders and Offenders

Severity	Non-Offender	Offender	<i>t</i>	<i>df</i>	<i>p</i>
Emotional	13.10 (5.567)	9.31 (4.831)	3.624	97	.000**
Physical	8.96 (3.903)	9.00 (4.109)	-.052	97	.959
Sexual	7.77 (5.228)	6.49 (3.936)	1.382	97	.170
Total	29.83 (8.854)	24.80 (9.50)	2.721	97	.704

Note. Standard deviations are in parentheses below the mean.

** = Correlation significant at 0.01 level (2-tailed)

Table 3

Aggression Scores for Non-Offenders and Offenders

Note. Standard deviations are in parentheses below the mean.

Form of	Non-Offender	Offender	<i>t</i>	<i>df</i>	<i>p</i>
Aggression					
Reactive	11.21 (5.132)	8.94 (4.086)	2.439	97	.017**
Proactive	2.13 (2.150)	2.35 (2.489)	-.486	97	.628
Total	13.54 (6.604)	11.49 (6.117)	1.605	97	.112

** = Correlation significant at 0.01 level (2-tailed)

Correlational analyses were used to examine the relationship between maltreatment severity for each type of maltreatment and two different functions of aggression, proactive and reactive. Correlational analyses were run separately for each group, non-offenders and offenders. As expected, levels of the different functions of aggression were correlated with each other in the non-offender group, $r(48) = .582, p < .01$, and in the offender group, $r(51) = .584, p < .01$. For the non-offender group, the overall level of aggression was significantly correlated with both proactive aggression $r(48) = .776, p < .01$ and reactive aggression $r(48) = .934, p < .01$. For the offender group, the overall level of aggression was significantly correlated with both proactive $r(51) = .871, p < .01$ and reactive aggression $r(51) = .874, p < .01$. The research questions tested were:

Research Question 1: In non-offenders, are higher levels of self-reported severity of past emotional abuse related to higher levels of current, self-reported proactive and reactive aggression?

Research Question 1a: In offenders, are higher levels of self-reported severity of past emotional abuse related to higher levels of current, self-reported proactive and reactive aggression?

For the non-offender group, results from the correlational analyses (Table 4) indicated that emotional abuse severity was positively correlated with proactive aggression $r(48) = .285, p < .05$, suggesting that greater severity in emotional abuse was associated with higher levels of proactive aggression. There was no significant relationship to reactive aggression, $r(99) = .115, p = .435$, or to overall total aggression reported, $r(48) = .234, p = .109$.

For the offender group, results from the correlational analyses indicated that emotional abuse severity was positively correlated with proactive aggression $r(51) = .438, p < .001$, reactive aggression $r(51) = .525, p < .001$, and overall total aggression reported $r(51) = .567, p <$

.001. These results suggest that the offenders' group reporting of emotional abuse severity had a significant relationship with both functions of aggression and current overall aggression reported (Table 5).

Research Question 2: In non-offenders, are higher levels of self-reported severity of past physical abuse related to higher levels of current, self-reported reactive and proactive aggression?

Research Question 2a: In offenders, are higher levels of self-reported severity of past physical abuse related to higher levels of current, self-reported reactive and proactive aggression?

In the non-offender group, physical abuse severity was not significantly related to proactive aggression $r(48) = .011, p = .942$, reactive aggression, $r(48) = .029, p = .844$, or overall total aggression reported $r(48) = .035, p = .815$. This suggests that the physical abuse severity reported by the non-offender group did not have a significant relationship with the current levels of aggression reported (Table 4).

For the offender group, physical abuse severity was positively correlated with proactive aggression $r(51) = .011, p < .001$ and reactive aggression $r(51) = .412, p < .01$, suggesting that greater severity of past physical abuse was associated with higher levels of both proactive and reactive aggression. Additionally, physical abuse was positively correlated with the levels of overall aggression reported, $r(51) = .466, p = .001$. These results suggest that the severity of past physical abuse has a relationship with both functions of aggressions and current overall levels of aggression reported (Table 5).

Research Question 3: In non-offenders, are higher levels of self-reported severity of past sexual abuse related to higher levels of current, self-reported proactive and reactive aggression?

Research Question 3a: In offenders, Are higher levels of self-reported severity of past sexual abuse related to higher levels of current, self-reported proactive and reactive aggression?

For the non-offender group, sexual abuse severity was not related to proactive aggression $r(48) = -.236, p = .106$, reactive aggression $r(48) = -.101, p = .493$, or overall aggression reported $r(48) = -.173, p = .241$. Sexual abuse severity was not endorsed as much as the other types of abuse across both groups; therefore, our results may suggest that there was not enough variability to discover a significant relationship between sexual abuse severity and later aggressive behaviors (Table 4). The minimum endorsed sexual severity level was a 5 (no history) which 9 participants endorsed. The highest endorsed level was a 19, reported by one individual.

For the offender group, sexual abuse severity was not significantly related to proactive aggression $r(51) = -.116, p = .418$, reactive aggression $r(51) = .109, p = .447$, or overall aggression reported $r(51) = .013, p = .927$. Again, the low variability and low base rate in scores on the sexual abuse severity measure cannot definitely suggest that a relationship would not exist between sexual abuse severity and self-reported current levels of aggression (Table 5). The minimum endorsed level of sexual severity was a 5 (no history of abuse) which 42 of the 51 participants endorsed.

Table 4

Correlational Analyses for Non-Offender Group

	1.	2.	3.	4.	5.	6.
1. Emotional Abuse Severity	1.0	.303*	-.080	.285*	.115	.234
2. Physical Abuse Severity	.303*	1.0	-.090	.011	.029	.035
3. Sexual Abuse Severity	-.080	-.090	1.0	-.236	-.101	-.173
4. Level of Proactive Aggression	.285*	.011	-.236	1.0	.582**	.776**
5. Level of Reactive Aggression	.115	.029	-.101	.582**	1.0	.934**
6. Overall Level of Aggression	.234	.035	-.173	.776**	.934**	1.0

* = Correlation significant at the 0.05 level (2-tailed)

** = Correlation significant at 0.01 level (2-tailed)

Table 5

Correlational Analyses for Offender Group

	1.	2.	3.	4.	5.	6.
1. Emotional Abuse Severity	1.0	.513**	.265	.438**	.525**	.567**
2. Physical Abuse Severity	.513**	1.0	.126	.409**	.412**	.466**
3. Sexual Abuse Severity	.265	.126	1.0	-.116	.109	.013
4. Level of Proactive Aggression	.438**	.409**	-.116	1.0	.584**	.871**
5. Level of Reactive Aggression	.525**	.412**	.109	.584**	1.0	.874**
6. Overall Level of Aggression	.567**	.466**	.013	.871**	.874**	1.0

* = Correlation significant at the 0.05 level (2-tailed)

** = Correlation significant at 0.01 level (2-tailed)

Hierarchical multiple regression analysis was used to test the predictive relationship between childhood maltreatment severity, using an overall severity score, and aggressive behavior outcomes, using an overall aggression score, in young adults who are offenders and non-offenders. The control variables that have been previously shown to be correlated with

aggressive behavior were entered first (sex, SES), followed by an overall maltreatment severity score. The research questions answered were:

Research Question 4: After controlling for sex and SES, do higher levels of self-reported severity across all three dimensions of abuse explain a significant amount of variance in the overall levels of current aggression of non-offenders?

Research Question 5: After controlling for sex and SES, do higher levels of self-reported severity across all three dimensions of abuse explain a significant amount of variance in the overall levels of current aggression of offenders?

Results of the first regression analysis with the young adult non-offender subsample, reveal that childhood maltreatment severity was not a predictor of aggressive behavior, $F(3,44) = .166, p < .05$. The full model accounted for 5.6% of the variance in the model. Table 6 shows the results of the model.

For the young adult offender subsample revealed that childhood maltreatment severity was a significant predictor of later aggressive behavior above and beyond SES and sex, $F(3,46) = 5.652, p < .01$. The entire model accounted for 22.2 percent of the variance in total aggression. Table 7 shows the results of the model.

Table 6

Non-Offender Summary of Hierarchical Linear Regressions Analysis for Variables Predicting Aggression

Predictor	β	Adjusted R^2	R^2 (ANOVA)	F	p
Variable					
Step 1		-.034	.010	.227	.798
Low SES	-.096				
Sex	.042				
Step 2		-.056	.011	.166	.918
Low SES	-.089				
Sex	.017				
Total Maltx	.043				
Severity					

* = Correlation significant at the 0.05 level (2-tailed)

** = Correlation significant at 0.01 level (2-tailed)

Table 7

Offender Summary of Hierarchical Linear Regression Analysis for Variables Predicting Aggression

Predictor	β	Adjusted R^2	R^2 (ANOVA)	F	p
Variable					
Step 1		.053	.091	2.363	.105
Low SES	.302				
Sex	-.124				
Step 2		.222	.269	5.652	.002**
Low SES	.068				
Sex	-.147				
Total Maltx	.485*				
Severity					

* = Correlation significant at the 0.05 level (2-tailed)

** = Correlation significant at 0.01 level (2-tailed)

CHAPTER V: DISCUSSION

The hypotheses of the current study were 1) the perceived level of maltreatment severity in childhood is related to the level and functions of aggressive behavior reported in young adults for both offenders and non-offenders and 2) the overall level of severity, across all the three types of abuse (emotional, physical, & sexual), will be related to the overall levels of aggression reported.

Hypothesis 1

This exploratory analysis was unique because it investigated the relationship between severity of three types of maltreatment and two functions of aggression. Previous research has not examined the relationship between each type of abuse severity and the two functions of aggression. The specific research questions for hypothesis one were explored through multiple correlations. The correlational analyses were run separately for non-offenders and offenders.

For the non-offender group, results of the correlations revealed that emotional abuse was positively related to proactive aggression. Physical and sexual maltreatment severities were not significantly related to either proactive or reactive aggression. For the offender group, results of the correlational analyses revealed that emotional abuse severity was significantly related to both proactive and reactive aggression. Physical abuse severity was also found to be related to both proactive and reactive aggression. Results of the correlational analyses additionally found that emotional and physical maltreatment severity were significantly related to levels of overall aggression reported. Sexual maltreatment severity was not significantly related to either function of aggression or overall levels of aggression reported, but it was also endorsed at a very low rate of occurrence.

The results of this study add further support to current research that shows a relationship between childhood maltreatment and aggressive behaviors in young adults (Gover, 2002; Bender, 2010). Previous research had yet to explore the relationship between each type of abuse and their corresponding severity level with later self reported functions of aggression. In the current study, sexual abuse was the only type of abuse that was not correlated to later functions of aggression. This may be due to sexual maltreatment severity not being endorsed across participants as much as the other types of abuse. More specifically, the majority of the offender population reported that they did not have a history of sexual abuse. Previous research has on sexual abuse and later outcomes are conflicting. Although girls are more likely to report sexual abuse, they also report that victimization is a key factor that led to their criminal acts (Tyler, 2002; Bender, 2010). However, the results of the current study may not be surprising given that other research linked sexual abuse to internalizing symptoms, such as anxiety and depression, moreso than externalizing symptoms (Feiring et al., 2010).

Hypothesis 2

The specific research questions for hypothesis two were explored through hierarchical linear regression models. The models revealed that childhood maltreatment severity for the offender population was significantly predictive of overall aggression, while there was no significant predictive relationship for the non-offender group. In the offender group, maltreatment severity accounted for 22.2% of the variance in the model. When maltreatment severity was added to the model, along with sex and low SES, the relationship was significant. Childhood maltreatment has been viewed as a mitigating factor for later delinquent behaviors, even in the court system where a history of maltreatment is considered when an individual is charged (Stevenson, 2009). The criminal acts committed may be viewed as less intentional and

lead to lighter sentences for the individual. Additionally, research has suggested that there may be a relationship between specific childhood maltreatment and later offending behaviors (van der Put et al., 2015). Physical abuse is a type of maltreatment that has been consistently linked to later aggressive behaviors and violent crimes in offender populations. The results of the current study are consistent with this research and validate the impact that physical abuse has on aggressive behaviors in young adulthood.

Summary of Results

The descriptive data revealed that the non-offender group reported higher levels of emotional and sexual abuse, while the offender group reported a higher level of physical abuse. However, only the difference in reporting of emotional abuse severity was significant between the two groups. The non-offender group also reported higher levels of reactive aggression, while the offender group reported higher levels of proactive aggression. The difference in reporting of reactive aggression was significant between the two groups; that is, the reported levels of reactive aggression were significantly higher in the non-offender group than the levels reported by the offender group. The descriptive data are surprising given that the offender population would be suspected to have experienced higher levels of overall abuse severity and aggressive behaviors. However, this is consistent with current research that suggests higher levels of proactive aggression are related to an increase in delinquency (Hubbard et al., 2010). Additionally, proactive aggression has been found to uniquely contribute to delinquency related violence, in comparison to reactive aggression (Brendgen et al., 2001).

The offender population data revealed that their perceived maltreatment severity significantly impacted their later reported aggressive behaviors. These results show the influence that perception of maltreatment severity can have on behavior later in life. The model reveals

that the non-offender population's reports of higher levels of severity of abuse were not predictive of their reports of aggressive behavior. This population also reported higher levels of reactive aggression, which were significantly correlated to higher levels of reported maltreatment severity. However, the lack of significance in the model concurs with the idea that the perceived severity of abuse may impact the perceived level of aggression exhibited. The nature of self-report is to reflect on an experience and report on how that experience was perceived. It appears that the self-report measure may have been less accurate for the non-offender population, given that they reported higher levels of both maltreatment and reactive aggression than the offenders, even though there was no relationship found between these two variables in the non-offender group. There are likely other variables of interest that were not explored in this study that may account for the differences between these two groups.

One possibility for the non-offender group is that they do engage in reactive aggression that is related to their childhood emotional abuse but their aggression does not rise to the level of criminal behavior. Other ways that non-offenders may be affected by reactive aggression include loss of employment, discord in relationships, and continuing the cycle of child abuse. Another possibility is that the non-offenders perceive less than aggressive behavior to be aggressive because they are more sensitive to their own and others' behaviors. A third possibility is that the offenders as a group are more likely to perceive reactive aggression as normal behavior. These models of aggression in the home might have caused offenders to be desensitized to aggression and influence their self-ratings of aggressive behavior. Additionally, offenders may have significantly reduced their aggressive behavior during the course of their probation and therefore their reporting, although accurate, is not representative of a predictive relationship between their earlier maltreatment and violent offenses.

Limitations

One limitation to this study is the self-report of current aggressive behaviors. The self-report of maltreatment severity is essential to the study because the focus was on perceptions of abuse; however, the self-report of aggressive behavior allows for personal biases to interfere with the reporting of actual behaviors. Although the maltreatment measure had a minimization scale to account for any minimizing of abuse, the aggression measure did not have such a scale. Self-report of current aggressive behaviors may limit the internal validity of these findings.

Another limitation to this study is the time at which probationers participated. Participants who were on probation were asked to participate when their meeting with their probation officer was over. Therefore, the information they reported may have been influenced by the status of their meeting (i.e. getting off probation, receiving a urine test), which was not disclosed to the researcher.

Last, sexual abuse severity was not endorsed as much as emotional and physical abuse severity. An assumption can be made that this low base rate reporting contributed to the insignificance of the relationship between sexual abuse severity and later aggressive behaviors. Thus, we were unable to draw conclusions based on the correlational analyses.

Implications for Clinical Practice

One implication for practice from the current study is the emphasis on the importance of how the individual's perception of past trauma can impact later perceptions of aggressive outcomes. It is hypothesized that these perceptions influences later aggression through poor coping skills, lack of control, and difficulty expressing and perceiving emotions correctly (Rogosch et al., 1995; Miller et al., 2004). Behaviors such as lying, conning, and superficial charm can follow abusive events and lead to later aggressive behaviors (Bender, 2010). This

implies that specific behaviors do develop following maltreatment; however, the pathway that develops during adolescence before delinquent behaviors are revealed is unknown. Even though the offender population reported less severe trauma, in comparison to the non-offender group, the level of severity of the trauma was significantly predictive of their later aggressive behaviors. This implies that perception of abuse can have an impact on later behaviors and issues concerning past abuse in adults should be evaluated and investigated during therapy. Some children may be more resilient than others allowing them to cope better with the past trauma, but some children may have difficulty understanding and coping with the trauma.

The current study supports the need for screening in schools for maltreatment at home as part of a routine assessment for children that are exhibiting aggressive and delinquent behaviors. The relationship between the two variables has been strong and consistent enough that a screening tool should be used for any student who is exhibiting the related behaviors. Aside from maltreatment, family and community factors have a significant impact on later violent offending. Family and community factors hold great influence through modeling and observing relationships in the home and community, maintaining relationships with delinquent peers, and lacking a strong and supportive relationship to school (Gover, 2002). This implies that communities coming together to create a supportive and safe environment for students could greatly impact their course of development of aggressive and delinquent behaviors.

Directions for Future Research

The results of the current study suggest that while severity has an impact on the level of aggression exhibited, the type of abuse may uniquely contribute to the development of aggressive behaviors in youth. These results reflect the influence that childhood maltreatment can have on individuals and sparks new questions about why some individuals who experience

maltreatment become offenders while other remain non-offenders. The answer to this question would guide our efforts in treating children who have been the victims of maltreatment as well as providing rehabilitation of juvenile offenders. Although we have repeatedly found a relationship between childhood maltreatment and adult aggressive behavior, we have not found the ways to prevent childhood maltreatment. Thus, more research could be conducted relating maltreatment severity and functions of aggressive behaviors in offenders and non-offenders.

Second, research has shown that child maltreatment explains violent offending in juveniles (Gover, 2002). Yet, more research is needed to explore the pathway and progression of aggressive behaviors from childhood to young adulthood. This could be done by focusing on the behaviors exhibited in childhood that are related to, or predictive of, the forms of aggressive behaviors exhibited in young adulthood. A specific focus on the offending population can lead to identification of early behaviors (i.e. truancy, dating violence, fighting with peers) that are shown to precipitate a pathway to later offending.

Last, research on what leads to specific aggressive behaviors, which in turn may lead to specific crimes, could allow for the development of preventative methods and screening tools for juveniles in the system. These preventative methods and/or screening tools could be frequently used in schools to easily identify students at risk of maltreatment. As we now know, exposure to violence early in life puts victims at risk for engaging in later violent behavior (Gover, 2002). While we also know that specific childhood maltreatment experiences can lead to specific offending behaviors such as violent and sexual crimes (van der Put et al., 2015), a better understanding of the relationship of specific maltreatment experiences to later offending behaviors would allow professionals in the justice system to better serve and rehabilitate offenders.

REFERENCES

- Baker, L. A., Raine, A., Liu, J., & Jacobson, K. C. (2008). Differential genetic and environmental influences on reactive and proactive aggression in children. *Journal of Abnormal Child Psychology*, *36*, 1265-1278.
- Bender, K. (2010). Why do some maltreated youth become juvenile offenders? A call for further investigation and adaptation of youth services. *Children and Youth Services Review*, *32*, 466-473.
- Berzenski, S. R., & Yates, T. M. (2010). A developmental process analysis of the contribution of childhood emotional abuse to relationship violence. *Journal of Aggression, Maltreatment, & Trauma*, *19*, 180-203.
- Brendgen, M., Vitaro, F., Tremblay, R. E., & Lavoie, F. (2001) Reactive and proactive aggression: predictions to physical violence in different contexts and moderating effects of parental monitoring and caregiving behavior. *Journal of Abnormal Child Psychology*, *29*(4), 293-304.
- Bolger, K. E. & Patterson, C. J. (2001). Developmental pathways from child maltreatment to peer rejection. *Child Development*, *72*(2), 549- 568.
- Cicchetti, D. & Toth, S. L. (1995). Child maltreatment. *Annual Review of Clinical Psychology*, *1*, 409-438.
- Cima, M., Raine, A., Meesters, C., & Pompa, A. (2013). Validation of the dutch reactive proactive questionnaire (RPQ): differential correlates of reactive and proactive aggression from childhood to adulthood. *Aggressive Behavior*, *39*, 99-113.

- Crawford, E. & Wright, M. O. (2007). The impact of childhood psychological maltreatment on interpersonal schemas and subsequent experiences of relationship aggression. *Journal of Emotional Abuse, 7*(2), 93-116.
- Cuadra, L. E., Jaffe, A. E., Thomas, R., & DiLillo, D. (2014). Child maltreatment and adult criminal behavior: does criminal thinking explain the association? *Journal of Child Abuse & Neglect, 38*, 1399-1408.
- Cullerton-Sen, C., Cassidy, A. R., Murray-Close, D., Cicchetti, D., & Crick, N. R. (2008). Childhood maltreatment and the development of relational and physical aggression: The importance of a gender-informed approach. *Journal of Child Development, 79*(6), 1736-1751.
- Cummings, M., & Berkowitz, S. J. (2014). Evaluation and treatment of childhood physical abuse and neglect: a review. *Curr Psychiatry Rep, 16*, 429 – 439.
- Day, M.D., Bream, L. A., & Pal, A. (1992). Proactive and reactive aggressions: An analysis of subtypes based on teachers perceptions. *Journal of Clinical Child Psychology, 21*(3), 210 – 217. DOI: 10.1207/s15374424jccp2103_2
- Ellenbough, S., Trocme, N., Wekerle, C., & McLeod, K. (2015). An exploratory study of physical abuse-related shame, guilt, and blame in a sample of youth receiving child protective services: links to maltreatment, anger, and aggression. *Journal of Aggression, Maltreatment, & Trauma, 24*(5), 532-551.
- English, D. J., Graham, J. C., Litrownik, A. J., Everson, M., & Bangdiwala, S. I. (2005). Defining maltreatment chronicity: Are there differences in child outcomes? *Journal of Child Abuse & Neglect, 575-595*.

- Feiring, C., Cleland, C. M., & Simon, V. A. (2010). Abuse-specific self-schemas and self-functioning: A prospective study of sexually abused youth. *Journal of Clinical Adolescent Psychology, 39*(1), 35-50.
- Garrido, E. F., Taussig, H. N., Culhane, S. E., & Raviv, T. (2015). Attention problems mediate the association between severity of physical abuse and aggressive behavior in a sample of maltreated early adolescents. *Journal of Early Adolescence, 31*(5), 714-734.
- Gover, A. R. (2002). The effects of child maltreatment on violent offending among institutionalized youth. *Violence and Victims, 17*(6), 655-668.
- Hassan, M. A., Gary, F., Killion, C., Lewin, L., & Totten, V. (2015). Patterns of sexual abuse among children: victims' and perpetrators' characteristics. *Journal of Aggression, Maltreatment, & Trauma, 24*(4), 400-418.
- Hoeve, M., Colins, O. F., Mulder, E. A., Loeber, R., Stams, G. J. J. M., & Vermeiren, R. J. M. (2015). The association between childhood maltreatment, mental health problems, and aggression in justice-involved boys. *Aggressive Behavior, 41*, 488-501.
- Hopfinger, L., Berking, M., Bockting, C. L. H., & Ebert, D. D. (2016). Emotion regulation mediates the effect of childhood trauma on depression. *Journal of Effective Disorders, 198*, 189-197.
- Hubbard, J. A., McAuliffe, M. D., Morrow, M. T., & Romano, L. J. (2010). Reactive and proactive aggression in childhood and adolescence: Precursors, outcomes, processes, experiences, and measurement. *Journal of Personality, 78*(1), 95-118.
- Jackson, Y., Gabrielli, J., Fleming, K., Tunno, A. M., & Makanui, K. (2014). Untangling the relative contribution of maltreatment severity and frequency to type of behavioral outcome in foster youth. *Child Abuse & Neglect, 38*, 1147-1159.

- Kempes, M., Matthys, W., de Vries, H., & van Engeland, H. (2005). Reactive and proactive aggression in children: a review of theory, findings and the relevance for child and adolescent psychiatry. *Eur Child Adolescent Psychiatry, 14*(1), 11-19.
- Lansford, J. E., Dodge, K. A., Perrir, G.S., Bates, J.E., Crozier, J., & Kaplow, J. (2002). A 12-year prospective study of the long-term effects of early child physical maltreatment on psychological, behavioral, and academic problems in adolescence. *American Medical Association, 824-830*.
- Maguire, S. A., Williams, B., Naughton, A. M., Cowley, L. E., Tempest, V., Mann, M. K., Teague, M., & Kemp, A. M. (2014). A systematic review of the emotional, behavioural, and cognitive features exhibited by school-aged children experiencing neglect or emotional abuse. *Child: care, health, and development, 41*, 641-653.
- Maniglio, R. (2015). Significance, nature, and direction of the association between child sexual abuse and conduct disorder: A systematic review. *Trauma, Violence, & Abuse, 16*(3), 241-257.
- Manly, J. T., Cicchetti, D., & Barnett, D. (1994). The impact of subtype, frequency, chronicity, and severity of child maltreatment on social competence and behavior problems. *Development and Psychopathology, 6*, 121-143.
- Manly, J. T., Kim, J. E., Rogosch, F. A., & Cicchetti, D. (2001). Dimensions of child maltreatment and children's adjustment: Contributions of developmental timing and subtype. *Development and Psychopathology, 13*, 759-782.
- Mersky, J. P., & Reynolds, A. J. (2007). Child maltreatment and violent delinquency: Disentangling main effects and subgroup effects. *Child Maltreatment, 12*(3), 246-258.

- Messan-Moore, T. L., & Brown, A. L. (2004). Child treatment and perceived family environment as risk factor for adult rape: is child sexual abuse the most salient experience? *Journal of Child Abuse & Neglect, 28*, 1019-1034.
- Miller, J. A., Williams, S. J., & McCoy, E. L.B. (2004). Using multimodal functional behavior assessment to inform treatment selection for children with either emotional disturbance or social maladjustment. *Psychology in the Schools, 41*(8), 867-877.
- National Children's Alliance Statistics. (2015). Retrieved from <http://www.nationalchildrensalliance.org>
- Patterson, G. R., & Stouthamer-Loeber, M. (1984). The correlation of family management practices and delinquency. *Child Development, 55*, 1299-1307.
- Pechtel, P., Lyons-Ruth, K., Anderson, C. M., & Teicher, M.H. (2014). Sensitive periods of amygdala development: the role of maltreatment in preadolescence. *NeuroImage, 97*, 236-244.
- Prather, W., & Golden, J. (2009). Learning and thinking: a behavioral treatise on abuse and antisocial behavior in young criminal offenders. *International Journal of Behavioral Consultation and Therapy, 5*(1), 75-105.
- Rogosch, F. A., Cicchetti, D., & Aber, J. L. (1995). The role of child maltreatment in early deviations in cognitive and affective processing abilities and later peer relationship problems. *Development and Psychopathology, 7*, 591-609.
- Shackman, J. E., & Pollack, S. D. (2014). Impact of physical maltreatment on the regulation of negative affect and aggression. *Development and Psychopathology, 26*, 1021-1033.

- Shaffer, A., Yates, T. M., & Egeland, B. R. (2009). The relation of emotional maltreatment to early adolescent competence: developmental processes in a prospective study. *Child Abuse & Neglect, 33*, 36-44.
- Slep, A. M. S., Heyman, R. E., & Snarr, J. D. (2011). Child emotional aggression and abuse: Definitions and prevalence. *Journal of Child Abuse & Neglect, 35*, 783-796.
- Smeets, K. C., Oostermeijer, S., Lappenschaar, M., Cohn, M., van der Meer, J. M. J., Pompa, A., ... Buitelaar, J. K. (2017). Are proactive and reactive aggression meaningful distinctions in adolescents? A variable- and person-based approach. *Abnormal Child Psychology, 45*(1), 1 – 14.
- Spinazzola, J., Hodgson, H., Ford, J. D., Briggs, E. C., Lian, L., Layne, C. M., Pynoos, R., & Stolback, B. (2014). Unseen wounds: the contribution of psychological maltreatment to child and adolescent mental health and risk outcomes. *Psychological Trauma: Theory, Research, and Practice, 6*(1), 18-28.
- Stevenson, M. C. (2009). Perceptions of juvenile offenders who were abused as children. *Journal of Aggression, Maltreatment & Trauma, 18*, 331-349.
- Swanston, H. Y., Parkinson, P. N., O'Toole, B. I., Plunkett, A. M., Shrimpton, S., & Oates, R. K. (2003). Juvenile crime, aggression and delinquency after sexual abuse. *Brit. J. Criminol., 43*, 729-749.
- Thombs, B. D., Lewis, C., Bernstein, D. P., Medrano, M. A., & Hatch, J. P. (2007). An evaluation of the measurement equivalence of the Childhood Trauma Questionnaire-Short Form across gender and race in a sample of drug-abusing adults. *Journal of Psychosomatic Research, 63*, 391-398.

- Thompson, R., & Tabone, J. K. (2010). The impact of early alleged maltreatment on behavioral trajectories. *Child Abuse & Neglect, 34*, 907-916.
- Tremblay, C., Herbert, M., & Piche, C. (1999). Coping strategies and social support as mediators of consequences in child sexual abuse victims. *Child Abuse and Neglect, 23*(9), 929-945.
- Van der Put, C. E., Lanctot, N., de Ruiter, C., & van Vugt, E. (2015). Child maltreatment among boy and girl probationers: Does type of maltreatment make a difference in offending behavior and psychosocial problems? *Child Abuse and Neglect, 46*, 142-151.
- Young, J.C., & Widom, C. S. (2013). Long-term effects of child abuse and neglect on emotion processing in adulthood. *Child Abuse and Neglect, 38*, 1369-1381.
- Zurbriggen, E. L., Gobin, R. L., & Freyd, J. J. (2010). Childhood emotional abuse predicts late adolescent sexual aggression perpetration and victimization. *Journal of Aggression, Maltreatment, & Trauma, 19*, 204-223.

APPENDIX: IRB APPROVAL LETTER



EAST CAROLINA UNIVERSITY

University & Medical Center Institutional Review Board Office

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Notification of Continuing Review Approval: Expedited

From: Social/Behavioral IRB
To: [Emma-Catherine Scott](#)
CC: [Jeannie Golden](#)
[Emma-Catherine Scott](#)
Date: 9/12/2016
Re: [CR00004873](#)
[UMCIRB 14-001140](#)
Biological, Emotional, and Neurocognitive Effects of Early Adverse Experiences

The continuing review of your expedited study was approved. Approval of the study and any consent form(s) is for the period of 9/11/2016 to 9/10/2017. This research study is eligible for review under expedited category #8C.

Changes to this approved research may not be initiated without UMCIRB review except when necessary to eliminate an apparent immediate hazard to the participant. All unanticipated problems involving risks to participants and others must be promptly reported to the UMCIRB. The investigator must submit a continuing review/closure application to the UMCIRB prior to the date of study expiration. The Investigator must adhere to all reporting requirements for this study.

Approved consent documents with the IRB approval date stamped on the document should be used to consent participants (consent documents with the IRB approval date stamp are found under the Documents tab in the study workspace).

The approval includes the following items:

Document	Description
Application for Research with Probationers(0.03)	Study Protocol or Grant Application
BEEF(0.03)	Surveys and Questionnaires
Caregiver demographics & maltreatment survey.docx(0.03)	Surveys and Questionnaires
Demographic survey.docx(0.02)	Surveys and Questionnaires
Dissertation Proposal revised 9-26-15.docx(0.04)	Study Protocol or Grant Application
Informed Consent for Probationers.doc(0.05)	Consent Forms
Informed Consent Young Adult.doc(0.08)	Consent Forms
Inventory of CU Traits - Self report (page 1)(0.04)	Surveys and Questionnaires
Inventory of CU Traits - Self report (page 2)(0.01)	Surveys and Questionnaires
letter of offender willingness to participate.docx(0.01)	Additional Items

Document	Description
Life Event Stress Inventory.docx(0.02)	Surveys and Questionnaires
Reactive Proactive Questionnaire (RPQ).docx(0.01)	Surveys and Questionnaires
Standardized directions(0.02)	Additional Items
TriarchicPsychopathyMeasure (TPM).doc(0.01)	Surveys and Questionnaires

The Chairperson (or designee) does not have a potential for conflict of interest on this study.

IRB00000705 East Carolina U IRB #1 (Biomedical) IORG0000418
IRB00003781 East Carolina U IRB #2 (Behavioral/SS) IORG0000418

