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The Effects of Child Maltreatment on the Likelihood of Committing Violence in at-Risk Youth: A Family Systems, Trauma Theory, and Need to Belong Framework

Roshni Trehan Ladny

FLORIDA STATE UNIVERSITY
COLLEGE OF CRIMINOLOGY AND CRIMINAL JUSTICE

THE EFFECTS OF CHILD MALTREATMENT ON THE LIKELIHOOD OF COMMITTING
VIOLENCE IN AT-RISK YOUTH: A FAMILY SYSTEMS, TRAUMA THEORY, AND
NEED TO BELONG FRAMEWORK

By

ROSHNI TREHAN LADNY

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The members of the supervisory committee were:

William Bales

Professor Directing Dissertation

Lenore McWey

University Representative

Eric Stewart

Committee Member

Jillian Turanovic

Committee Member

The Graduate School has verified and approved the above-named committee members and certifies that the dissertation has been approved in accordance with university requirements.

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ABSTRACT

One of the most concerning effects of child maltreatment that has been of interest to researchers and practitioners over the past few decades is the documented increased risk of victimized children engaging in violence during childhood and adulthood. Despite the intergenerational transmission of violence being empirically documented in numerous studies, the influence of maltreatment typology on this continuity of violence is still in the early stages of research. Hence, limited information exists as to which types of maltreatment are the most likely to lead to violence and what factors moderate the relationship between childhood victimization and an increased risk of violence and aggressive behavior, that can be modified in treatment programs. Concepts from family systems, trauma, and need to belong theories are integrated to provide a framework explaining why the type of maltreatment and a lack of family belonging may predict the likelihood to engage in violence. Using a sample of juveniles leaving the Florida department of juvenile justice community supervision program between the years of 2010 and 2011 (n= 6,537), this study examines the effect of four different types of maltreatment on the likelihood of commission of violent behavior. Findings reveal that maltreated children are less likely to have family belonging than non-maltreated children and are more likely to have committed a violent offense. Specifically, children who have experienced sexual abuse in childhood are at the greatest risk for being court ordered to community supervision for a violent offense, followed by children who have experienced multiple types of maltreatment. While children with family belonging are less likely to commit violence, the results do not suggest that family belonging moderates the relationship between maltreatment and the propensity to commit violence

CHAPTER 1

INTRODUCTION

A plethora of studies exist demonstrating the numerous negative social, physical, and mental health outcomes for children who have experienced neglect, abuse, or other types of harmful behaviors from their parents, caregivers, and other family members. (Widom, 1989; Huth-Bocks, Levendosky & Semel, 2001; Heyman & Slep, 2002; Kendall-Tackett et al, 2002; Jaffe, Wolf & Campbell, 2012). These harmful behaviors directed towards children are collectively known as child maltreatment. The term child maltreatment describes a variety of abusive acts directed towards people under the age of 18 including, but not limited to: “physical abuse, emotional abuse, sexual abuse, neglect, negligent treatment and exploitation or any other behavior resulting in actual or potential harm to the child's health, survival, development or dignity in the context of a relationship of responsibility, trust or power” (World Health Organization, 2016 pg. 1).

One of the most concerning potential effects of child maltreatment that has been of interest to researchers and practitioners over the past few decades is the documented increased risk of these victimized children engaging in aggressive and violent acts in childhood and adulthood, hence, becoming offenders themselves (Widom, 1989; Widom & Wilson, 2001; Alexander, 2015). This transmission of abusive and violent behavior from one generation to the next generation is known as the intergenerational transmission of violence, or, the cycle of violence, whereby children who experience violence are at an increased risk of committing violence towards others not only in childhood, but through adulthood (Kaufman & Zigler, 1987; Widom, 1989). Given that the cycle of violence is a result of a complex interaction between various risk and protective factors, researchers are still attempting to understand why only a

select portion of maltreated children engage in violence (Widom & Wilson, 2001; Higgins, 2004; Alexander, 2015). In gaining additional insight into the mechanisms of the continuity and discontinuity of violence, researchers and practitioners now recognize that not all types of maltreatment are equal, and therefore, children with certain types of victimization experiences may be at a greater risk for the commission of violence than other types of maltreated children. While a number of studies have documented that a variety of social and individual factors can increase the risk of abused and neglected children engaging in violence (Lisak, Hopper & Song, 1996; Caspi et al, 2002; Wright & Fagan, 2013) there is a limited amount of research that identifies family-based factors that can be modified within treatment and prevention programs to decrease the risk of maltreated children committing violence. One such understudied factor is a child's perception of family belonging, which is how well children feel that they fit in and connect with their family.

This study will contribute to the existing literature on cycles of violence by integrating concepts from family systems theory, trauma theory and theories on the importance of belonging to one's family or social group (i.e., known in the literature as need to belong theory) to offer a novel explanation of why certain maltreated children are more likely to become a part of the cycle of violence. Currently, the predominant explanations of why the intergenerational transmission of violence occurs are social learning attachment, transactional, and biological theories (Dodge, Bates & Pettit, 1990; Black, 2009; Alexander, 2015). However, while contributing extremely valuable information to the cycle of violence literature, these theories are not completely able to explain the discontinuity of violence (i.e., why the majority of maltreated children do engage in violent behavior in childhood or adulthood) or the various nuances that

characterizes the family environments of maltreated children who are at an increased risk for engaging in aggressive behavior (Alexander, 2015; Schelbe & Griebner, 2017)

The current study will help explain these less understood nuances of the cycle of violence, by utilizing existing concepts from trauma theory and theories of belonging to integrate them into a novel framework in order to examine if the likelihood of commission of violence depends on the *type* of maltreatment a child experience. Currently, there is a deficiency of studies that use concepts from these theories to examine if different forms of maltreatment have varying effects on a child's likelihood to commit violence and why majority of maltreated youth do not engage in violent or aggressive behavior (Rosen, Bartle-Haring & Stith, 2001; Clemmons et al, 2007; Alexander, 2015; Bland, Lambie & Best, 2018). Additionally concepts from family systems theory and need to belong theory will be integrated to examine if family belonging in particular can reduce the effects of maltreatment on the likelihood of committing violent behavior. Although this study integrates concepts from the aforementioned theories to explain why family attachments and belonging are important for maltreated youth in the prevention of violence, frameworks such as social control and attachment theories offer insightful explanations as to why positive family relationships may influence the cycle of violence among abused children.

Abused and neglected children are often treated the same in terms of what types of therapeutic intervention they receive to help them cope with symptoms of trauma from their victimization (Lipovsky et al, 1998; Sweson et al, 2010). However, if each type of victimization experience has a different effect on the likelihood of violence (e.g., some types may be more likely to result in depression and internalizing behaviors while other types may be more likely to result in externalizing and aggressive behavior), then treatment for each child

should be catered to address those different symptoms (Taillieu et al, 2016; Bland, Lambie & Best, 2018). The findings from research initiative will be important to the field of family violence research because it will provide knowledge of which types of child maltreatment are the most closely linked with violent and aggressive behavior. Thus, the findings can be used by practitioners to target select maltreated kids for more intensive intervention to prevent violence. Additionally, if family belonging is indeed an important factor linked to the likelihood of the transmission of violence and maltreatment, therapeutic programs can be modified to include a component on developing and/or improving family belonging between maltreated children and their family. Despite the turmoil and broken bonds that often exist in families where violence and abuse occur (Repetti, Taylor & Seeman, 2002; Swenson, 2010; Theobald, Farrington & Piquero, 2013), there is still room to help improve the relationship between the maltreated children and their family so the children do feel a sense of belonging.

The cycle of violence is a complex process that requires an integrated framework to help explain why childhood maltreatment is significantly linked to a propensity to commit violent or aggressive behaviors (Higgins, 2001; Bevans & Higgins, 2002; Low et al 2017). While the current maltreatment and cycle of violence literature provides a number of studies empirically illustrating the transmission of violence (Kaufman & Ziegler, 1987; Widom & Wilson, 2001; Ehrensaft et al, 2003; Black, Sussman & Unger, 2010; Low et al, 2017) , there are significant gaps in the body of research demonstrated by a lack of studies identifying how typology of maltreatment and modifiable family based variables can moderate the relationship between victimization and likelihood of commission of violence (Higgins & McCabe, 2001; Herrenkohl, 2009). This current study will add a unique contribution to the existing body of research on the intergenerational transmission of violence by using officially verified data on juveniles entering

community supervision for the first time, to examine if violent behavior is indeed dependent on the type of maltreatment a child experiences, and if family belonging is a key factor that buffers the effect of childhood victimization on the likelihood that the child will engage in violence. To shed light on this complex relationship between maltreatment and violence, and thus help fill these research gaps, the following research objectives will be pursued: 1. Empirically assessing the effect of a history of any type of child maltreatment on the likelihood to engage in violent behavior, 2. Empirically determining if family belonging moderates the relationship between history of child maltreatment and likelihood of engaging in violent behavior 3. Empirically examining if the type of child maltreatment experienced by youth is related to how much family belonging he or she feels, and 4. Empirically examining if the type of maltreatment experienced by youth influences the likelihood of commission of violent behavior

The first chapter will begin by briefly introducing the concept of the intergenerational transmission of violence followed by an introduction to what constitutes child maltreatment, why it can be traumatic for current and future generations, and the most common theories used to explain why cycles of violence exist. Next, a discussion will detail the different types of maltreatment children experience and why it is important to understand the differences between the maltreatment types to properly address the problem of child victimization. A statement of the research problem will be presented followed by an explanation of how the current study will contribute to the field of child maltreatment research as well as aid in the development of novel treatment programs for children experiencing family mistreatment.

The second chapter will review the most relevant research findings on the relationship between child maltreatment and violence, while the third chapter will review the importance of family belonging for children. Following the literature review, a discussion of gaps in the

research that this current study can help fill will be presented. The specific research questions this study will answer will then be discussed followed by an explanation of the methods and data used to answer the research questions and the results from the data analyses. Finally, the results will be followed by a discussion of the limitations of this study and recommendations for future research and ways to enhance programs aimed at treating trauma in maltreated children.

Introducing the Topic: Cycles of Violence and Child Maltreatment

The term intergenerational transmission of violence, or cycle of violence, was created to explain how children who experience abuse are more likely to become adult perpetrators of violence towards their offspring and intimate partners. This perspective has been expanded to explain how a variety of childhood maltreatment and family violence experiences, such as sexual abuse, witnessing violence, experiencing physical violence, and nonviolent victimization can lead to the perpetration of violence in childhood (immediate effects), later in adulthood (distant effects), and can be committed towards people outside of the family as well (Widom, 2000; Heyman & Slep, 2002). Identifying the risk and protective factors that moderate the relationship between maltreatment and violence and pinpointing the different mechanism that mediate the relationship between maltreatment and violence are central to current intergenerational transmission of violence research efforts. To understand the research focus on identifying ways to break the cycle of violence, it is first important to understand what constitutes child maltreatment and family violence.

Family violence is an umbrella term to encompass various forms of behaviors (not all which are actually physically violent), such as psychological violence, sexual violence, emotional violence, and physical violence that occur within the context of one's family and home. Thus, the term family violence also refers to child maltreatment and domestic violence.

Although used interchangeably in the literature, domestic violence, family violence, and child maltreatment have key differences. Domestic violence is considered to be any physical, emotional, economical, or sexual abuse, mistreatment or neglect that a child or adult experiences from a cohabitating individual (Straus & Gelles, 1990) while family violence although the same in action, would be violence between family members or intimate partners specifically (i.e., not between roommates). Although the term domestic violence was initially referred to as wife abuse and then as intimate partner violence, that definition was changed to recognize that wives are not the only ones who can fall victim to domestic violence (Tjaden & Thoenes, 2000). All 50 states have re-worded their definition of domestic violence to recognize that victims of such abuse and/or violence can include spouses, family members such as siblings and grandparents, intimate partners living with each other, and any other cohabitants such as roommates (NCJFCJ.org).

Although researchers and practitioners have varying ideas of how family violence should be defined, the most commonly accepted definition of family violence is “Family members acts of omission or commission resulting in the physical abuse, sexual abuse, emotional abuse, neglect, or other forms of maltreatment that hamper individuals’ healthy development” (Levesque, 2001 pg. 13). This definition is very similar to the definition of child maltreatment but is used to describe harmful behavior towards any person within the home, adult or child. This definition highlights that any behavior in the family that results in any type of harm to an individual, adult or child, such as the negative consequences associated with exposure to domestic violence or neglect, can be labeled as family violence. Although we have more concrete definitions of family violence, our growing understanding of the complexities associated with childhood family victimization and the numerous factors that contribute to maladaptive and violent behavior make it a challenge to identify the specific reasons for why

child maltreatment and family violence occur. However, a number of psychological, sociological and biological theories contain concepts and assumptions that explain why child maltreatment happens and why the process of the intergenerational transmission of violence occurs (Gelles, 2007; Abbassi & Aslinia, 2010; Beaver & Walsh, 2011; Alexander, 2015). Since a review of theories explaining the cycle of violence is more relevant to this study than theoretical explanations of maltreatment, a brief overview of theoretical explanations of maltreatment to simply illustrate the complexity of the potential causes of abuse and neglect.

While some theories are better at offering explanations of why a broad range of family violence occurs, while others are more effective at explaining child maltreatment or intimate partner violence specifically (Gelles, 2007). For example, social learning theory has empirical support in explaining cycles of physical child abuse perpetration (Kaufman & Zigler, 1989; Abbassi & Aslinia, 2010) while family systems and attachment theories explain the role of family relationships in increasing the risk of violence occurring in the family (Alexander, 2015). Biological theories stipulate that genetic propensity towards violence in perpetrators interacts with certain environmental factors that can increase the risk that they will engage in a variety of violent behavior, including child abuse (Beaver & Walsh, 2011). On the other hand, transactional and ecological theories are better at explaining a variety of maltreatment within the family and the higher rates of abuse found in children with emotional handicaps and/or learning disabilities (Sullivan & Knutson, 2000; Hibbard & Desch, 2007; Gelles, 2007). Although these theories (some more than others) can help shed light on the causes and mechanisms of child abuse, the field of child maltreatment research is still in the midst of theoretical and methodological development due to the conceptual challenges in understanding what constitutes child abuse and neglect, the numerous factors that are associated with violent behavior, and the

extensive variation in how child maltreatment and family violence develop and are sustained. Moreover, while there are predictive factors that may characterize families at the highest risk for experiencing maltreatment and other types of family violence, there is not one type of family in which such violence occurs. While families suffering from poverty are at a greater risk of experiencing such violence, sometimes it is the middle class and upper middle-class families in which violence occurs that remain hidden, and as a result, less likely to get the help they need (Haselschwerdt & Hardesty, 2016). Additionally, since culture plays a role in the development of family violence, families with certain cultural backgrounds may also be less likely to experience an intervention due to the social views that either support or normalize family violence (Straus, Kantor & Moore, 1997). These challenges also make it quite difficult to assess the prevalence of victimized children, and thus difficult to understand the true extent of the damage violence can have on individuals, families, communities and future generations (Saunders, 1991; Barnett, Miller-Perrin & Perrin, 2005). None the less, existing research has brought attention to the various physical and emotional damages maltreated children experience (Barnett, Miller-Perrin & Perrin, 2005).

Child Maltreatment as a Health Concern

Until the 1960's, researchers, justice system officials, and practitioners were not fully aware of many of the factors that contributed to occurrence of child abuse and family violence, nor were they aware of the numerous negative health consequences associated with such victimization (Wies, 2006). Hence, limited help existed for victims of maltreatment and family violence (Pleck, 1987; Wies, 2006). With a growth in focus on women's rights in the 1960's, came an increase in the reporting of intimate partner violence and other types of family victimization (Pleck, 1987). This lead researchers, practitioners, and policymakers to truly see

the enormity of the problem of family violence, particularly child maltreatment, and the importance of continuing efforts to develop an integrated theoretical framework to explain family violence (Pleck, 1987). Unfortunately, being victimized by family members and exposed to family violence can be more traumatic in certain cases than exposure to other types of violence, such as violence that occurs outside of the home such as fights between peers (Garbarino, 2001). This is in part due to an innate expectation of safety and security in one's home and protection and care from family members, especially parental figures (Cummings & Davies, 2011; Alexander, 2015). The damaging effects of abuse in the home is evidenced by research indicating that domestic and family violence is one of the leading causes of children running away and becoming homeless (Spinney & Harper, 2013).

Children who experience violence and abuse within their homes are susceptible to a host of additional aversive experiences (Finkelhor, 1990; Baldry, 2003; Whitfield et al, 2003). Abusive behaviors towards children can significantly impair their mental, physical and emotional development as demonstrated by research showing that on average, maltreated children are more likely to suffer from physical health problems, mental health problems and emotional disturbances, as well as cognitive issues than non-maltreated children (Kendall-Tackett, 2000; Gilbert et al, 2009; Norman et al, 2012). These negative outcomes essentially leave children vulnerable to even more problems such as educational and relationship difficulties.

In addition to the devastating emotional and mental health consequences among child victims of family mistreatment, our understanding of the intergenerational transmission process of violence indicates a potential for the effects of maltreatment and trauma to be carried into later childhood and adulthood, and potentially passed on to future generations (Widom, 1989; Widom & Maxfield, 2001; Heyman & Slep, 2002; Alexander, 2015). The intergenerational transmission

of violence perspective is the dominant framework to explain why children who are exposed to violence are at a greater risk of engaging in violence not only in childhood, but in adulthood as well (Rivera & Widom, 1990; Ehrensaft et al, 2003; Whitfield et al, 2003; Thornberry, Freeman-Gallant & Lovegrove, 2009). The next section first provides an explanation of why childhood maltreatment can lead to an increased risk of violence perpetration and then illustrates the gaps in the child maltreatment and cycle of violence literature that the current study addresses.

Statement of the Problem

Long-Term Consequences of Childhood Maltreatment: The Cycle of Violence

The theoretical roots of the intergenerational transmission of violence perspective can be traced back to a clinical note by Curtis, 1963 titled “Violence Breeds Violence-Perhaps”, in which Curtis states that victimized children would “become tomorrow’s murderers and perpetrators of other crimes of violence, if they survive” (Curtis, 1963 pg. 386). Curtis was not alone in this line of thought, however. At that time researchers such as Bandura were exploring how children learn and mimic behavior, which lead to studies on short term behavioral effects on children exposed to violent film (Bandura, Ross & Ross, 1961). This was followed by additional studies in the areas of psychology and sociology examining the effects of being violently victimized in childhood on subsequent aggression and violence (Bandura & Huston, 1961; Straus, 1991; Berlin et al, 2001; Widom & Wilson, 2015). Hence, researchers became focused not just on the negative health consequences associated with violence exposure, but the potential for children to internalize and learn violent behavior through observation, punishment, and reinforcement of behaviors (Owens & Straus, 1975; Bandura, 1977; Bandura, 1978).

Although the intergenerational transmission of violence perspective is used to explain the general relationship between exposure to violence and subsequent aggressive or violent behavior

(Widom, 1989), it is more commonly used to explain how a child's exposure to violence within their family (i.e. witnessing intimate partner violence or being a victim of parent to child violence) can increase the likelihood of them committing violence towards their own children and spouses in adulthood. This focus on familial violence is a natural progression from earlier work indicating that children who copy violent behavior, often do so after being physically abused or witnessing violence committed by a parent. (Bandura, Ross, & Ross, 1961; Silver, Dublin, & Laurie, 1969). These findings are not surprising, as families are considered to be the bedrock upon which a child develops socially, emotionally, mentally, and physically (Bowlby, 1973; Alexander 2015).

While the limitations of each predominant theory that explains the intergenerational transmission of violence will be discussed in further detail in chapter 2, a brief overview of these limitations is necessary to highlight several of the gaps in the literature on the link between child maltreatment and increased risk of violence perpetration. Social learning, biological, attachment and ecological theories are the primary frameworks that have been used to explain the intergenerational transmission of violence (Belsky, 1980; Hines & Saudino, 2002; Sellers, Cochran, & Branch, 2005; Beaver, 2013; Alexander, 2015). While each of these theories effectively explain certain aspects of how childhood maltreatment can increase the likelihood of aggression or violence, there are limitations in their explanatory power (Alexander, 2015; Schelbe & Geiger, 2017). For example, social learning theory is limited in explaining why nonviolent maltreatment such as neglect is also a risk factor for violent behavior (Alexander, 2015; Widom & Maxfield 2001), while attachment theory is not effectively able to explain why exposure to family violence not involving parents, can increase the likelihood of violence commission (Schelbe & Geiger, 2017). Although there is strong support indicating that

biological factors play a role in the link between childhood maltreatment and violence perpetration, these factors are primarily static factors, thus helpful for identifying at families at risk for maltreatment, but not as helpful in developing programs to help treat victimized children. Critics of ecological theories argue that the ecological framework is extremely difficult to test in cycle of violence research (Schelbe & Geiger, 2017). Additionally, it is better suited for explaining why maltreatment in one generation can be linked to maltreatment in the next generation, as opposed to commission of a variety of violent behavior (Belsky, 1984)

Given the limitations of each of the predominant theories of the cycle of violence, additional theories are needed through which all of the following four key questions can be answered: 1. What family based modifiable variables moderate the process of violence transmission? 2. Why do the majority of maltreated children not engage in violence (discontinuity of violence)? 3. Why are certain types of maltreatment more closely linked with violent behavior than other types? and 4: Why is victimization that is not violent in nature (e.g., neglect) also empirically linked to aggression and violence? (Alexander, 2015; Bland, Lambie & Best, 2018). Being able to identify modifiable family-based risk and/or protective factors that moderate the relationship between each type of childhood victimization and aversive outcomes like violence, is the first step in adding additional therapeutic components to treatment programs for children that have experienced maltreatment. The deficiency of such modifiable variables identified that moderate the relationship between maltreatment and aggressive behavior is a genuine concern, as these dynamic variables are the type of factors that treatment programs can help alter (Beech, 2002). Additionally, treatment programs to combat violent behavior will be more effective when implemented early on in the rehabilitation process for maltreated children (Farrington, 1989; Matjasko, 2012). There is empirical evidence suggesting that positive family

dynamics and caregiving can help reduce negative consequences of a variety of child victimization experiences including family violence exposure to witnessing violence during wartime (Gorman-Smith & Tolan, 1998; Valentino et al, 2012; Turanovic & Pratt, 2015), Additionally, there is also evidence indicating that the form of maltreatment a child experiences may be related to the type and extent of problems he or she faces (Higgins, 2004). These findings collectively support the idea that by identifying the *type* of maltreated child who is at the greatest risk for violence commission and for whom certain family social process may matter the most, more nuanced and individualized treatment programs can be developed to help reduce the impact of maltreatment on likelihood to engage in violence.

Though the probability of concepts from a single theory being able to provide answers to all of the above questions is unlikely, this limitation does indicate that an integrated framework is needed to explain why maltreatment is associated with an increased risk for aggressive behavior in childhood and adulthood (Marshall et al, 2011; Widom & Wilson, 2015; Schelbe & Giegler, 2017). Hence any additional theories that could potentially answer these key questions regarding these nuances of the process of violence transmission are worth exploring. Trauma theory, family systems theory, and need to belong theory are three theories that collectively provide insight into why the majority of children who are exposed to family victimization do not engage in violence, and why certain forms of maltreatment may be more closely linked to the violence commission (Murray, 2006; Alexander, 2015). Furthermore, their concepts can elucidate on how healthy family social processes, like family belonging, are important for children, especially maltreated children (Mersky & Reynolds, 2007; Ascher et al, 2015). While other theories such as social learning, social control, attachment, and strain theories all provide valid explanations for why childhood maltreatment is linked to a greater propensity to commit violence, the current

study focuses on integrating less utilized theories within the cycle of violence research to offer another avenue of explanation of the links among maltreatment, family bonds, and violent behavior.

Addressing the Problem

This next section first provides a brief overview of Trauma Theory to establish the rationale for why it is important to analyze the effects of different types of child maltreatment on various mental and emotional health outcomes, as well as the importance of conceptualizing aggressive behavior as a potential symptom of trauma. A discussion on family systems theory and need to belong theory follows, along with rationale supporting the hypothesis that a child's sense of family belonging is important for his or her mental and emotional health, and thus may be particularly important for preventing maltreated children from engaging in violence.

Why Types of Maltreatment Matter in Understanding the Discontinuity of Violence

Trauma theory is an interdisciplinary theory stating that mental and emotional problems occur when a person's internal and external resources are not sufficient to cope with an external threat, and as a result, a person's thoughts, memories, feelings, and behaviors are profoundly altered by the traumatic experience (Van der Kolk, 1989; Cicchetti & Toth, 1997). Traumatic experiences can result in different symptoms depending on the individual person. Therefore, these symptoms vary based on individual biological makeup, personality, and coping mechanisms as well as environmental and social factors (Heim et al, 2001; Hooberman, 2010). Thus, in line with trauma theory, the nature of a child's maltreatment experience can influence the type of symptoms he or she experiences. Given the various detrimental effects of maltreatment on children's mental and emotional health (Koenen et al, 2003; Teicher & Sampson, 2016), the development of violent behavior and other aversive behaviors and feelings

in child victims of family violence can be understood in part through the lenses of Trauma Theory (Graham-Bermann, 1998; Alexander, 2015).

It is crucial for researchers to examine how variation in characteristics of the entire child victimization experience, including non-violent maltreatment, may be associated with the variation of trauma symptoms in children (Higgins & McCabe, 2001). This recommendation stems from concepts in trauma theory that emphasize how characteristics of traumatic events can be influential in contributing to behavioral outcomes, and that different types of trauma can produce different types of symptoms (Van der Kolk, 1989). Three primary characteristics that have empirically been shown to moderate the relationship between child maltreatment and subsequent negative mental and emotional health outcomes include the nature of relationship between perpetrator and victim, the severity and frequency of victimization, and the type of victimization a child experiences (O’Keefe, 1994; Starling, Holden & Jenny, 1995; Mersky & Reynolds, 2007; Kiser, 2014). The type of relationship a child has to his or her perpetrator can influence how a child perceives their maltreatment experience (Ullman, 2007; Kiser, 2014). Children may interpret violence or abuse from one family member differently than the interpret violence from another family member. The prime example of this concept is illustrated by a case in which a child may be more likely to rationalize experiencing emotional neglect at the hands of a sibling compared to experiencing emotional neglect from his or her parents. Therefore, a child may perceive victimization from parents to be more traumatic than victimization from siblings. Likewise, the severity and frequency of victimization can also predict the severity of mental health issues the child may exhibit in response to the maltreatment (Manly, Cicchetti & Barnett, 1994; Cicchetti & Toth, 2005). In addition to the nature of the relationship between perpetrator and victim, and the severity of the maltreatment experience, the form of maltreatment may

influence the type of trauma symptoms a child experiences. One specific call for researchers to explore the impact of different types of child victimization/maltreatment on both child and adult behavior comes from Higgins & McCabe (2001) who noted that a limited number of studies in the child victimization literature include either more than one form of child maltreatment in the analyses or assess for multiple-type maltreatment (having been mistreated in more than one way, such as experiencing both physical and sexual abuse as opposed to one or the other). Additionally, the majority of the studies that do assess the impact of different maltreatment types or multiple-type maltreatment on negative outcomes, are adult retrospective studies. Since the Higgins and McCabe 2001 study, family violence experts have focused research efforts on the dynamics of multiple forms of child maltreatment and associated factors that precede and follow different forms of abuse (Manly, Cicchetti & Barnett, 1994; Dubner & Mota, 1999; Johnsona et al, 2002). For example, a few studies have demonstrated that sexually abused children are more likely to receive a PTSD diagnosis compared to children experiencing other forms of maltreatment (Dubner & Mota, 1999; Ackil, Van Abbema, & Bauer, 2003; Radstone, 2007). One particular study found that physical victimization was a significant predictor of child aggression and depression while witnessing violence in the family was a significant predictor of aggression, depression, *and* anger and anxiety (Johnsona et al, 2002). Likewise, some evidence points to multiple-type maltreatment experiences being associated with higher rates of violence perpetration (Kim, 2009; Herenkohl & Herenkohl, 2009), potentially due to more severe social and emotional health consequences as a result of the multiple forms of child abuse.

The study findings on the differential effects of maltreatment on childhood outcomes described above, is not surprising when one considers the nature of each type of maltreatment. For example, children with a physical abuse history may be more likely to need medical help due

to the potential for bodily injury and neurological damage in the case of head injuries, compared to children who witness domestic violence and do not sustain injuries (Dubowitz & Bennett, 2007). On the other hand, children who experience severe emotional and social neglect may require intensive social skills training and rehabilitative therapy for daily functions like properly communicating with others (Egeland, Sroufe & Erickson, 1983; Iwaniec, 2006). For treatment for abused children to be trauma and symptom specific, practitioners and researchers must have a more thorough understanding of how victimization typology influences a child's treatment needs. As emphasized by Higgins 2004, this does not mean assuming that the impact of one type of maltreatment will always produce certain behavioral outcomes or that any one type of maltreatment is worse than another type. Instead, he recommends acknowledging that since one type of maltreatment is often accompanied by additional types, specific mental health, emotional, and behavior outcomes may be more *pronounced* among children who have experienced a certain form of maltreatment or multiple-type maltreatment (Higgins, 2004; Clemmons et al, 2007).

Despite the increase in research efforts to study the impact of different types of mistreatment in childhood, there is still limited research focusing on the impact of various forms of maltreatment on *violent* behavior. As mentioned earlier, this is a gap in the research area of child maltreatment that if filled, can potentially help guide practitioners on which maltreated children to target for violence prevention programs. The next section will explain why violent behavior a manifestation of a traumatic experience for some maltreated children can be, and how the current study's focus on examining the influence of different child maltreatment types on violence fills this particular gap in the maltreatment research area.

Violence: A Possible Symptom of Traumatic Experiences

The literature on traumatic effects of family violence often categorize behavioral, mental, and emotional symptoms of trauma into two categories: internalizing symptoms and externalizing symptoms (Evans, Davies & DiLillo, 2008; Moylan et al, 2010). Internalizing symptoms are negative problematic behaviors, thoughts, and feelings that are directed inward (e.g., feeling sad or anxious) while externalizing symptoms are also negative and problematic behaviors, thoughts, and feelings, but are instead directed outwards (e.g., running away from home, underage drinking, or physical aggression). Although children who exhibit externalizing behaviors may simply be exhibiting the consequences of traumatic experiences, these children may be viewed by parents, law enforcement, and teachers as simply being a problem child or may even be wrongly diagnosed with mental health disorders like attention deficit hyperactivity disorder (Thomas & Bierman, 2006; Getahun et al, 2013). This may especially be true for children displaying aggressive behavior. Often the aggressive or violent behavior may overshadow internalizing trauma symptoms like depression or anxiety, such that parents and authority figures may fail to observe that the child is actually exhibiting symptoms of trauma (Gillikin et al, 2016).

Unfortunately, viewing any form of aggression and violence solely as criminal behavior or simply as externalizing behaviors masks the possibility that such behavior is a direct or indirect manifestation of trauma in certain child maltreatment victims. The view that aggression can be a manifestation of trauma originates from research showing that children diagnosed with PTSD may actually exhibit a marked increase in aggression, especially reactive aggression, and that anger and violence are possible symptoms of PTSD (Duncan et al, 1996; Ford et al, 2012; American Psychiatric Association, 2013; Gillikin et al, 2016). Therefore, violence exhibited in

children who are exposed to family victimization may be a specific, albeit not as common, response to trauma (Gilliken et al, 2016). Additionally, violence may be a result of more immediate outcomes associated with certain types of victimization, such as cognitive difficulties due to a brain injury in physically abused children or due to malnutrition in neglected children, both which can lead to an increased risk of committing violence (Ellis, Beaver & Wright, 2009).

The type of trauma symptoms a child exhibits may partially be a result of the type of maltreatment he or she experiences. For example, if two maltreated children are abused in different ways, and then are measured on the level of externalizing symptoms they present, both of them may score equally on the amount of externalizing behavior they exhibit. However, their overt behaviors may be qualitatively different. One type of maltreated child may exhibit a high level of externalizing non-violent behaviors (e.g., running away, underage drinking, skipping school) and low levels of externalizing violent behavior (e.g., getting into fights and making threats), while another type of maltreated child may exhibit low levels of non-violent externalizing behaviors, but high levels of externalizing violent behavior. Although including non-aggressive behavior in the measurement of externalizing behaviors makes intuitive sense, it is also important for researchers to assess for aggressive behavior separately in maltreated children in order to understand the effects of victimization on the likelihood of violence commission. The current study provides valuable new information on the varying effects of different maltreatment types on likelihood of violent behavior specifically, and thus fills a gap in the cycle of violence literature.

Applying Family Systems Theory and Need to Belong Theory to Understanding the Discontinuity of Violence

There is currently a gap in the child maltreatment and cycle of violence literature in which the impact of family belonging on the relationship between child maltreatment and violent

behavior is not well understood. While a variety of individual level and macro level theories emphasize the importance of health family relationships for positive childhood outcomes, limited research exists that focuses specifically on examining if a child's sense of family belonging can buffer the effects of maltreatment on violent behavior (Duggins et al, 2016). However, several studies do examine the impact of family belonging on aggression among children in general (Resnick et al, 1997; Brookmeyer, Fanti & Henrich, 2006), or the impact of individual elements of the family belonging construct (like parent-child relationship quality) on violence (Simmons, Robertson & Downs, 1988; Orpinas, Murray, & Kelder, 1999). The current study fills in this gap by exploring how family belonging may help reduce the chances that maltreated children will engage in violence. This next section will explain how certain concepts from family systems theory and need to belong theory can be applied to research efforts aimed at understanding continuity and discontinuity of violence. After discussing the importance of using family systems therapy to understand the effects of maltreatment on child behavior, the importance of family belonging in helping children sustain positive mental and emotional health will also be explained. Finally, an explanation of why family belonging may be important for preventing maltreated children from engaging in violence will be provided.

Family Systems Theory

Family systems theory stipulates that to understand the continuity and discontinuity in violence among maltreated children, one must understand the dynamics of the relationships between child and caregiver and between child and other family members (Murray, 2006). In line with social learning and attachment theories, family systems theory acknowledges the roles of how behavior is model and learned, and the ways in which parent-child attachments are formed in the development of violent behavior in maltreated children. However, family systems

theory focuses more on explaining how the nature of relationships among all family members influences the type of attachment a child has with each member of the family, and which family member a child is most likely to model behavior from (Marven & Stewart, 1990; Alexander, 2015). For example, if parent to parent conflict creates stress between both parents and the child who witnesses the conflict, this could lead the child to grow closer to siblings. The closeness between child and sibling can increase the chances that the child may likely to model behavior from siblings as opposed to from his or her parents. On the other hand, a child who views parent to parent conflict, but has a positive relationship with the perpetrator parent and a strained relationship with the victimized parent, may be more likely to model the perpetrator parent's behavior (Johnson, Cowan & Cowan, 1999; Alexander, 2015). In essence, the functioning of the family as a whole as well as each type of relationship within the family may be more predictive of how a child behaves rather than simply the presence of parental conflict (Johnson, Cowan & Cowan, 1999; Alexander, 2015).

The relationship between children and family members, particularly children and parental figures, is unique compared to other non-familial relationships (Lamb, 1975; West & Zimmerman, 1977; Alexander, 2015). Healthy family bonds have the power to help children cope with a variety of problems and even help reduce the impact of victimization and additional strains on a variety of aversive outcomes such as depression, suicide and drug abuse, while poor family bonds can have the opposite effect (Bergman et al, 2008; Kochanska et al, 2009; Turanovic & Pratt, 2015). This unique dynamic of a child's relationship with family members may help explain why witnessing violent acts or other types of maltreatment within the home may be perceived by the child as more traumatic than witnessing or experiencing violence outside of the home, because children have an innate expectancy of safety and protection within

their home and from their family members (Davies & Cummings, 1994; Cummings, 1998). Children especially have this expectation from their parental figures. (Maslow, 1954; Bowlby, 1984; Alexander, 2015). Often the perpetrators of home violence are the same people who are either in charge of providing day to day care for the children, involved in activities with children, or may otherwise have positive relationships with the child. This conflict may contribute to a child existing in a constant state of fear, tension, and confusion. The family systems perspective explains both direct and indirect effects of exposure to family violence, such as the direct effects of family violence exposure on emotional and mental health issues in children, and the indirect effects of family violence on the bonds between family members, and the resulting effects of altered bonds on a child's behavior (Bograd, 1984; Murray, 2006; Alexander, 2015). Hence, family systems theory views family social processes like family connectedness, belonging, and social support as crucial components in determining why a child behaves in the way he or she does (Leake, 2007). Given the importance of family social processes for maltreated children as suggested by family systems theory, and support from need to belong theory, the current study assesses for the influence of family belonging in buffering the effects of child maltreatment on violent behavior.

The Need to Belong: The Importance of Family Belonging Among Children

Family belonging is a person's sense of being valued and accepted by other members of the family system and feeling close to their family (Leake, 2007). If family belonging seems similar to other dimensions of family relationships like social support and family-child relationship quality, this is because it is indeed related to these other concepts (Resnick et al, 1997; King, Boyd & Thorsen, 2016). Social support from one's family and having a positive relationship quality with family members both contribute to an increased sense of belonging to one's family (Resnick et al, 1997). The concept of family belonging is of interest to the current

study as it is a relatively understudied family variable in the child maltreatment literature that could potentially be useful in informing treatment for family violence victims given the theoretical basis for its importance according to family systems theory.

The origins of the importance of family belonging can be traced back to Maslow's research on basic human needs. Maslow's work was devoted to how people became the best versions of themselves and thus researched people who reported themselves as content, productive, and overall satisfied with life (Maslow, 1954). He found his subjects shared common characteristics, such as a zest for life, creativity, high energy, a sense of humor *and* most importantly: meaningful relationships in their lives (Maslow, 1943; Maslow, 1954). Maslow discovered that all human beings have five levels of needs to be satisfied with life, from which he developed a hierarchy system of these needs. The first level of the hierarchy is the basic need for physical survival, such as food and shelter, while the second, is the basic need for physical safety, such as the need to feel freedom from being attacked, especially in one's home. Once these two needs are met, individuals are more likely to be motivated to seek out the third level, which is the need to belong to one's family or social group and feel affection. This is followed by the fourth need and fifth need, which is the need for self-esteem and self-actualization, respectively (Maslow, 1943; Maslow, 1954).

Although Maslow developed five layers of needs in his model, he stipulated that the first four levels are necessary for one's growth, development, and well-being. The need to belong is of particular relevance to the current study as family systems theory postulates that child maltreatment and family victimization can decrease a child's sense of belonging (Johnston, 2007, King & Boyd, 2016) and belonging in and of itself is associated with healthy behaviors and greater satisfaction with life outcomes (Maslow 1954; Maslow, 1970; Baumeister & Leary,

1995). In line with Maslow's research on the importance of the basic human need to belong, it is plausible to hypothesize that a child's perception of how they fit in with their family could be an important factor that may affect their behavior, particularly if they are already exposed to some form of maltreatment within their home. Family belonging, like family cohesion and support, is one measure of family functioning. Unlike cohesion, which is the "glue" that brings family members together, family belonging is a person's perception of fitting in with their family and feeling valued (King & Boyd, 2016). Thus, family belonging should contribute to a family being more cohesive and a more cohesive family may contribute to a greater sense of belonging between the family members (Galvin, Braithwaite, & Bylund, 2015). In developing the "need to belong" theory, Baumeister & Leary (1995) further conceptualized a person's need to belong as relying on two specific criteria: First, individuals must have positive, interactions with at least a few other individuals and second, these interactions must take place within the context of long-lasting emotional concern for each other's wellbeing (Baumeister & Leary, 1995; Over, 2016). Both criteria must be met to fulfill the one's need to belong, and failure to satisfy this need can result in negative social and psychological consequences in the short term and long term (Baumeister & Leary, 1995).

Of significance to the current study, is the need to belong theory's emphasis on the difference between a child's need to feel belonging within the family unit, compared to the specific need for appropriate attachments with parents/caregivers. Although a child's relationship with their parents and/or caregiver is important, the need to belong can be fulfilled through significant social relationships in general. Thus, in addition to the caregiver relationship, bonds with other family members and peers are important as well. Returning to Maslow's hierarchy of needs, for a child to be motivated to seek belonging, he or she must first have their basic physical

survival needs met and also have a sense of safety and security, particularly within their home (Maslow, 1954; Maslow, 1970). Thus, children who are exposed to child maltreatment in the family, such as physical abuse or neglect, may have difficulty in forming meaningful relationships in which they feel a sense of belonging with family member and even peers. This is a rationale assumption given that abusive families tend to have less cohesion than non-abusive families (Henry, Tolan, & Gorman-Smith, 2001; Higgins, McCabe & Ricciardelli, 2003). However, it is still possible for a child to have a sense of belonging in other relationships, such as with siblings, the non-abusive parent, or people outside of the family, as a child's perceptions of belonging with his or her parents does not necessarily determine whether a child feels belonging with other family members or non-family members (Baumeister & Leary, 1995; Over, 2016).

Family systems theory postulates that although a child's sense of family belonging is not solely dependent on the quality of the relationship between their parents, the nature of the relationship between parents has the potential to contribute to a child's sense of belonging, as healthy relationships between parents are the framework from which other positive family relationships may be derived (Vuchinich, Hetherington & Clingempeel, 1991; King & Boyd, 2016). In cases where children are exposed to maltreatment like intimate partner violence, but still feel a sense of belonging to their family, negative social and mental health effects from maltreatment may be minimized (Over, 2016; Johnson, 2007; King & Boyd, 2016). Although the need to belong can be fulfilled through relationships outside of the family, the need to belong to one's family may be especially important since this is the social group children consider home, whether they are born or adopted into the family, and thus the expectation to belong to one's family may be more innate (Leake, 2007). Hence, the current study will examine if family belonging is negatively influenced by exposure to family violence, and if so, does the type of

family violence influence how much family belonging a child possesses. The importance of examining the impact of family belonging on the relationship between maltreatment and the likelihood of a child engaging in violence is that findings may provide insight into how crucial a child's relationship with their non-abusive family members can be during times of trauma. If that is indeed the case, treatment programs can be created to improve levels of family belonging in victimized kids, albeit with supportive non-abusive family members.

Contribution of the Current Research to Understanding Cycles of Violence Among Maltreated Children

More than 17 years ago Higgins & McCabe (2001) assessed the limited available studies that investigated the effects of different types of child mistreatment or the effects of being maltreated in more than one way (multiple-type maltreatment) on various mental, physical, and emotional outcomes. Since then there has been an increase in the number of studies that investigate the dynamics behind both the different types of child victimization and multiple types of maltreatment (Widom and Maxfield, 2001; Ascher et al, 2015; Bland, Lambie & Best, 2018). However, there are still significant gaps in this area of research such as a lack of consensus on which types of maltreatment are the most likely to increase violence. Although Higgins states in his review of the evidence, that there is no psychological problem in adolescents or adults that is “exclusively caused by sexual abuse “or any one type of abuse, he goes on to say that the evidence indicates that there are “stronger associations between specific abuse histories and areas of psychological functioning” (Higgins, 2004, pg. 52). He recommends that future research should focus on assessing the effects of multiple-type maltreatment on child behavior, and identification of dynamic factors such as family attachment and coping styles, that may moderate the relationship between maltreatment types and various outcome behaviors. Therefore, the

current study focuses on the impact of four different forms of child victimization experiences: physical abuse, sexual abuse, childhood neglect, and multiple- type child maltreatment (any combination of the other three types of maltreatment), on violent and aggressive behavior. Given the empirical support from need to belong theory and family systems theory that suggest there is a fundamental need to belong to one's family and social group (Baumeister & Leary, 1995; Leake, 2007), the moderating effect of family belonging on the relationship between childhood maltreatment and likelihood to commit violence will be examined.

Identifying how different types of child victimization experiences within the family affect the likelihood of violent behavior can contribute to the research by shedding light on the unique nature of victimization by family members and why certain children may engage in delinquent behavior like shoplifting or drinking alcohol, but not violent behavior. Since the data being analyzed in this study comes from a sample of youth referred to a juvenile justice system for a variety of offenses, every youth in the sample will have a record of committing some type of offense, while only some of the sample will have a record of committing violent offenses. This provides an opportunity to conduct analyses that isolate factors that are specifically linked to violent offenses as opposed to factors associated with all types of offenses such as non-violent ones like shoplifting. Since limited research exists on the impact of family belonging on violence among maltreated children, the current research will identify if family belonging is influenced by exposure to maltreatment and if the presence of family belonging can protect these victimized children from engaging in violence. Given the importance of family support and a strong sense of family belonging in the protection of children from negative effects of aversive life experiences, this research will assist in advancing treatment programs targeted not just at children who have experienced victimization, but also in advancing treatment programs for

parents and families at risk for experiencing and perpetrating child maltreatment and family violence.

Chapters 2 and 3 in this study will first focus on reviewing the literature in the following areas: First, the prevalence and symptoms of maltreated children, Second, the relationship between mistreatment of children and violence, and links between specific types of family victimization and violent behavior, Third, the relationship between “need to belong” and family belonging with child maltreatment and Fourth, the association between need to belong and externalizing and/or violent behavior. In chapter 4 the data and methods for the current study will be discussed with a specific focus on the dataset being used and the statistical analyses that will be conducted to answer each research question. Chapter 5 will contain the results for each research question that will be presented followed by a summary and interpretation of the results, and a discussion of the results and limitations of this research. Chapter 6 will conclude this study by detailing recommendations for future research initiatives and suggestions for improving existing treatment programs for maltreated children.

CHAPTER 2

REVIEW OF THE EMPIRICAL LITERATURE: THE RELATIONSHIP BETWEEN CHILD MALTREATMENT AND THE LIKELIHOOD OF VIOLENCE

To understand the consequences of and child maltreatment and its relationship to the likelihood of future violence, it is helpful to first have an understanding of how each type of maltreatment is defined, the prevalence of maltreatment, and the numerous resulting negative health consequences. Therefore, chapter 2 first provides a discussion of the challenges in determining the extent of maltreatment, the best estimates of prevalence for the different types of maltreatment, and the documented negative health consequences for different types of maltreatment. Information on the most common theories used to understand the cycle of violence will briefly be presented, followed by empirical explanations of why violence may be a symptom of traumatic experiences. Finally, the most notable and relevant research findings examining the relationship between the different types of child maltreatment and likelihood of commission of violence are discussed, followed by a summary of the significance of these findings and how they inform the current study.

Prevalence of Child Maltreatment

Determining the scope of child maltreatment is a daunting task for researchers partially due to a lack in reporting of family violence incidents, varying definitions of what constitutes maltreatment, and the methodological issues in capturing such complex family behaviors (Hussey, Chang & Kotch, 2006). Hence, available statistics on the prevalence of child maltreatment and other types of abuse within the family are often conservative estimates (Barnett, Miller-Perrin & Perrin, 2005; Fallon et al, 2010. Despite the challenges in assessing the frequency of maltreatment, enough data is available to estimate the scope of each type of

maltreatment. The following sections will discuss the challenges of measuring the prevalence of maltreatment, define the different types of maltreatment, and provide the best estimates of these victimization experiences.

Challenges in Measuring the Prevalence of Maltreatment

Although numerous research initiatives and treatment programs for family violence victims and perpetrators exist, negative cultural and social attitudes, such as blaming victims of family violence and minimization of the consequences of domestic violence incidents, still prevail (Smith & Powell, 1989). Victims of family abuse may be hesitant to report crimes committed by family members for fear of damaging relationships or fear of revictimization. Also, victim blaming attitudes and the stigma of family violence contribute to a lack of reporting of family violence (Straus & Gelles, 1986; Hogan & O'Reily, 2007). Additionally, certain types of child maltreatment such as sexual abuse may go unreported due to victims feeling ashamed or due to the discrete nature of the victimization (Hamby 2011; Katzenstein & Fontes, 2017). Regarding prevalence of childhood exposure to domestic violence, official measures of children who witness domestic violence are most likely a conservative estimate for several reasons; for instance, not all states require that children who were present at the time of the domestic violence incident be listed on the police report (Children'sDefense.Org). Also, very young children or children with certain types of cognitive disabilities who witness domestic violence may not be able to report what they have witnessed to the authority figures; thus, such cases may be undocumented by law enforcement (Groves & Fox, 2004). To add to the challenges of assessing prevalence of family violence, certain types of maltreatment, such as emotional and mental abuse, are even less likely to be reported to law enforcement compared to physical abuse. As a

result, emotional and mental abuse cases are underestimated in official data system reports like UCR (Trickett et al, 2006).

Although researchers have a clearer understanding of the etiology of child maltreatment, there are still numerous methodological issues with assessment of maltreatment prevalence (Kim & Cicchetti, 2004). The primary methodological challenges in assessing prevalence include differences in how maltreatment data is collected and in how child maltreatment is operationalized and measured (Barnett, Miller & Perrin & Perrin, 2005; Fallon et al, 2010). Studies using data from official sources like the Uniform Crime Report (UCR) and National Incident -Based Reporting System (NIBRS) are beneficial in that they analyze data from confirmed incidents, however, these official reporting systems have several limitations. The most serious types of violence are the ones that are most often reported, thus such measures are not representative of all severity levels of family violence (Chalk & King, 1998). Also, lower socioeconomic status families are overrepresented in official measures because they are more likely to come to the attention of law enforcement and to seek help from public hospitals and clinics who are required to report such incidences to law enforcement (Gelles, 2007).

Self-report representative survey instruments like National Crime Victimization Survey (NCVS) and The National Family Violence Surveys (NFVS), are not without limitations. Even though they are representative surveys, non-response and the exclusion of certain types of people, such as those without telephones or institutionalized individuals, still limit the level of representativeness of the data these instruments measure (Barnett, Miller-Perrin & Perrin, 2005).

Although many states exclude acts of corporal punishment and spanking from statutes on child abuse, self-report surveys may still include such acts when stating the prevalence of child abuse. Although evidence shows spanking can be mentally harmful for certain children

(Strassberg et al, 1994; Straus & Giles-Sims, 1997), the inclusion of such acts in general child abuse statistics creates a “muddying of waters” as cases of minor physical punishment (slapping a child’s hand away from the stove or brief spanking of a child’s bottom for cursing) may be included with cases of severe physical abuse, thus decreasing the validity of the instruments that are designed to address actual child abuse and neglect. Also, self-report surveys in general suffer from retrospective bias, variation in responses due to respondent interpretation of questions, and other reporting biases which hinder a conclusive assessment of the prevalence of family violence (Saunders, 1991; Barnett, Miller-Perrin & Perrin, 2005).

Additional methodological issues present in child maltreatment research can be illustrated by the variations in the how child neglect, one of the most common forms of maltreatment, is reported. The severity, frequency, and duration of neglect in part determines the potential harm that a child may experience, however, there are numerous challenges to identifying frequency and duration of neglect (Glaser, 2002; Barnett, Miller-Perrin, & Perrin, 2005). For example, a parent who only enforces their child to bathe once every two weeks for the entire period of childhood has been neglectful in the area of hygiene, but the harmful effects to the child may be minimal. This does not compare in magnitude to the parent who is neglectful on one instance by failing to buckle a child’s seatbelt, and as a result the child is badly injured in a car accident. These distinctions in nature and frequency of neglect are essential for appropriately understanding the types of effects such neglect may have on the victims, and for helping researchers and practitioners to gain a better understanding of potential causes of neglect and ways to minimize neglectful behavior by parents (Glaser, 2002; Dubowitz et al, 2005).

In addition to the differences in data collection and reporting methods used to determine prevalence of child maltreatment, the nature of the items used to assess maltreatment also affect

prevalence rates. For example, a study examining the effects of exposure to domestic violence on maladaptive behavior in childhood that has only one measure of domestic violence, may produce results indicating that there is no significant relationship between exposure to domestic violence and likelihood of aggression. However, these findings may not be accurate, as the majority of the children surveyed who answered “yes” to being exposed to domestic violence, were exposed to violence between siblings. Thus, the effects of witnessing *parental* violence may indeed be more likely to result in aggressive behaviors. Surveys like the National Survey of Children’s Exposure to Violence (NatSCEV) are unique in that they assess for a family violence among different family members (e.g., parent to parent, sibling to sibling, child to parent) and even different forms of exposure to family violence, such as seeing *or* hearing family violence and witnessing the aftermath of family violence (e.g., property destruction or injury on victim). Additionally, NatSCEV asks about the identity of the perpetrator, thus providing information on family violence incidents that may involve non-parental family members (NatSCEV, Hamby et al, 2011). Despite the dark figure of child maltreatment and the methodological issues in assessing this type of victimization, researchers and practitioners have carefully calculated estimates of the different types of child maltreatment (Barnett, Miller-Perrin & Perrin, 2005; ACF, 2016).

Prevalence of Childhood Neglect

Childhood neglect by family members and/or caregivers is the most frequently reported form of maltreatment (Glaser, 2002; Barnett, Miller-Perrin, & Perrin, 2005; Child Maltreatment, 2016). Although most forms of neglect are not violent, there is high co-occurrence between neglect and physical child abuse and the similarity in harm resulting from physical abuse and neglect (Barnet, Miller-Perrin & Perrin, 2005). Perhaps the most significant difference between

child neglect and child physical abuse is that neglect often involves the omission of acts rather than commission. It is most frequently defined as “the failure of a parent or other person with responsibility of the child to provide needed food, clothing, shelter, medical care, and supervision to the degree that the child’s health, safety, and well-being are threatened with harm” (U.S Department of Health and Human Services-ACF). While child neglect can be unintentional, it is still detrimental to a child’s physical and mental development (Sedlack & Broadhurst, 1996; Lamb, 2003).

According to extrapolations of self-report data, approximately 1 in 8 American children have experienced some form of neglect in their lifetime (ACF, 2016). The National Child Abuse and Neglect Data System (NCANDS) gathers state and local official reports of abuse and neglect of children from all 50 states and the District of Columbia and Puerto Rico. Based on NCANDS data, the estimate of children who received a state or local child protective services investigation response or alternative response increased by 9% between 2011 and 2015 (ACF, 2016). The 2015 data show that 78% of child victims reported for maltreatment were victims of neglect, and an estimated 1,670 children died from maltreatment. Out of children who died from maltreatment, 70% had experienced neglect and 44% experienced physical abuse, thus indicating a relationship between child neglect and child physical abuse (ACF, 2016). Children under the age of three are more likely to suffer from injuries and death due to neglect than older children (Gelles, 2007; Brandon, 2014). This is partially a result of a more fragile body, lack of ability to verbally express neglect experiences and thus less chances for appropriate authorities to intervene, and other challenges associated with parenting very young children (Gelles, 2007). Although the risk for overall neglect tends to decline as children grow older, adolescents and teenager are more likely to experience emotional neglect (Sedlak & Broadhurst, 1996).

Despite being the most commonly reported form of child maltreatment (Fordham, 1992), there is a limited number of studies exploring the specific effects of child neglect on child behavioral outcomes, as most attention is devoted to other types of maltreatment (Wolock & Horowitz, 1984; Hobbs & Wynn, 2002). This is unfortunate as the few studies that have looked at the impact of childhood neglect on behavioral outcomes have found that chronic neglect can lead to an increase in aggression in childhood along with internalizing trauma symptoms (Reidy, 1997; Hildyard & Wolf, 2002). In certain cases, childhood neglect can cluster with other types of child maltreatment, most commonly being exposure to domestic violence, followed by physical abuse (Kantor & Little, 2003; Osofsky, 2003).

Prevalence of Childhood Exposure to Domestic Violence

Child exposure to violence within the home is one of the most common forms of maltreatment (Gelles, 2007). According to data from the United Nations Secretary General's Study on Violence against Children in 2006, close to 275 million children worldwide are exposed to violence in the home, with up to 2.7 million children in the United States alone being exposed to domestic violence¹ (UNICEF). The National Survey of Children Exposed to Violence (NatSCEV), revealed that in 2008, 11.7% of youth were eyewitnesses to an assault of their parent, 5.3% witnessed severe physical abuse of their parent (e.g., kicked, choked, or beat up), and 4.6% were exposed to parental assault of a sibling. Fathers and boyfriends were the most commonly reported perpetrator followed by mothers and other male family members (NatSCEV, 2008). This is consistent with other self-report and official data estimates that

¹ This number is a conservative measure given that some countries did not have any family violence data and like other types of family violence, domestic violence is underreported by adults and children, especially in cases where overt physical injury is not sufficient to warrant medical attention (UNICEF; Davis et al, 2003)

indicate male family members tend to perpetrate more family violence than female family members (Tjaden & Thoennes, 2000).

Researchers and practitioners have primarily focused on child witnesses of inter-adult violence, most specifically violence towards mothers or female caregivers, although witnessing parent on sibling violence may be just as common and as devastating in terms of their effect on mental health as other types of family violence (Teicher & Vitaliano, 2011). It is important to note that there are several conceptual reasons that greater attention has been paid to the problem of child exposure to intimate partner violence rather than other types of violence within the home. First, children are more likely to have an innate expectation that trusted adults should not engage in violence compared to siblings and other children, and thus, violence committed by a caretaker may be more emotionally upsetting (Baumrind, 1966; Cunningham & Baker, 2007). Second, violence among siblings, especially low levels of violence such as pushing or shoving among younger children during an argument, may be culturally accepted as being within the bounds of normal behavior (Kiselica & Morrill-Richards, 2011). Third, depending on the intent and situation, parent to child violence may be indicative of poor parenting techniques as opposed to intimate partner violence, where often the intent is power and control, particularly when the victim is female (Johnson & Ferraro, 2000; Jewkes, 2002). Additionally, an increasing number of studies have shown an overlap between violence towards women and child abuse, leading researchers and practitioners to view exposure to intimate partner violence as a risk factor child abuse (Bedi & Goddard, 2007; Margolin et al, 2003). In fact, 40 to 60% of families where intimate partner violence is present, also report child abuse (Straus, Gelles and Steinmetz 1980; Hughes 1988). Studies have shown that these findings can partially be explained by children attempting to protect the abused family member and being inadvertently hurt during the

altercation (Edelson et al, 2003). Perpetrators may also physically abuse the child as a way to control and manipulate other family members (Beelbe, Bybee & Sullivan, 2007).

Children who witnesses domestic violence are at risk of experiencing additional forms of maltreatment (i.e., multiple-type maltreatment), and additional forms of general victimization outside of the home (i.e., polyvictimization) (Finkelhor et al, 2009; Hamby, 2011). These children are also more likely to face future victimization in adulthood and suffer from a range of mental and emotional health issues similar to children who report experiencing physical child abuse (Widom, 1989; James, 1994; Gilbert et al, 2009). Thus, exposure to domestic violence can be a very traumatic experience for children due to their vulnerable positions leaving them powerless to protect the ones they love and at risk for further victimization.

Prevalence of Physical Child Abuse

The 2015 Child Maltreatment Report which analyzes NCANDS data of child maltreatment indicated that CPS agencies received approximately 4 million abuse referrals for an approximate total of 7.2 million children. Out of the children who received a state or local child protective services investigation response or alternative response, 17.2% were physically abused. The extent of abuse varied in duration and severity, however the most severe forms (e.g., abuse resulting in hospitalizations or fatalities) were the least common. Nevertheless, the report indicated that there was an increase in child fatalities due to abuse, leading to 1,670 children dying (Child Maltreatment Report 2015). NatSCEV data revealed that close to half of the children surveyed reported some type of physical assault within the past year, and more than half reported at least one incident of assault over the lifetime (Finkelhor et al, 2009). Assault from family members was the most common type of physical violence children experienced, with abuse from siblings being the most prevalent. Assaults by siblings followed a developmental

trend, peaking during the ages of six and nine (Finkelhor et al, 2009). The National Family Violence Surveys conducted almost two decades earlier showed a similar trend, concluding that milder forms of violence were the most prevalent and that sibling to sibling violence was the most common form of violence (Straus & Gelles, 1990). However, the rates of serious forms of violence were not negligible; almost 3% of parents admitted to engaging in at least one act of abusive violence in the past year (Straus & Gelles, 1990). Given that the National Family Violence Surveys ask only parents to report on their behavior toward children, these estimates do not include violence by non-parents and caretakers within the home, or siblings towards children (Straus & Gelles, 1990).

Another survey on childhood experiences with family violence found that nearly 30% of parents of 2 to 8-year-old children used an object to spank their children (Straus & Stewart, 1999). These findings illustrate the potential overlap between use of physical punishment and actual abuse. Thus, the prevalence of child physical victimization by a family member is difficult to estimate due to this overlap between disciplinary punishment and child abuse. Important to note is that child physical abuse estimates are usually separate from child homicide estimates, thus it is important to look at both estimates when understanding the extent of family violence towards children. NCANDS estimated that 1,500 children were killed by parents or caregivers in 2003 (U.S Department of Health and Human Services, 2003) and the majority of the victims of child maltreatment fatalities were children 3 years old or younger (Gelles, 2007).

Prevalence of Sexual Abuse of Children

The most consistent and legally accepted definition of child sexual abuse comes from the National Center on Child Abuse and Neglect: “contacts or interactions between a child and an adult when the child is being used for the sexual stimulation of the perpetrator or another person.

Sexual abuse may also be committed by a person under the age of 18 when the person is significantly older than the victim or when the perpetrator is in a position of power or control over another child” (NCCAN, 1978). This broad definition has the advantage of encompassing cases that involve actual contact and non-contact as well cases involving people within and outside of the family. However, there are disadvantages to this type of broad definition, as it leaves room for practitioners, policy makers, and researchers to interpret what specific acts may qualify as sexual abuse (Haugaard, 2000). The difficulty in defining what qualifies as abusive sexual behavior is in part due to the variation in how state laws define sexual abuse of children (e.g., age of consent differs among states), the influence of cultural factors on what is sexually acceptable (e.g., certain cultures allow for the marrying of children to adults in certain situations), and the difficulty in assessing intent (sexual gratification vs. intent to display affection) behind such behavior (Barnet, Miller-Perrin, & Perrin, 2005; Haugaard, 2000). Although problems are inherent in defining exactly what constitutes child sexual abuse, researchers have made concerted efforts to identify the prevalence rates. These rates vary greatly, depending on whether they are based on: official estimates or self-report estimates, community samples or clinical samples, and samples of adults or children. Important to note is that identified incidents of child sexual abuse decreased dramatically from 1993 to 2004, potentially due to a variety of factors such as less reporting to CPS and more conservative standards of what CPS defined as sexual abuse (Finkelhor & Jones, 2004). Regardless, the statistics available are still troubling, given the severe negative health effects associated with child sexual victimization, such as PTSD, sexually transmitted diseases and self-harming behavior (Zierler, 1991; Noll et al, 2003; Finkelhor & Jones, 2012).

According to the National Incidence Studies (NIS-3) which was conducted in 1993 when sexual abuse cases among children were declining, 4.5 per 1, 000 children were sexually abused in the previous year. Though the percentage may appear relatively small, it is most likely a conservative estimate and still equates to approximately 300, 200 children being sexually victimized in one year. The National Survey of Children's Exposure to Violence (NatSCEV), reported that 27.4% of 14 to 17-year-olds had been sexually victimized at some point in their lifetime. In 2012, out of 686, 000 children that were maltreated by a family member or caregiver, 9.3 % were sexually abused as well (NatSCEV). Research conducted by the Centers for Disease Control (CDC) in 2007, estimated that approximately 1 in 6 boys and 1 in 4 girls will experience some form of sexual victimization before the age of 18. This equates to 1.8 million adolescents in the United States that have been the victims of sexual assault (Kilpatrick et al, National Survey of Adolescents, 1998) and approximately 33% of victims of sexual assault were under the age 12 (CSOM, 2008)

The relationship between perpetrator and victim of sexual abuse is difficult to assess, as children do not always report who the perpetrator is and certain surveys may not ask for the nature of relationship between perpetrator and victim. However, based on estimates from Center for Sex Offender Management 2008 report, 60% of perpetrators of sexual abuse are known to the child and 30% of perpetrators are family members, indicating that the majority of child sexual abuse perpetrators are familiar to their victims. In contrast to the numbers provided above, representative self-report surveys in the literature indicate that approximately 20% of women and between 5 and 10% of men in North America experienced some form of sexual abuse as children (Finkelhor, 1994). Self-report surveys naturally reveal a greater number of victims than official measures like data from NIS, since often such sexual assault cases go unreported (London et al,

2003; Broman-Fulks et al, 2007.) Official reporting statistics reveal that intrafamilial abuse is significantly more common than extrafamilial child sexual abuse, while self-report surveys reveal an opposite pattern (ABS, 2005). This suggest that majority of child sexual abuse cases that come to the attention of law enforcement are cases involving intrafamilial abuse (Bolen, 2000; Barnett, Miller-Perrin & Perrin, 2005). This could indicate that intrafamilial sexual abuse may be more severe in nature, thus warranting attention from medical services and law enforcement, but the evidence on that is unclear given the methodological differences between self-report and official data.

Prevalence of Multiple-Type Child Maltreatment

It is more common than not for children to experience more than one type of victimization (Higgins, 2001; Clemmons et al, 2007), such as both witnessing domestic violence, and experiencing physical abuse. Referred to as multiple-type maltreatment in the literature (Higgins, 2000), this type of victimization is more likely to occur within problematic family environments where there is consistent disorganization, social and economic strains, and social isolation (Belsky et al, 2007; Alexander, 2015). According to the National Survey of Children's Exposure to Violence (NatSCEV), children exposed to one type of violence were at a significantly greater risk of experiencing other types of violence (Kellog & Maynard, 2003). The data revealed that a child who experienced physical assault during his or lifetime would be more than six times likely to also become a victim of sexual assault in his or her lifetime. Children living in what were deemed as dangerous communities and dysfunctional families, were at the highest risk for experiencing multiple-type maltreatment (Dong et al, 2004).

Data from the 2009 NatSCEV revealed that 33.9 % of children who witness partner violence had also experienced some form of maltreatment in the home in the past year, compared

to 8.6% of non-witnesses (Hamby, et al, 2010). Similarly, out of 164 children evaluated in a specialized sexual abuse clinic, 86% of the children who were physically assaulted also witness partner violence and 50% experienced both sexual and physical violence. These findings indicate that multiple-type child maltreatment is not an uncommon occurrence among children who are victimized by family members (Scher et al, 2000; Bevan & Higgins, 2002). Researchers and practitioners advocate for further research and policy initiatives to combat family victimization of children due to the high likelihood of negative consequences such as trauma symptoms, externalizing behaviors, and more psychiatric problems in children who experience multiple forms of family maltreatment (Higgins & McCabe, 2004; Finkelhor et al, 2005; Kim & Fisher, 2008)

Potential Consequences of Child Maltreatment

As evidenced from the empirical research described above, children are more likely to fall victim to maltreatment from a family member or from someone they know, as opposed to a stranger (McAlister Groves, 2003; Finkelhor et al, 2005; Sinha, 2012). Since childhood maltreatment may exert an influence on violence through other negative trauma symptoms such as cognitive difficulties and mental health issues such like substance abuse (Felitti, 1991; Higgins, 2001; Dube et al, 2003; Rohlf et al, 2018), understanding the scope of the symptoms experienced by victimized children is essential to understanding why certain abused children are at an increased risk of committing violent and aggressive acts.

Childhood exposure to violence can negatively affect the wellbeing of children who witness or experience violence, both during childhood and throughout the lifespan (McEwen, 2009; Finkelhor et al, 2015). Children are quite vulnerable to the effects of violence because such exposure may alter the timing of normal development trajectories (Osofsky, 1995; Rogosch,

Dante, & Aber, 1995). Childhood neglect, witnessing family violence, experiencing physical and/or sexual abuse have all been linked to numerous physical, cognitive and emotional problems during childhood and adulthood (Felitti, 1991; Kent, Waller, & Dagnan, 1999).

Although victimization of children in general can contribute to serious negative effects, childhood maltreatment in the home may be even more detrimental in some cases due to the traumatic nature of family violence because of a child's innate expectancy of security and belonging within the home (Spinney, 2013; Alexander, 2015), which is disrupted when maltreatment happens. Although symptomology can vary based on the duration, frequency, type of family victimization a child experiences many of the negative physical, cognitive, and emotional effects are collectively present in children who have experienced any type of maltreatment, and can continue well into adulthood, unfortunately magnifying the extent of the problem (Neumann, 1996; Bremner, 2003). Furthermore, some of these effects can be passed on to future generations through the intergenerational transmission of trauma and violence as evidenced by the research suggesting that maltreated children are significantly more likely to engage in aggressive behavior and parents who maltreat their children are likely to have been maltreated themselves (Spinetta & Rigler, 1972; Main & Goldwyn, 1984; Widom, 2000; McWey et al, 2013; Alexander, 2015).

The nature of the consequences of childhood maltreatment can be divided into the following categories: medical and physiological consequences, cognitive consequences, emotional and mental health consequences and relationship problems. Since one of the primary objectives of the current research is to study the relationship between maltreatment and family dynamics (e.g., family belonging), the literature on relationship problems will primarily focus on the link between maltreatment and familial relationship problems. Important to note is that

depending on the nature of maltreatment, certain child victims may show an increase in symptomology in one or more categories of symptoms (Higgins, 2002). For example, studies have shown that children who suffer from multiple-type maltreatment are more likely to experience additional and more severe trauma symptoms compared to children who experience one form of victimization (Higgins, 2000; Herenkohl & Herrenkohl, 2009; Hahm, 2010).

Medical and Physiological Consequences

Survivors of childhood family abuse can suffer from negative health effects throughout childhood and into adulthood (Walker et al, 1999). Survivors tend to report feeling sick more often and report more symptoms such as chronic pain (Kendall-Tackett, 2000; Felitti, 1991). Researchers examining the impact of aversive childhood experiences found that children who experienced both childhood sexual and physical abuse were at an increased risk of a range of health conditions such as diabetes and heart disease (Felitti, 1991). The most observable medical problems related to childhood physical abuse are injuries such as bruising, fractures, and burns and more serious injuries such as head trauma (Smith, 1994).

Physiological symptoms associated with child family victimization in general include neurobiological changes such as altered stress responses and delayed motor and language development (De Bellis & Zisk, 2014; Moffitt, 2012). In relation to violent behavior, research suggest a strong link between the physiological impact of brain injury and violence in both childhood and adulthood (Ellis, Beaver, & Wright, 2009; Williams et al, 2010; Fazel et al, 2011). Thus, children whose maltreatment is comprised of physical abuse (or any abuse with a potential for injury) are at a greater risk of experiencing brain trauma, and subsequently at risk for aggressive behavior (Ellis, Beaver & Wright, 2009).

Additionally, children who are neglected are also at risk for experiencing a host of negative physical health problems, such as malnutrition and subsequent diseases resulting from malnutrition (Walker et al, 1999; Petersen, 2014). Research has demonstrated that malnutrition predisposes children to neurocognitive deficits which can result in a variety of externalizing behaviors including aggression, thus leaving neglected children at a higher risk for violence commission (Liu & Raine, 2006; Liu et al, 2015). The effects of exposure to family violence and other types of family child maltreatment extend beyond physiological and overt physical symptoms (as illustrated from the research findings on the link between brain injury and violence) into mental health issues and emotional disturbances.

Emotional and Mental Health Consequences

Children who experience maltreatment are significantly more likely than non-maltreated children to experience mental and emotional health problems ranging from depression, difficulty regulating emotions, eating disorders to substance addiction (Gross & Keller, 1992; Briere & Elliot, 1994; Shields & Cicchetti, 1998; Kent, Waller, & Dagnan, 1999). Researchers have found a relationship between different types of eating disorders and variety of victimization experiences (Felittie, 1991; Miller, McClusky-Fawcett & Irving, 1993; Rayward, Wise & Harlow, 2004; Turanovic & Pratt, 2015). Obesity in particular is more common among adult survivors of different types of childhood victimization experiences, particularly cases of severe obesity (Felittie, 1991; Williamson et al, 2002; Turanovic & Pratt, 2015). Young women diagnosed with bulimia were significantly more likely to report being sexually abused by a family member (Miller, McClusky-Fawcett & Irving, 1993). Although sexual abuse in particular has been consistently linked to eating disorders, other types of maltreatment such as neglect have also been associated with eating disorders (Brewerton, 2007).

Adult survivors of physical and sexual abuse are at an increased risk of abusing alcohol and drugs. Survivors with a history of being mistreated by their family are significantly more likely to use recreational and intravenous drug (Kendall-Tackett et al, 2002; CDV). In a clinical study examining the relationship between child abuse and drug addiction, results revealed that 84% of the sample reported a history of abuse and/or neglect (Cohen & Densen-Gerber, 1982). Although not specific to maltreatment, Dube and colleagues (2003) examined the association between illicit drug use and aversive childhood experiences through a retrospective study of a large clinical sample of adults. Findings showed that adults with multiple childhood aversive experiences were up to ten times more likely to report illicit drug use problems compared to adults not reporting childhood aversive experiences (Dube et al, 2003). The association between substance use and violence is exceedingly complex and moderated by numerous individual and societal level factors, hence causality is undetermined (Frye et al, 2007). However, substance use may lead to an increased risk of committing violence through various social processes such as economic need, and routine activities (Boles & Miotto, 2003 Haggard-Grann, 2005).

Perhaps one of the most consistent findings in studies examining the link between maltreatment and emotional and mental health outcomes is that there is a strong relationship between child maltreatment and likelihood of developing PTSD (Schore, 2002; Greeson, et al, 2011; Jaffe, Wolfe, & Campbell, 2012). One study found that more than half of the children in their sample who witnessed domestic violence exhibited symptoms of PTSD (Lehmann, 1997). One of the most frequent emotional problems observed in sexually abused children are symptoms of PTSD such as somatic complaints, hypervigilance, fears, and guilt (Barnet, Miller-Perrin & Perrin, 2006). Although some maltreated individuals do not necessarily display symptoms of PTSD, numerous studies have found that depression, anxiety, and suicidal ideation

or suicidal attempts are more common among adults reporting maltreatment during childhood than non-maltreated individuals (Norman, 2012; Miller et al, 2013; Rehan et al, 2017). Similar results were found for adolescents that reported maltreatment during childhood as well (Brown et al, 1999; Harkness & Lumley, 2008).

In a meta-analysis of 184 studies, researchers found that half of the adult patients with depression reported a history of child maltreatment. Maltreated individuals were 2.66 times more likely to develop depression and twice as likely to develop chronic depression (Nelson et al, 2017). Maltreated individuals diagnosed with depressive, anxiety and substance use disorders have an earlier age of onset, greater severity of symptoms, and exhibit a poorer response to treatment compared to individuals diagnosed with the same psychopathology but who have not been maltreated (Teicher & Sampson, 2013).

Although majority of children and adults who experience mental health and emotional issues do not engage in violence and are in fact more likely to be victims of violence, research findings do show that maltreated children who experience mental health issues, are more likely to report reactive aggression (Dodge et al, 1997; Shields & Dante, 1998;). A review of 22 studies published between 1990 and 2004 concluded that major mental health disorders were associated with a higher risk of interpersonal violence after controlling for substance abuse (Joyal et al, 2007). It is important to note that the type of violence that occurs more often in mentally ill or cognitively impaired individuals is reactive aggression resulting from poor emotional regulation due to other cognitive deficits, as opposed to proactive violence (Giancola et al, 1996; Dodge et al, 1997). Mental health problems and emotional trauma have been empirically associated with cognitive deficits, thus creating a downward spiral whereby children who suffer from issues like PTSD, substance abuse and eating disorders as result of maltreatment, may be at an increased

risk for cognitive adversities as well (Bremner et al, 1995; Grant, Thase & Sweeney, 2001; Bachrach & Read, 2012)

Cognitive Consequences

Children who experience maltreatment exhibit difficulties in the classroom, such as challenges with staying on task and paying attention. They may also suffer from deficits in memory retention (Haskett, 1990). Studies have shown a strong relationship between child maltreatment and learning difficulties and poor academic performance (Mills, 2004; Gilbert et al, 2009). A meta-analysis of more than a hundred studies published between 1978 and 200 found that 67% of children who witnessed family violence experienced developmental and adjustment problems such as decreased cognitive ability and less academic success (Kitzmann et al, 2003). Research has shown that children who experience physical abuse show lower cognitive functioning on general intellectual measures as well as on measures of memory, dissociation, and communication ability compared to non-abused children, even when controlling for the effects of socioeconomic status (Kurts, et al, 1993).

In children who are physically abused, certain cognitive deficits may be the result of direct physical injury to the head (Barret, Miller-Perrin, & Perrin). However, similar cognitive deficits are found in children who witness domestic violence or are sexually abused without the presence of physical abuse (Huth-Bocks, Levendosky & Semel, 2001). Witnessing domestic violence can have indirect and direct effects on children's intellectual functioning. In a study conducted on children between ages 3 and 5, results illustrated that kids exposed to domestic violence had lower scores on verbal ability measures than children not exposed to domestic violence. This relationship remained after controlling for child abuse and SES (Huth-Bocks, Levendosky & Semel, 2001). Childhood abuse has been shown to have negative effects on speech and language development capacities (Wolfe, 1999). After controlling for genetic

influences that might confound the association between lowered intelligence and exposure to domestic violence, researchers found that children who witnessed high levels of domestic violence had significantly lower IQ points than unexposed children (Koenen et al, 2003).

Cognitive deficits may exist alongside other types of problems, such as behavioral manifestations of aggression and violence. Cognitive problems, particularly deficits in executive functioning are linked to reactive aggression in children (Rohlf et al, 2018) and violent behavior in adulthood (Raine, 2002). Child maltreatment and exposure to violence may influence cognitive, emotional and neurobiological development processes which can increase the likelihood of aggression. In a study of highly aggressive incarcerated adolescent boys, results showed that violent victimization was significantly related to problems in cognitive interpretation of social cues and approval of aggression as a social response (Shahinfar, Kupersmidt, & Matza, 2001). This finding illustrates the potential influence of child abuse and other types of violent victimization on social-cognitive functioning in adolescents, which in turn can increase the risk of engaging in violence.

Relationship Problems

While majority of studies that examine the consequences of childhood maltreatment tend to focus more so on the outcomes of physical health problems, mental health issues, and cognitive-behavioral problems, there are select studies that have focused on evaluating the impact of maltreatment on family bonds and peer relationships (Savla et al, 2013). Using retrospective reports of family abuse of more than a thousand middle-age and older adults, researchers examined the relationship between child abuse and current levels of emotional closeness with family. Findings indicated that adults who reported emotional abuse in childhood were less likely to feel close to their family during adulthood, and that this relationship was

moderated by level of extraversion in the victim. Adults who scored lower on the extraversion scale and who also experienced emotional abuse were more likely to report low levels of closeness with family compared to their more extroverted emotionally abused counterparts (Salva et al, 2013).

Studies have also demonstrated that children's experience of sexual abuse is linked to their perceptions of family functioning. In one particular study that examined the links among sexual abuse, mental health issues and family functioning, results revealed that children who experienced the most severe sexual abuse were more likely to have negative perceptions of their mothers than those not abused or not as severely sexually abused (Stern et al, 1995). Similarly, researchers found that sexually abused children were more likely to report greater family dysfunction and less positive perceptions of overall family functioning (Hoagwood & Stewart, 1989). Another study revealed that children exposed to high levels of community violence were more likely to report negative maternal behavior, less satisfaction with their maternal caregiver, and more separation anxiety than children exposed to less or no community violence (Lynch & Cicchetti, 2004). Despite the Lynch & Cicchetti 2004 study assessing a link between exposure to community violence (not family violence or maltreatment) and reporting of relationship problems, findings are indicative of how exposure to violence and trauma in general can negatively affect a child's perceptions of family bonds. Although these studies described do not assess for the influence of childhood maltreatment on likelihood of violence commission, additional studies do indicate that children who perceive greater family relationship problems such as lack of closeness to parents or lack of parental support are at a greater risk of engaging in violent or aggressive behavior (Simmons, Robertson & Downs, 1988; Evans, Steel & DiLillo, 2013). Thus, these findings collectively contribute to an overall understanding of the nature of

the links among maltreatment, violence, and family relationships and inform the current study's objective to examine the link between children's family belonging and likelihood of violence commission.

As evidenced from the literature thus far, maltreated children are at risk of experiencing a host of negative physical, mental, relationship and cognitive consequences (Shields & Dante, 1998; Kent, Waller & Dagnan, 1999; Evans, Steel & DiLillo, 2013). Some of these symptoms like cognitive deficits, PTSD, and poor family relationship quality are empirically linked to an increase in aggressive behavior, and therefore, may partially explain why maltreated children are at an increased risk of committing violence and thus continuing the cycle of violence. The research also demonstrates that certain types of maltreatment are more closely linked with particular trauma symptoms (Elkit, 2013). Hence, findings from the literature inform the current study's goals of examining the impact of maltreatment type on likelihood of engaging in aggressive behavior in order to gain more insight into the continuity and discontinuity of violence. The next section of this literature review will briefly cover the dominant theories used to explain the cycle of violence, along with gaps in the research that these theories cannot fully explain on their own. A discussion of how integrating concepts from trauma theory into the intergenerational transmission of violence framework can help fill in some of the research gaps will be presented. Following that discussion empirical evidence demonstrating how violence can be a symptom of trauma will be explained, along with the most relevant studies examining the link between different types of maltreatment and propensity for violence.

The Cycle of Violence: Aggression as a Result of Trauma

Rather than violent offenses, child victims of maltreatment are more likely to present with internalizing problems like mental health disorders and cognitive issues as well as externalizing behaviors such as running away, acting out, and committing nonviolent offenses (Osofsky, 1999; Widom & Maxfield, 2001). Although behavioral problems that are not violent in nature are concerning given the potential consequences, the primary focus of this section is to discuss the body of research examining the association between childhood maltreatment and likelihood of violence commission. Before this discussion, an account of the main theories used to explain the cycle of violence along with their limitations will be presented, followed by an explanation of why violence in maltreated children may be a consequence of trauma.

Explanations of the Cycle of Violence and Limitations

Research has found support for the moderating effects of a variety of factors such as age, gender, SES, cognitive deficits, social support, parent-child relationship quality, and genotype indicating less MAOA expression, on the relationship between maltreatment and violence (Dodge, Bates, & Pettit, 1990; Fergusson and Linkskey, 1997; Caspi et al, 2002; Fagan, 2005; Lansford et al, 2007). Additional research has found that that contextual factors associated with the victimization experience such as frequency and severity of maltreatment, and relationship to the perpetrator moderate the relationship between maltreatment and violence perpetration (Pears & Capaldi, 2001; Barlett et al, 2017). Most of the support for these findings stem from biological, social learning, attachment, and transactional-ecological theories since these are the primary frameworks researchers use to test the phenomenon of the intergenerational transmission of violence, while some support comes from family systems theory and trauma theory, which are less often used to explain the cycle of violence (Briere, 1992; Murray, 2006; Alexander, 2015).

Biological and genetic theories state that biological factors associated with violence, like low resting heart rate, are transmitted across generations and may help explain why children whose biological parents behave violently are at an increased risk for engaging in violence (Caspi et al., 2002; Farrington, 2007). Additionally, developmental-biological theories help explain why children of a certain age are more vulnerable to the effects of maltreatment (Farrington, 2007). While empirical support for biological explanations of the intergenerational transmission of violence are plenty (Moffit, 2005; Boutwell & Beaver, 2010; Farrington, 2010; Moffit & Caspi, 2003), the factors identified are primarily static factors, such as low resting heart rate (Van de Weijer et al, 2017), which are quite useful for identifying children at risk for violence perpetration but are not as useful for developing treatment programs (Wooditch, 2013).

Social learning theory, perhaps the leading dominant theory traditionally used to explain the phenomenon of the cycle of violence, states that a child's behavior is influenced by their parents' behaviors through schedules of reinforcement and punishment (Bandura, Ross & Ross, 1961; Bandura, 1973; Wareham, 2009). Thus, exposure to family violence, particularly violence involving parents, increases the risk that the child will learn that abusive behaviors are acceptable and will be more likely to use such behaviors in their relationships throughout the life course (Bandura, Ross & Ross, 1961; Burgess, 1979 Straus, Gelles, & Steinmetz, 1981).

Research indicates that social learning processes in conjunction with cognitive and family factors can help explain the intergenerational transmission of violence (Dutton & Hart, 1992; Mihalic, Wofford, & Elliott, 1997; Dodge et al, 1995; Glaser, 2000; Perry et al, 1995; Perry, 1997; O'Keefe, 1998; Glodich, 1998).

While support exists for the role of social learning mechanisms in the intergenerational transmission of violence (Sellers, Cochran & Branch, 2005; Wareham, 2009), there are several

critiques of social learning theory's explanation for the cycle of violence. One of the primary limitations of social learning theory is its failure to explain why a majority of abused children do not go on to engage in violence (Kaufman & Ziegler, 1987; Gelles, 2007; Alexander, 2015). Additionally, the primary hypotheses of social learning theory pertaining to the process through which behavior is learned, do not effectively explain why certain types of non-violent victimization can still increase the likelihood of violent behavior (Alexander, 2015). Social learning theory research lacks specific studies that actually test whether all the proposed conditions of the behavior being learned and modeled, such as identification with the perpetrator and/or reinforcement of aggressive behavior occur (Delsol & Margolin, 2004; Alexander, 2015). For the few studies that do examine the impact of the proposed conditions of social learning theory on aggressive behavior, significant findings are not found for all of the proposed conditions (Sellers, Cochran & Branch, 2005). Additionally, this theory also does not address the role of environmental factors that have been empirically shown to predict child maltreatment and cycles of violence (Schelbe & Geiger, 2017).

Attachment theory posits that the quality of the relationship between parent and child is formulated through the parent's sensitivity and responsiveness to the child (Bowlby, 1958). Exposure to family violence, particularly violence between parents or from parent to child, contributes to children forming insecure attachments with other people during adulthood, thus increasing the likelihood that they will engage in intimate partner violence (Zeanah & Zeanah, 1989; Feldman & Downey, 1994). Additionally, research on attachment theory suggests that the relationship between child maltreatment and violence may initially reside in the disruptions of healthy relationships between children and their caregivers leading to disturbances in normal emotional and cognitive development (Ehrensaft, 2003). These effects can then lead to overall

dysfunctional family dynamics, poor child parent attachment, emotional regulation deficits, faulty social information processing, and hostile attribution bias. These outcomes can all increase the risk of aggressive behavior in childhood and throughout the lifespan (Dodge et al, 1990; Geffner, Jaffe & Suderman, 2000; Ehrensaft et al, 2003). While some studies support the attachment theory explanation of the cycle of violence (Solomon & George, 2006), several limitations exist. Much of the research from which attachment theory was developed from focused on relationships between mothers and toddlers, and did not include, other family members or male caregivers (Schelbe & Geiger, 2017). Additionally, attachment theory does not address cultural differences in perceptions of what is considered to be healthy and normal interactions between parents and children (Alexander, 2015; Scheble & Gieger, 2017).

Lastly, ecological -transactional models², emphasizes how multiple independent factors contribute to the onset of maltreatment as well as the transmission of such abuse (Belsky, 1980; Belsky, 1980; Bronfenbrenner, 1988). One set of factors is made up of individual influences such as the characteristics of a child, while the second set is associated with interpersonal interactions such as specific parenting practices and characteristics of the parent-child relationship (Belsky, 1993; Cicchetti, & Lynch, 1993). These factors are nestled within a broad range of cultural and sociological factors (i.e., macrosystem) which have their own influence on behavior. According to Belsky's ecological transactional model, abuse and neglect of children result from disparities between parent and child or family and child in the context of their social situation (Belsky, 1980). For example, a single parent who has to work long hours at a stressful job may not have the coping skills necessary to care for a special needs or hyperactive child. While this child would not be likely to experience abuse if placed in a home with two attentive parents who share

² See Belsky's developmental-ecological model of child maltreatment

parenting responsibilities, their risk of abuse is increased with a parent who cannot meet their individual needs because of her lack of coping skills, that is in part due to her social situation of having to work long hours (Belsky, 1980; Gelles, 2007).

Unlike attachment theory, transactional-ecological models acknowledge the role of contextual factors such as culture and low SES in explaining various forms of child maltreatment by caregivers (Bronfenbrenner, 1988; Cicchetti, 2000). These models also help explain why environmental risk factors for violence like economic strain, poor parental supervision, and educational deficits may be transmitted across generations, increasing the likelihood for the continuity of violence (Farrington, 1991; Simmons, 1995). While ecological-transactional models are perhaps the most comprehensive framework to explain the phenomenon of the cycle of violence as it addresses the roles of multiple types of micro and macro variables in the development of human behavior (Cicchetti & Valentino, 2015), the current study is interested in a more nuanced explanation of the role of family relationships and trauma in development of aggressive behavior in maltreated children.

Although the above theories have collectively provided extremely valuable insight into the mechanisms of child maltreatment and why the intergenerational transmission of violence exists, the limitations discussed demonstrate the need to have more integrated framework to explain the cycle of violence, as well as concerted effort from researchers to investigate if additional theories possess explanatory power to provide additional insight into the transmission of violence.

Aggression as a Symptom of Trauma

Although significant progress has been made in the area of intergenerational transmission of violence research, two particular questions regarding this cycle of violence still remain: What

are the risk factors of child abuse and through what intrapersonal mechanisms does abuse have its effect on violent behavior? (Dodge et al, 1997) The first question pertains to the possible confounding factors that might account for why victimized children are at a greater risk of engaging in violent behavior. Given that child abuse occurs in the context of other risk factors such as low SES, poor parenting, genetic predisposition to violence, and additional types of strains (Grogan-Kaylor & Ottis, 2003), it is important for studies to account for these variables that might explain the risk of engaging in violence to isolate the effect of child maltreatment. The next question pertains to a need for more studies to identify the mediating pathways between maltreatment and violence and moderating factors that increase the chances of abused children engaging in violence. This is especially important since some studies have concluded that violent offenders are indistinguishable from other types of frequent offenders in terms of risk factors (Piquero, 2000). One way of shedding light on why only select maltreated children go on to engage in violence, is by examining why aggression can be a short and long-term response to certain trauma experiences. If aggression is indeed a response to particular forms of maltreatment, then children who experience the most traumatizing maltreatment (i.e., cumulative trauma) may be the ones at risk for engaging in violence.

Child maltreatment produces trauma symptoms like depression, post-traumatic stress disorder and emotional dysregulation (Oswald, Heil & Goldbeck, 2009; Cook et al, 2017). While some maltreated children may display mental health issues like depression and anxiety, other children may display additional features like violence and aggression (Ford et al, 2012). Aggression can result either directly or indirectly from trauma (Marsee, 2008; Ford et al, 2012). For example, research has identified emotional dysregulation and PTSD as mediating the pathway between trauma exposure and reactive aggression (Marsee, 2008; Hecker et al, 2015).

Reactive aggressive individuals behave aggressively in response to a perceived threat or provocation whereas proactive aggressive individuals behave aggressively to achieve certain goals. Although there may be a link between child maltreatment and proactive aggression, studies tend to find a stronger link between maltreatment and more emotionally charged behavior like reactive aggression (Steiner et al, 2011; Ford et al, 2012).

These findings are particularly important as they closely link violence with emotional trauma as opposed to antisocial and hardened attitudes (Steiner et al, 2011). Additionally, they illustrate a potential pathway in which maltreatment negatively influences cognitive and emotional development, which in turn increases the chances of reactive violence. Despite these illuminating findings on mechanisms of the transmission of violence, there remains a gap in the research regarding why an extreme variation of level of aggressive behavior exists among children maltreated by their family. Some children exposed to family victimization show serious adjustment difficulties in all categories of trauma symptoms, while other children may experience very little adjustment issues (Alexander, 2015). Identifying which child victims are at risk of perpetrating violence during childhood and later on in adulthood and why, is quite challenging due to the numerous factors that are empirically shown to predict violence (Resnick, Ireland & Borowsky, 2004; Douglas & Skeem, 2005) and the inherent challenges of conducting predictive research. According to trauma theory, the maltreatment type that produces the most effects associated with aggression (e.g., brain injury, cognitive deficits, antisocial attitudes), will essentially be the maltreatment types most strongly linked to violent behavior (Ford et al, 2012). These same children may also be the ones to benefit the most from a healthy social support system and close relationships with non-abusive members of their family (Perry, 2000; Charuvastra & Cloitre, 2008).

Given the research indicating that violence can be a direct or indirect effect of other trauma resulting from maltreatment (Steiner et al, 2011; Ford et al, 2012; Alexander, 2015), it is important for studies to assess the impact of different types of maltreatment on chances of engaging in *violent behavior specifically*, in addition to measures of overall externalizing behavior. For example, maltreated children that score high on externalizing measures need not be violent, and maltreated children scoring low on externalizing measures, may indeed exhibit aggression and violence. This is partially due to the broad nature of externalizing behaviors (running away, throwing a tantrum, acting out on one end of the spectrum, getting into fights, behaving aggressively on the other end of the spectrum). Additionally, given that maltreatment types often coexist, it is imperative to isolate the effect of one type of victimization on violence by controlling for other types. The following sections review the most notable studies that examine the relationship between each type of child maltreatment and the likelihood to engage in aggressive acts and/or violence, followed by a review of research studies that examine the effects of multiple-type maltreatment on commission of a variety of violent and aggressive behavior.

The Association Between Childhood Neglect and Violence Commission

The role of neglect in the intergenerational transmission of violence and trauma has been largely understudied in part because researchers and practitioners did not quantify it similarly to physical and sexual abuse (Stoltenborgh, 2013). Abuse often leaves visible marks, whereas signs of neglect may not be as visible (UDHHS, 2006). Despite neglect being the most prevalent type of child maltreatment, it has not been as much of a research and policy focus until somewhat recently, hence the term “the neglect of child neglect” coined by the researchers who examine the dynamics of child neglect (Lamb, 2003; Stoltenborgh, Bakermans-Kranenbrug, & Ijzendoorn, 2012). Researchers now understand the complexities associated with childhood

neglect and how such neglect can be a traumatic experience for children and in some cases as damaging as physical abuse (Smith, Ireland, & Thornberry, 2005). Despite this new knowledge, studies often fail to distinguish between the effects of neglect and abuse and instead lump them together (Bland, Lambie & Best, 2018). The prevalence of co-morbidity among child neglect, abuse and other maltreatment types can contribute to the gap in research regarding the specific link between neglect and likelihood of violence. In their recent review on the link between neglect and violence, Bland, Lambie, and Best (2018) recommended that future studies should isolate the effects of child neglect from physical abuse when exploring the link between maltreatment types and violence to fully understand each type of maltreatment's influence on violence and aggression.

Much of the research that has examined the effects of child neglect on child behavior has focused on general delinquency outcomes and mental health symptoms such as substance abuse and PTSD (Ireland et al, 2002; Chapple, Tyler & Bersani, 2005). These studies have collectively suggested that childhood neglect interferes with healthy mental, emotional and physical development, thus increasing the likelihood of negative mental health symptoms and poor relationships (Bolger & Patterson, 2001; Ireland et al, 2002; Chapple, Tyler, & Bersani, 2005). Although the majority of research on child neglect has focused on psychological and developmental outcomes or focused on the joint effects of neglect and abuse on violence, there are a few studies that have examined the specific relationship between childhood neglect and aggression and violence. Of these studies, most have found a link between neglect and aggressive outcomes (for exception see: Zingraff et al, 1993). Using the same U.S Bureau of Justice Statistics data as Widom & Maxfield (2001), Grogan-Kaylor & Ottis (2003) found that almost half of the sample experienced physical neglect during childhood, and even after

controlling for gender, age, race, and abuse, child neglect significantly predicted adult violent criminal arrest (Grogan-Kaylor & Otis, 2003). Since research indicates that women commit less violence overall (Kellerman & Mercy, 1992; Tjaden & Thoennes, 2000), findings that demonstrate a link between neglect and aggressive behavior for women are signifying of the strong influence of neglect on violence.

Bland and colleagues, 2018 used longitudinal data to explore the relationship between child abuse, neglect, and violence in disadvantaged youth. They found that both abused and neglected children were significantly more likely to be convicted of a violent crime compared to non-maltreated youth (Bland, Lambie & Best, 2018). Researchers Kotch and colleagues, 2008 examined the relationship between childhood neglect until age 2 years and later childhood aggression in a prospective cohort of 1,318 at risk youth. Findings showed that early childhood neglect significantly predicted higher aggression scores compared to later neglect and early or later abuse. Researchers concluded that neglect in the first 2 years of life may be more instrumental in predicting aggression than maltreatment at any other age (Kotch et al, 2008). These findings are consistent with research demonstrating that the effect of maltreatment types on aggression can depend on the age in which the maltreatment is experienced. Emotional neglect in very young children has been shown to be a stronger predictor of aggression and externalizing behaviors in later childhood compared to emotional neglect during other developmental periods (Manly et al, 2001). Similarly, other bodies of research have established that childhood deficits in the executive functioning and cognitive and developmental delays are predictive of subsequent aggression and violence (Raine, 2002; Giancola, 2000; Brocki & Bohlin, 2004; Bennett et al, 2005). Furthermore, studies have found that executive functioning problems are related to aggression even after controlling for key variables like general memory,

IQ, and ADHD (Deguine et al, 2004; Giancola et al, 1998; Toupin et al, 2000). These findings are instrumental to understanding the link between neglect and violence since a number of studies that have examined effects of neglect, both physiological and psychological, found that childhood neglect is independently associated with impaired cognition and developmental delays (Strathearn et al, 2001; Mills et al, 2011).

Recent research has identified cognitive and emotional processes, such as emotional regulation and self-control, as a consistent significant mediating factor between childhood neglect and subsequent violence (Chapple, Tyler & Bersani 2005; Kim, & Cicchetti, 2010; Lee & Hoaken). Thus, it is important to mention studies that have found significant links between childhood neglect and cognitive/emotional processes. A series of notable prospective studies examining the lasting impact of childhood neglect was conducted on the effects of abandonment and neglect on Romanian children (Nelson et al, 2007; Zeanah et al, 2009). This study began by assessing 136 children living in Bucharest orphanages from birth. Half of the children were randomly assigned to move into foster families, while the other half remained in the care of the institution. Nelson and colleagues, 2007 examined the children in various areas of development and mental health throughout the years. Findings revealed that the institutionalized children, characterized by emotional and psychological neglect, had significantly more delays in motor development and cognitive functioning and higher rates of psychiatric disorders than the foster care group. Children who were removed from the institution before age 2 years improved the most on the socio-emotional and cognitive measures. Additionally, MRI scans revealed that early institutionalization changed both function and structure of the brain, resulting in decreased brain activity overall and decreased activity in areas responsible for executive functioning (Nelson et al, 2007; Zeanah et al, 2009)

Although the landmark study on effects of childhood neglect on Russian orphans did not assess specifically for violence, the resulting cognitive and social deficits are prime pathways towards violent behavior (Lee & Hoaken, 2007). Although there are other pathways linking child neglect and violence, research efforts are concentrated on cognitive and emotional processing factors given the impact of physical and emotional neglect on a child's brain development (Chappi, Tyler, & Bersani, 2005)

The Association Between Childhood Physical Abuse and Violence Commission

Unlike child neglect, a considerable amount of research and policy efforts have focused on examining the predictors and consequences of child physical abuse, especially physical abuse within the family. As previously noted, much of the research supporting the cycle of violence originated from social learning theorists who observed that children who were exposed to intimate partner violence and/or physically abused were more likely to adopt rules and values related to the use of violence to solve problems or to change the behavior of others (Bandura, 1973; Gelles, 1972). Hence, children exposed to intimate partner violence or physical abuse, will be more likely to grow up and engage in violence within their own families (Widom, 1989; Green, 1998; Lieve et al, 2015).

One of the most consistent findings in the child maltreatment literature is that children who are victims of family violence are more likely to grow up to be abusers themselves and/or engage in violent behavior than youth who did not experience physical abuse (Kempe et al, 1962; Gelles, 1974; Widom, 1989). The earlier studies documenting this finding come from research examining cases of psychiatric patients who had committed violent crimes. The majority of these patients had a history of being physically abused (Satten et al, 1960; King, 1975). Additional studies in the 1980's found that violent incarcerated offenders are more likely

than any other types of offenders to self-report a history of physical abuse or exposure to family violence (Rhoades & Parker, 1981; Strauss, 1985). Many of these earlier studies failed to use control groups or used data solely from institutionalized individuals, thus limiting the generalizability and validity of the cycle of violence phenomenon.

Recent studies that have strengthened the methodology used to explore the cycle of violence phenomenon, such as using matched control group designs or studying the transmission of violence among institutionalized and non-institutionalized individuals, have also found significant positive relationships between childhood abuse and violence (Widom, 1989; English, Widom & Bradford, 2002; Silva et al, 2012). In several longitudinal studies, significant associations between physical child abuse and later violence have been found (Widom 1989; Gomez, 2010). Results from Widom's series of studies using a large sample size of 1,576 youth revealed a strong relationship between being physically abused as a child and later arrests for violent crime (Widom 1989).

In a study examining the links between gender, exposure to family violence, and perpetration of family violence in adulthood, results showed that both men and women who experience child abuse reported higher rates of perpetrating violence against their own children and against intimate partners, providing evidence supporting the intergenerational transmission of violence phenomenon (Heyman & Slep, 2002). In another study to examine the effects of child abuse on subsequent family violence perpetration Gomez (2010) conducted a longitudinal study using data from 4,191 respondents from the National Longitudinal Study of Adolescent Health (Add Health) to study the relationship between child abuse, adolescent dating violence, and intimate partner violence. Results indicated that child abuse significantly predicted intimate partner violence perpetration; victims of child abuse had 97% higher odds of committing

intimate partner violence than children not abused. The significant relationship was present for both men and women victims of child abuse. Despite the longitudinal research design, questions about victimization in childhood were only asked in wave 3 of Add Health, thus the retrospective nature of the victimization data is a limitation (Gomez, 2010). As indicated previously, the majority of research that explores the connection between any type of child maltreatment and subsequent violence/aggression relies on retrospective measures. Additionally, this study included a joint measure of sexual and physical child abuse, which makes it hard to discern which type of child abuse is closely linked with future intimate partner violence.

Few studies have examined the relationship among harsh physical punishment, child abuse, and violence across the lifespan (Afifi et al, 2017). As mentioned earlier in the introduction, although physical punishment is not in itself classified as child abuse, certain types of harsh abuse due indeed qualify as child maltreatment. To illustrate the damaging consequences of harsh physical punishment, Afifi and colleagues, 2017 analyzed data of 34,402 adults from the National Epidemiologic Survey on Alcohol and Related Conditions. Their findings suggested that harsh physical punishment is related to significantly higher odds of committing sexual and physical abuse, and various types of neglect. Additionally, childhood harsh physical punishment was related to a significant increase in the likelihood of perpetrating and experiencing intimate partner violence (Afifi et al, 2017). This finding is indicative of the importance of studying a wide variety of child maltreatment experiences.

While the majority of studies exploring the cycle of violence focus on the link between childhood physical abuse and adult family violence perpetration, (Heyman & Slep, 2002; Gomez, 2010), some look at more immediate effects of child abuse, such as violent behavior in childhood and adolescence. A study examining the link of abusive physical discipline in

preschool children to self-report violence in adolescence, found that physical abuse was a significant predictor of adolescent violence after controlling for child sexual abuse, mother-child interaction quality, age, gender and SES (Herrenkhol et al, 1997). Salzinger and colleagues, 2007 conducted a prospective study to assess the relationship between physical child abuse and violent delinquency in adolescence. A hundred physically abused preadolescents were matched to their non-abused counterparts and studied at both 10 and 16 years of age. Results indicated that there was a significant relationship between childhood abuse and violence during adolescence, and that this relationship was mediated by parental factors such as level of attachment to parents (Salzinger, Rosario, & Feldman, 2007). By uncovering some of the mediating mechanisms of why child abuse may be linked with violence, studies like Salzinger et al, 2007 provide insight as to why many children who are abused in childhood do not go on to engage in violence.

Another study to explore mediating mechanisms of the relationship between childhood physical abuse and violence involved a clinical sample of 95 incarcerated males. Lewis and colleagues, 1989 explored the role of neuropsychiatric deficits in contributing to adult perpetration of violence in inmates. They found that the males either abused or exposed to family violence in childhood who also had the highest level of neuropsychiatric impairment committed the greatest number of violent crimes, suggesting an interaction between cognitive and neurological vulnerabilities with a history of abuse or exposure to family violence (Lewis et al, 1989).

In addition to exhibiting actual violence, research has demonstrated a link between child physical abuse and aggressive behavior. Researchers assessed the impact of different types of maltreatment on socioemotional development of children in a day camp environment. Children who experienced abuse within the family are more likely to engage in aggressive behavior while

playing with their peers (Kaufman & Cicchetti, 1989). A study examined the mental health outcomes of 167 children who experienced physical abuse or witnessed violence. Approximately one-third of the children had been physically abused, and almost half had witnessed violence in either their home or neighborhoods. Being physically abused or witnessing violence was a significant predictor of internalizing symptoms such as depression and anxiety, but also for externalizing symptoms of anger and aggression (Johnson et al, 2002). Although this study did not isolate the effects of child physical abuse, it was able to capture the impact of violent victimization.

Certain studies have failed to find a statistically significant relationship between physical abuse in childhood and aggressive or violent behavior (McCord, 1983; Jennings et al, 2014). In 1983, McCord conducted a prospective study in which 232 males were ranked according to their treatment by parents. Case records between 1939 and 1945 were used to divide the boys into categories of “neglected”, “abused”, “rejected”, or “loved. Between 1975 and 1979, the men were assessed regarding their living conditions, crime, and social problems. Inconsistent with the intergenerational transmission of violence assumption, children who were classified as rejected, not abused or neglected, were more likely to have committed serious crimes like assault or burglary. However, her findings revealed that half of the abused and/or neglected children suffered from mental health issues later on and engaged in some type of criminal behavior (McCord, 1983). This study did suffer from measurement issues related to the criteria for abuse, neglect, and rejection, as noted by Widom (1989).

Using a sample of South Korean university students, researchers examined the effect of physical child abuse on experiencing and/or perpetrating physical dating violence³ using

³ The Revised Conflict Tactics Scale was used to measure both variables

propensity score matching. Results initially showed that there were significant differences between students who experience physical abuse in childhood and those who did not. However, once the groups were matched on relevant characteristics, child abuse was no longer a significant predictor of dating violence. Both groups were equally likely to experience dating violence. These findings suggest a spurious relationship between child physical abuse and dating violence perpetration for South Korean college students (Jennings et al, 2014). These findings are indicative of the importance in examining how the relationship between maltreatment and propensity to commit violence may vary depending on cultural and social factors.

Despite several studies that did not produce results supporting the cycle of violence perspective (McCord, 1983; Jennings et al, 2014), majority of the studies suggest a significant link between child physical abuse and likelihood of engaging in violence. The most likely explanation for these mixed findings is that violent and aggressive behaviors are very complex processes with numerous predictive factors, copious moderators and differential pathways. Furthermore, studies examining child abuse and/or child maltreatment often fail to isolate the specific effect of child physical abuse, and instead collectively look at all types of maltreatment including witnessing domestic violence, sexual abuse, and neglect. Given the significant relationship between physical child abuse and other types of maltreatment, it is necessary for studies to control for these other abuse types to increase the validity of findings that indicate a relationship between child physical abuse and violence.

The Association Between Witnessing Domestic Violence and Violence Commission

As discussed previously, the exposure to domestic and/or family violence is one of the most common forms of child maltreatment and lies at the intersection of child abuse, neglect, and domestic violence (Gelles, 2007). Assessing whether childhood exposure to domestic

violence can lead to violent or aggressive behavior by exposed children is extremely challenging to assess. The relationships between witnessing domestic violence and perpetrating violence is mediated by many factors, including brain development, social learning processes, antisocial attitudes and beliefs, impaired parental bonding and other family dysfunction (Delsol & Margolin, 2004; Fergusson et al, 2006; Tsavoussis et al, 2014). Also, as indicated by Delsol & Margolin (2004), since child witnesses of family violence are also exposed to a generally unhealthy environment, other experiences may account for the relationship between exposure to domestic violence and future adult intimate partner violence perpetration and violence in general. Often when researchers measure family violence exposure, the primary type of violence they measure is violence between intimate partners that is witnessed by children. Thus, much of the research findings that do exist are essentially measuring the effects of witnessing intimate partner violence as opposed to parent to child violence or violence between siblings or other family members living in the household. Little research exists on the specific effects of the different types of domestic violence children are exposed to (Teicher & Vitaliano, 2011).

Although the studies described in this section are not without methodological and measurement limitations, they do provide a general overview on the status of empirical research on the association between childhood exposure to domestic violence and aggression and violent behavior. Some of the studies address the recommendations above, while others offer valuable information on the dynamics of childhood exposure to domestic violence.

Among the group of studies to investigate the impact of exposure to intimate partner violence on subsequent domestic violence, Ehrensaft and colleagues (2003) studied a sample of 543 children over a 20-year period to test the effects of exposure to domestic violence between parents and maltreatment on future intimate partner violence. Following conduct disorder,

witnessing domestic violence between parents was the strongest predictor for one's own perpetration of intimate partner violence in adulthood. This effect was statistically significant for both sexes and remained even after controlling for conduct disorder, SES, and maternal parenting style (Ehrensaft, et al, 2003). In another study investigating the impact of exposure to intimate partner violence, data from a sample of 2,143 adults was used to study the relationship between witnessing marital aggression and/or child abuse with severe marital aggression in the next generation (Kalmuss, 1984). Results showed that individuals who reported observing marital violence were more likely to engage in marital violence themselves compare to children who reported being hit by their parents but not witnessing marital violence. This transmission observation was similar for both men and women.

Kwong and colleagues, 2003 investigated the cycle of violence in family of origin in a sample of 1,248 adults in Vancouver found that all types of family of origin violence exposure (father to mother and mother to father, father to self and mother to self), predicted relationship abuse in the next generation. There was no evidence to support a gender-specific cycle of transmission of relationship violence (Kwong et al, 2003). That same year, another study examined the association between children's exposure to their mother being abused and subsequent internalizing and externalizing behaviors in a sample of 167 2 to 17-year-old children. When compared to the control group of children who had not witnessed intimate partner violence, children exposed to marital IPV were significantly more likely to have borderline to clinical level scores on aggressive and delinquent behavior after controlling for age and sex. Of key importance is that the relationship between witnessing marital intimate partner violence and externalizing behaviors was independent of any co-occurring child abuse (Kernic et al, 2003).

Although the family violence literature is full of research utilizing American and European samples, a growing awareness of the negative impact of such violence on children has led to an increase in family violence research across the world. For example, Murshid, 2015 assessed the association between childhood witnessing of marital violence and subsequent perpetration of marital violence in adulthood in a sample of 3,396 men in Bangladesh. Findings revealed a statistically significant relationship between childhood exposure to domestic violence and engaging in marital violence in adulthood, providing support for the intergenerational transmission of violence hypothesis (Murshid, 2017). A cross sectional study of 1,185 adolescents living in Palestine revealed a relationship between witnessing violence in their family and numerous psychosocial and behavior problems including aggressive behavior. One of the very few studies to examine the effects of different types of domestic violence exposure, this study also showed that greater frequency of witnessing father to mother violence was significantly associated with increasingly more aggressive behavior in child witnesses, however, the more that participants witnessed parent to sibling physical violence, the more likely they were to engage in delinquency and have social problems, but not significantly more likely to exhibit aggression. (Haj Yahia & Abdo-Kaloti, 2008).

While some studies focus on the effect of witnessing family violence on intimate partner violence, other studies examine childhood effects of exposure to domestic violence (Holmes, Voith, & Gromoske, 2015; Haj Yahia & Abdo-Kaloti, 2008). Researchers investigating the effect of intimate violence exposure on aggressive and prosocial behavior using a longitudinal design with a sample 1, 125 children from the National Survey of Child and Adolescent Well-Being. Children were assessed on exposure to intimate partner violence, aggressive behavior, prosocial skills and a host of other variables between the ages of 3 and 4 years old, and then re-

assessed on the measures when the children were between 5 and 7 years old. Results revealed that witnessing intimate partner violence was associated with increased aggressive behavior at both times of measurements.

Given the plethora of research on the effects of exposure to family violence, researchers have conducted meta-analyses to estimate the overall effect of exposure to domestic violence and a variety of negative symptoms and behaviors, including violence. In a meta-analysis of 60 studies that examined the relationship between childhood exposure to domestic violence and prevalence of internalizing, externalizing, and trauma symptoms, results showed a moderate effect between the exposure to domestic violence and negative symptomology in children. The relationship was stronger for boys, such that boys who witnessed domestic violence were more likely to exhibit externalizing behavior like aggression than girls exposed to domestic violence (Evans, Davies, & DiLillo, 2008). Given that there was a lack of longitudinal research on this topic in 2008, the Evans et al (2008) meta-analysis consisted primarily of cross sectional studies. Since then, there has been an increase in longitudinal research, prompting other researchers to conduct new meta analyses on studies examining the association between exposure to intimate partner violence and negative consequences in children

In reviewing 74 studies that examined the longitudinal links between childhood witnessing of intimate partner violence and a variety of adjustment problems, researchers found that exposure to intimate partner violence is prospectively linked with both internalizing and externalizing problems (Vu et al, 2016). Although aggression was not a specific outcome variable in the meta-analysis, measurements of externalizing behaviors included aggressive and violent behavior. In regards to treatment and prevention, it is important to point out that the longitudinal nature of the studies in this meta-analysis made it possible for the researchers to see

that although there was a weak association between witnessing intimate partner violence and adjustment problems over time, the association actually increased significantly for both externalizing and internalizing problems ten years after initial IPV exposure. Vu and colleagues, 2016 offer two equally valid explanations for this finding. First, this finding is indicative of a sleeper effect, in which certain adjustment problems like aggression may not appear soon after witnessing intimate partner violence but instead appear later in life as a response to certain situations and life events (Vu et al, 2016). Secondly, it could be that there was no sleeper effect, but rather an increase in the association between intimate partner violence exposure and adjustment problems is a result of cumulative effects over time (Vu et al, 2016). Either way, these findings hold important implications for prevention and treatment programming of children exposed to family violence.

The Association Between Childhood Sexual Abuse and Violence Commission

When sexual abuse occurs during childhood, it can interfere with normal social and developmental growth, thus leading to a host of problems during childhood and later on in life (Maltz, 2002). Majority of the studies investigating the impact of childhood sexual abuse focus on outcome variables of internalizing behaviors and mental health symptoms such as post-traumatic stress, sexual offending, general delinquency, or sexual offending. Collectively these studies have established a strong, but complex association between childhood sexual abuse and negative mental, behavioral and physical health consequences (Walsh, Frotier, & DiLillo, 2010). Comparison and follow-up studies show a greater likelihood of externalizing behaviors such as running away, vandalism, and juvenile delinquency among sexually abused individuals than those not sexually abused (Chandy, Blum, & Resnick, 1996; Smith & Thornberry, 1995). The limited studies examining the link between sexual victimization in childhood and violence

collectively have produced mixed findings (Siegle & Williams, 2003; Zhang et al, 2016). While all types of maltreatment in childhood have been linked to aggressive and/or violent behavior, certain studies have found that sexual abuse in particular is associated with a higher likelihood of sexual aggression, while physical abuse and neglect in childhood are linked with nonsexual aggression (Lisak, Harper & Song; Knight & Prentky, 1990).

The overall link between sexual violence in childhood and likelihood of committing violence is not well established partially due to the methodological issues present in child maltreatment research in general, but also due to the broad range of sexual victimization experiences and a wide range of sexually offending behavior that research is not always able to measure (Barnett, Miller-Perrin & Perrin, 2005; Barth et al, 2013). For example, in their study comparing sexual abuse experiences of rapists to those of child offenders, Overholser and Beck, 1986 found that 58% of the child molesters reported having been molested as children compared with 25% of the rapists and 5% of the matched controls. Hence the violent sexual perpetrators (rapists) were less likely to have been sexually abused than the non-violent sexual offenders (child molesters) (Overholser & Beck, 1986). Similarly, Ramirez and colleagues, 2015 examined the relationship between childhood abuse and anger and violent behavior in sex offenders. Sex offenders who were rated as having greater levels of anger were more likely to have used violence while committing their crime and were more likely to have experienced some form of child abuse. Although this study did not indicate a link between sexual abuse specifically and future violent sex offending, the childhood histories of offenders convicted for a variety of sex crimes are characterized by both physical and sexual abuse (Ainsworth, 1989; Gannon et al, 2008). These type of nuanced differences in sexual offending and sexual victimization experiences are usually not addressed in most of the research on childhood sexual abuse or

sexual offending (Barnett, Perrin & Perrin, 2005), which is unfortunate as these differences may partially explain the variations in research findings.

Some studies focus specifically on the impact of sexual abuse on violent behavior, while other studies, such as Siegal & Williams's 2003 study, focus on criminal offenses including violent crimes. In their prospective study on the impact of sexual abuse on likelihood for a female to offend, Siegel & Williams found that child sexual abuse was a statistically significant predictor of certain types of offenses. In relation to violence, the authors found that women sexually abused as children were more likely to have been arrested for violent crimes in childhood and adulthood compared to the non-sexually abused matched comparison group. Sexually abused women were more likely to have been arrested for violent as opposed to property crimes during their juvenile years, but equally likely to be arrested for both types of crimes during adulthood (Siegle & Williams, 2003). This finding is illustrative of the importance of longitudinal studies that examine the influence of abuse on likelihood of committing crime throughout the lifespan. Using data from a longitudinal study of incarcerated juveniles in Florida, researchers investigating the relationship between various family factors and victimization with self-reported delinquency including drug use and crimes committed against people (violence). Results revealed a significant relationship between childhood sexual victimization and four of the five delinquency scales including crimes against people (Dembo et al, 1992), thus elucidating on how childhood sexual abuse impacts short term aversive behavior.

In contrast to the studies above, the following studies focus on the impact of sexual abuse on general aggression or violent behavior as opposed to actual crime. Using a sample of girls between the ages of 13 and 18 in Kolkata, India, researchers explored the incidence of aggression among sexually abused trafficked and sexually exploited girls. They selected 120

trafficked and sexually abused girls from shelters around Kolkata to compare to randomly selected 120 non-sexually abused. Results revealed a statistically significant relationship between sexual abuse and aggression levels. 42.7% of the sexually abused trafficked girls reported moderate levels of aggression, and 26.7% reported high levels of aggression, as measured by a 30-item aggression scale assessing for reactionary attitudes, preference for fighting, aggressive tendency and drive for dominance. Although the study did not assess for the influence of perpetrator victim relationship on aggression, 29.2 % of the girls were first sexually abused by their relatives (Deb, Mukherjee, & Mathews, 2011).

Swanston and colleagues, 2003 conducted a longitudinal study to examine if sexual abuse is related to delinquency and aggression. Using a sample of Australian children who presented to hospitals, the researchers compared 38 sexually abused children to 68-non-sexually abused children 9 years after their original hospital intake. After controlling for age, sex, SES, and living situation at time of intake, results revealed a statistically significant relationship between history of sexual abuse and parent and self-report of aggression (Swanston, et al, 2003). DiLillo and colleagues, 2000, examined the association between childhood sexual abuse and later abusive parenting styles. The researchers compared 138 low SES mothers with a history of childhood sexual abuse to 152 low SES mothers without a history of sexual abuse and found that the sexually abused mothers were more likely to have physically abused their own children. This significant relationship remained even after controlling for the mother's history of childhood physical abuse, indicating a specific effect of sexual abuse during childhood. Additionally, maternal anger mediated this relationship. (DiLillo, Tremblay, & Peterson, 2000). While the above set of studies have found significant associations between childhood sexual abuse and

violence and aggression, the next set of studies either failed to find a link, or instead found other factors that accounted for the relationship between sexual abuse in childhood and violence.

Zhang and colleagues conducted a study on the impact of sexual abuse on psychological distress and violence among 358 incarcerated underprivileged male youth in China. Results indicated that the prevalence of child sexual abuse was 21.8% higher among the juvenile inmates compared to studies with Chinese student samples. The juvenile male inmates who were sexually abused in childhood were more likely to exhibit psychological distress symptoms than their non-abused counterparts. When including both psychological distress and childhood sexual abuse in the model examining correlates of violent offending, results revealed that psychological distress was a weak, but significant predictor of violent offenses, while child sexual abuse did not significantly predict violent offenses (Zhang et al, 2016). Researchers investigated the impact of childhood sexual abuse on adult parenting style in a sample of African-American mothers of low SES. Childhood sexual abuse survivors reported higher rates of psychological aggression and used corporal punishment more frequently than the mothers who were not sexually victimized in childhood. However, when sociodemographic factors and other measures of childhood adversity for accounted for, the relationship between child sexual abuse and aggression became nonsignificant. Results indicate that other types of adverse experiences have a stronger influence on use of corporal punishment and psychological aggression in the sample of mothers (Barnett, 2009).

These findings collectively suggest that although there may be a relationship between sexual abuse in childhood and perpetration of aggressive or violent behavior, in some cases the relationship may be contingent up other factors such as additional childhood adversity experiences or cultural context (Barnett et al, 2009; Zhang et al, 2016). The studies reviewed so

far have examined the relationship between one particular form of maltreatment (neglect, physical abuse, witnessing family violence, and sexual abuse) and aggression in either childhood or adulthood. Although very valuable, these studies do not lend much insight into how typology of maltreatment may influence aggressive and violent behavior. The next set of studies have been conducted with the purpose of examining the impact of different types of childhood maltreatment experiences as they relate to a variety of aggressive or violent behavior.

The Relationship between Different Types of Maltreatment and Violence.

There is empirical evidence that the effects of maltreatment can vary based on the type of abuse experienced (Higgins & McCabe 2001; Powers, Ressler & Bradley, 2009; Hahm, 2010). For example, scholars argue that there are unique feelings and experiences to victims of sexual abuse, such as stigmatization, shame, and interference with sexual development, which may not be as pronounced in victims of other types of abuse (Finklehor & Brown, 1985). Additionally, child witnesses of intimate partner violence may suffer from a unique form of guilt due to their powerlessness to help their loved one being abused (Groves, 1999) while emotionally neglected and sexually abused children may have greater difficulties in forming secure adult relationships compared to other types of victimized children (Alexander, 2015). In their recent review on the relationship between neglected children and violence, Bland, Lambie & Best, 2018 discuss studies that examine the relationship between multiple types of child maltreatment and violence. Their review highlighted the importance of including child neglect as a separate category when studying the relationship between child maltreatment and both childhood and adult violence, thus calling attention to the importance of understanding maltreatment subtypes (Bland, Lambie & Best, 2018). Research also suggests that children with multiple- type maltreatment (e.g., experiencing more than one form of victimization) have greater negative symptoms than children

who experience one type of maltreatment (Higgins & McCabe, 2001; Finkelhor et al, 2009; Hamby, Finkelhor, & Turner, 2012; Wang et al, 2012). These variations in the dynamics in the different forms of maltreatment and the fact that certain types of maltreatment exist comorbidly (Higgins & McCabe, 2001), isolating the effects of each type of maltreatment may provide insight as to which forms exert the most influence on behavioral outcomes such as violence. The studies described in this section have either 1. compared the different child maltreatment types as they relate to aggression and violence or controlled for certain maltreatment types to isolate the effect of one type of victimization on likelihood of violence, or 2. have examined the effect of some form of multiple-type maltreatment experiences on likelihood of engaging in aggressive or violent behavior

One of the earliest studies to explore the differential impact of maltreatment types, Reidy's 1977 research investigated the aggressive traits of children who had been physically abused compared to non-abused neglected children to isolate the effects of abuse. Study findings showed that although both abused and non-abused neglected groups displayed significantly more aggressive behavior than the control group in a monitored school setting, physically abused children were significantly more aggressive than the other 2 groups in a free play environment. (Reidy, 1977). One of the most comprehensive prospective studies on the relationship between childhood maltreatment and violence revealed that overall childhood abuse and neglect increased the odds of adult criminality by 29% and being abused or neglected as a child increased the likelihood of an arrest for a violent crime by 30 % (Widom, 1989; Widom & Maxfield, 2001). Contrary to what is theoretically expected in the cycle of violence literature, findings also revealed that children who reported only neglect were almost as likely to be arrested for crime as physically abused children, and more likely to be arrested for a crime than individuals who

reported sexual abuse only. The relationship between neglect and violence remained even after controlling for key variables such as age, sex, and race. (Widom & Maxfield, 2001).

In a more recent study investigating the association between abuse and neglect in childhood with violent offending, researchers found that for both boys and girls, a history of sexual abuse was significantly related to sexual offending, while a history of childhood physical abuse was significantly related to violent offending (Ascher et al, 2015). Although female juvenile delinquents were more frequently victims of sexual and physical abuse, male offenders committed more sexual and physical offenses against people. These findings are consistent with other research suggesting that the relationship between child maltreatment and violence is stronger for males (Evans, Davies, & DiLillo, 2008; Sedlack et al, 2010; Holmes, Voith, & Gromoske, 2014).

Moylan and colleagues, 2010 investigated the effects of physical child abuse and witnessing domestic violence on various internalizing and externalizing behaviors in youth. Their prospective study consisted of 457 male and females from Pennsylvania who were followed from ages 18 months to 6 years until an average of 18 years. Primary findings revealed that children who experienced either physical abuse or exposure to domestic violence had higher levels of externalizing behaviors compared to youth not exposed to either type of violence. While children who experienced both physical abuse and exposure to domestic violence had significantly higher scores on all the nine outcomes used to measure internalizing and externalizing behavior, including the aggressive behavior subscale, children experiencing either domestic violence or physical abuse had higher scores on only some of the subscales (Moylan et al, 2010). Since both internalizing and externalizing symptoms were high in children exposed to multiple type maltreatment, the findings support the idea that aggression may

specifically be a trauma symptom due to an aversive traumatic experience. These findings suggest an additive effect of multiple types of abuse, consistent with Trauma Theory.

Vachon and colleagues, 2015 used a combination of child self-reports and official records to investigate the effects of subtypes of child maltreatment in a sample of 2,292 children ages 5 to 13 years-old. Results revealed that all the maltreatment types except sexual abuse were significantly predictive of a variety of externalizing behaviors including aggression and fighting. The relationship between neglect-only maltreatment and aggression produced the largest effect size compared to the other maltreatment groups (Vachon et al, 2015). This finding is in line with research showing that neglect is just as likely if not more likely to be related to aggression and violence (Smith et al, 2005; Evans & Burton, 2013) but in contrast to studies that find that physically abused children are more likely to be aggressive or violent compared to other types of maltreated children (Widom & Maxfield, 2001; Mersky & Reynolds, 2007).

Given the scarcity of research investigating how specific types of maltreatment related to delinquent offending, Evans & Burton, 2013 conducted a study to examine the impact of five types of maltreatment on subsequent delinquency, including violent offending. Data was collected from 161 adolescent males incarcerated in residential facilities in the Midwest. General findings including that the more frequently a child was maltreated, the more frequently he committed offenses. Physical neglect emerged as the most significant predictor of all types of offending, including violent crime. Emotional neglect and sexual abuse did not have a statistically significant influence on violent crime but did have a significant impact on nonviolent offending. Past research that has found neglect to predict violence, did not examine the differential impact of the types of neglect on violence (Mersky & Reynolds, 2007). Thus, this

study was able to pinpoint physical neglect as the factor to account to increase in violence and other offending (Evans & Burton, 2013).

Although Mersky & Reynolds were not able to disentangle the dynamics between the different types of neglect, their prospective longitudinal study produced notable results that lend crucial insight into child maltreatment effects. Using data from the Chicago Longitudinal Study, the authors investigating the association between maltreatment and frequency of violent delinquency in a sample of 1, 404 low income minority children. Results suggested that maltreated children had higher rates of violence commission than non-maltreated children and that physical abuse and neglect were both related to a significant increase in both violent and non-violent offending. However, physically abused children engaged in significantly more violent offending than neglected children. Most importantly, this effect remained significant after accounting for numerous documented correlates of maltreatment and delinquency that capture both sociological and biological influences such as maternal unemployment and education level, low birth weight, race, gender, number of children in family, single parent family, and SES. The researchers caution that the presence of neglect with physical abuse may be the driving force behind the significant relationship between physical abuse and violent offending (Mersky & Reynolds, 2007).

Herrenkohl, Egolf & Herrenkohl, 1997 conducted a longitudinal study using 457 children from a variety of children welfare programs to study the impact of different types of maltreatment on assault and other forms of externalizing behaviors. The researchers used a combination of mothers' reports, child reports and observational data to analyze the various relationships between the family and parenting variables on assaultive behavior in adolescents. Results revealed that childhood physical abuse, sexual abuse, negative interaction, and neglect

all modestly but significantly predicted assault in adolescence after controlling for SES, age, and gender. Specifically, children with the most severe physical discipline during the preschool years were the most likely to engage in assaultive behavior in adolescence. The strongest relationship was between negative maternal/child interaction and assaultive behavior, followed by physical discipline and assault, and then sexual abuse and assaultive behavior. Interestingly, when sexual abuse, negative maternal interaction and joint maltreatment (sexual abuse and negative maternal interaction) were computed in the analysis, only the interaction term was significantly predictive of assault. Given the significant relationship between sexual abuse and lack of positive maternal behavior, the researchers concluded that although sexual abuse is a “distinct form of maltreatment, it is also associated to a “non-nurturant, hostile child rearing environment that gives rise to assaultive behavior” (Herrenkohl, Egolf & Herrenkohl, 1997, pg. 428).

In a continuation of research to study the differential impact of multiple forms of child maltreatment on various youth outcomes, Herrenkohl & Herrenkohl, 2007, examined the amount of overlap of multiple forms of child maltreatment and the predictive value of the maltreatment types on various internalizing and externalizing behaviors including the subscales of aggressive behavior and delinquent behavior. In addition to a significant overlap among the maltreatment types, one of the most notable findings is that while there was a strong positive relationship between the general measure of child maltreatment and family level stressors such as family cohesion, various personal parental problems and external constraints, only child maltreatment independently predicted internalizing and externalizing behavior (Herrenkohl & Herrenkohl, 2007). Given that one of the limitations of both prospective and retrospective research in the child maltreatment literature is the lack of accounting for additional measures of childhood and family adversity (both of which can predict violence and aggression), these findings illustrate the

power of child maltreatment to exert an influence on aggression independently of other adversity measures.

Heyman & Slep, 2002 investigated the impact of physical child abuse and witnessing domestic violence on adult violent behavior as opposed to childhood aggression as the previous studies. Using a nationally representative sample of 6,002 of adults, the researchers studied the relationship among history of child abuse, exposure to interparental violence and commission of family violence in adulthood. Men who experienced both child abuse exposure to intimate partner violence had double the risk of abusing their own partners. However, their risk for perpetration of child abuse was increased by any type of family violence exposure. The women exposed to both interparental violence and who were abused has a significantly higher risk for perpetrating child abuse, partner abuse, and experience intimate partner violence victimization in adulthood (Heyman Slep, 2002). Their findings call attention to the importance of understanding the additive and interactive effects of different types of child maltreatment to gain additional insight into the cycle of violence.

Like Heyman & Slep, Lisak, Hopper, & Song, 1996 also conducted a study on the relationship between maltreatment in childhood and adult violent behavior. Analyses were conducted on 595 male college students to specifically study the link between childhood sexual abuse, physical abuse, multiple abuse (sexual and physical) with perpetration of either sexual or physical abuse. Of the 120 perpetrators identified, 70% experienced either childhood sexual or physical abuse. However, consistent with the cycle of violence literature, majority of the victims did not perpetrate abuse themselves. Of the 154 men who reported sexual abuse, 60% also reported physical abuse, indicating a significant overlap between the two maltreatment types. Additional results revealed that men who committed the most sexual abuse experienced the most

severe sexual abuse, while men who committed the greatest amount of physical abuse also experienced the most severe physical abuse (Lisak, Hopper, & Song, 1996). This particular finding of the relationship between severity of abuse and severity of perpetration supports the trauma theory view of the cycle of violence. Additional notable findings included that physically abused men who became perpetrators had statistically significant higher levels of gender rigidity and emotional constriction compared to physically abused men non-perpetrators. The researchers theorize that these men must suppress the emotional states that result from their physical abuse, which potentially could suppress their capacity to empathize with others and in turn disinhibiting them from committing violence. Lisak and colleagues study is one of the very few to examine the influence of variables that mediate the relationship different types of child maltreatment and violence (Lisak, Hopper, & Song, 1996)

Despite the small sample size and thus limitations related to statistical power, Bevan & Higgins, 2002 study on the impact of five forms of child maltreatment on men's use of intimate partner is an important addition to the field of child maltreatment research. Bevan & Higgins collected data on maltreatment experiences, trauma symptoms, intimate partner violence perpetration and demographic and family variables in a sample of 36 men who sought treatment from a counseling center. As expected there were intercorrelations between physical and psychological spouse abuse with maltreatment, family cohesion, and trauma. The researchers found a high degree of overlap between the maltreatment types. findings revealed that exposure to family violence in childhood predicted psychological spouse abuse, while childhood neglect predicted physical spouse abuse. The researchers carefully note that the lack of significant relationship between childhood physical abuse and spousal abuse could be due to the low sample size. However, the results indicating a significant relationship between neglect and physical

spouse abuse suggests a greater role for child neglect in understanding the dynamics of the cycle of violence (Bevan & Higgins, 2002).

To understand the potential influence of typology of maltreatment on adult maladjustment, Higgins & McCabe, 2001, conducted a critical review of 29 studies in which retrospective reports of multiple types of child maltreatment and negative outcomes were analyzed. Although majority of the studies in the review did not assess for violence and aggression, they did find that adults who reported experiencing more than one type of child maltreatment, were more likely to have a variety of maladjustment problems (Higgins & McCabe, 2001). One of the studies examined by Higgins & McCabe found that a combination of physical and psychological maltreatment was associated with anger and aggression in a sample of 277 female college students. There was a stronger link between physical abuse and aggression than the other types of maltreatment and aggression (Briere & Runtz, 1990).

The last study to be described here is perhaps one of the only studies analyzing the influence of maltreatment typologies and post traumatic symptoms on criminality. While a few studies may acknowledge the role of trauma in either mediating or moderating the relationship between maltreatment and criminality (Lisak, Hopper, & Song, 1996), Elkit and colleagues, 2013 actually measured the impact of posttraumatic stress symptoms and different types of victimization experiences on criminal behavior. Using a random probability survey of 2,980 Danish young adults, Elkit and colleagues studied the relationship of four different childhood maltreatment types on seven different types of criminal behavior including violence. Results revealed that all three maltreatment types (psychological abuse, sexual abuse and multiple type abuse) significantly predicted criminality compared to the non-abused group. Also, the youth who exhibited PTSD, whether due to the abuse or other trauma, had double the risk of engaging

in crime (Elkit et al, 2013). This study's findings are relevant to the current's study theoretical framework in which the continuity of violence is hypothesized to be the result of cumulative trauma in response to childhood maltreatment, and therefore may be influenced by the type of maltreatment.

The above studies represent the efforts of family violence researchers to evaluate the influence of childhood experiences of multiple types of maltreatment on likelihood of engaging in various externalizing and violent behavior both in childhood and adulthood. While some studies examining a sole form of maltreatment have failed to find significant association between child abuse and violence (Zingraff et al, 1993) studies that compare multiple types of maltreatment appear to find that at least one type of maltreatment (e.g., physical or emotional neglect, exposure to violence, physical abuse, sexual abuse) predicts some form of aggressive behavior (Reidy, 1977; Widom 1989; Evans & Burton, 2013). One obvious explanation for this discrepancy in findings is the variation in study designs, reporting techniques of maltreatment and other methodological differences between studies examining the influence of one type of maltreatment compared to multiple types of maltreatment. However, these limitations exist in the multiple type maltreatment studies as well. Perhaps one of the explanations for certain studies that fail to find any type of association between sole maltreatment types and aggression, is that individual maltreatment types may only exert their influence in the presence of other maltreatment forms. Additionally, certain maltreatment forms such as physical abuse, are likely to be accompanied by other maltreatment types such as neglect. For example, if physical abuse, but not sexual abuse, is found to be related to violence, it may be due to the higher likelihood of neglect being present with physical abuse; therefore, neglect may be the driving force in this link. Thus, studies that do not assess for all forms of child maltreatment or account for the

presence of multiple forms of maltreatment will be less likely to capture the full scope of the victimization experience in childhood (Higgins, 2004; Mersky & Reynolds, 2007; Finkelhor et al, 2009).

Summary of Literature Findings and Contributions of this Study to Understanding the Cycle of Violence

Despite the variation in research design and methodology, the literature on the association between child maltreatment types and both childhood and adult violence perpetration collectively suggest a statistically significant association, albeit contingent on other factors such as severity of abuse (Lisak, Hopper, & Song, 1996). While some studies suggest that sexual abuse perpetration is predictive of violence (Herenkohl, Egolf, & Herenkohl, 1997; Ascher, 2015), other studies do not find such a relationship (Vachon et al, 2015). Despite being largely ignored in the child maltreatment literature until recently (Barnet, Miller-Perrin & Perrin, 2005), childhood neglect emerges as a consistent predictor of both childhood aggression and adult violence perpetrator (Herenkohl, Egolf, & Herenkohl, 2007; Vachon et al, 2015). Inconsistent with the social learning theory perspective on the cycle of violence, select studies find that the effect of neglect on violence is larger than the effect of childhood physical abuse on violence (Evans & Burton, 2013; Vachon, 2015).

Although these collective findings call attention to the intercorrelation among the different maltreatment types, they do not provide sufficient insight into the role of moderating and mediating variables that might explain the differential impact of maltreatment types on aggression and violence. Furthermore, only a few of the studies were able to account for the role of additional forms of childhood adversity, and severity of maltreatment type as they relate to violence (Herenkohl & Herenkohl, 2007; Mersky & Reynolds, 2007; Lisak, Hopper, & Song, 1996), thus failing to acknowledge the role of cumulative trauma. Important to note is that

several studies produced findings that supported the trauma theory explanation of cycle of violence, suggesting that aggressive behavior can indeed be symptom of trauma (Lisak, Hopper, & Song, 1996; Moylan et al, 2010; Elkit et al, 2013). However, majority of the studies reviewed do not include concepts from trauma theory to explain their findings, nor do they examine the influence of a *variety* of maltreatment types on likelihood of commission of violence. Thus, while offering crucial contributions to the field of child maltreatment and family violence research, these studies also raise important questions that the current study will address: Why are certain types of child maltreatment more predictive of violence than other types? What is the role of trauma in the development of aggressive behavior for maltreated children? If multiple forms of maltreatment do indeed produce an additive or interactive risk for violence perpetration in victims, then what additional factors that can be modified in treatment programs contribute to this interactive risk?

Some experts theorize that the damaging consequences of all types of maltreatment are primarily due to emotional trauma (Brassard et al, 1987; Higgins & McCabe, 2001; Elkit et al, 2013). Multiple forms of maltreatment are more likely to produce severe trauma symptoms which can then lead to a ‘cascade’ of other consequences like cognitive and developmental impairment, poor social bonds, antisocial attitudes and anger, and socioemotional difficulties. Severely maltreated children tend to face additional adversity such as poor family functioning, low levels of social support and low SES. These factors either contribute to or worsen the effects of maltreatment (Gorman-Smith et al, 1996; Repetti, Taylor, & Seeman, 2002) Additional empirical evidence to clearly support the existence of these cascading links is limited (Lisak, Hopper, & Song, 1996; Herenkohl, Egolf, & Herenkohl, 1997)), thus an increase in such research efforts, such as the current study, will lend further insight into the dynamics of the cycle

of violence by examining the link between a variety of maltreatment types and likelihood of engaging in violence and exploring the potential dynamic factors that may influence the relationship between maltreatment and violent behavior.

Through a detailed review of studies that examined the impact of maltreatment on likelihood to commit violence, the current study has identified a significant lack of studies that explore potential dynamic moderating factors that affect the relationship between maltreatment and likelihood of committing violence. Thus, chapter 3 will be devoted to explaining several theories that support the idea that family-based variables may act as dynamic moderators on the relationship between childhood victimization and likelihood of committing violent behavior. Chapter 3 will first provide an overview of the importance of healthy family social processes for children and the implications of need to belong theory for the current research initiative. Second, the most relevant studies that evaluate the relationship between family belonging likelihood of violence and other aversive behaviors will be presented. A summary of the research findings and how they inform the current study will be explained, followed by a review of how this study will address the research gaps illustrated in the literature reviews on both the cycle of violence and the importance of family belonging among children. Lastly, the specific research questions will be discussed.

CHAPTER 3

REVIEW OF THE EMPIRICAL LITERATURE: THE IMPORTANCE OF FAMILY SOCIAL PROCESSES FOR CHILDREN'S WELLBEING

This chapter will cover the literature on the family systems perspective of why family bonds are important for a child's wellbeing. Following a discussion of the family system's literature, the empirical evidence supporting the need of to belong theory's hypotheses regarding the relationship between a lack of belonging and the likelihood of future violence. The most relevant research studies that examine the relationship between a lack of family belonging and range of negative outcomes in children will then be presented, followed by a review of the studies that evaluate the relationship between individual components of family belong (e.g., social support and family-child relationship quality) and likelihood of aversive behavior. Finally, a summary of the gaps in the literature, how the current study can help fill them, and the specific research questions will be presented.

A Family Systems Perspective on the Relationship between Family Functioning and Child Behavior

The empirical literature review presented will first cover studies from the family system's theory that illustrate how social processes within the family, such as social support and family belonging are informed by the functioning and behavior of other family members, and the family unit as a whole. These studies serve the purpose of illustrating the reciprocal relationship between family violence and social processes. The next set of empirical studies that will be reviewed examine how family variables like social support, family-child relationship quality and the overarching variable of family belonging can influence a variety of child and adult behaviors including aggression and violence. While individual components of family belonging, such as

social support, are studied more often, there is a growing body of research examining the importance of belonging in general, whether to family, peer groups, the workplace, or community (DeWall et al, 2007). Hence, to provide a complete illustration of why family belonging is important to a child's wellbeing, relevant findings from the need to belong literature examining a lack of belonging on likelihood of aggression will also be presented. (Baumeister & Leary, 1995).

Introduction to Family Systems Theory

In recent years, there has been a focus on resilient children who grow up in aversive environments such as abusive homes yet are able to live prosocial and healthy lives despite their negative living conditions (Collishaw et al, 2007). Although there are various conceptualizations of the term resiliency, the most common and broad definition of trait resilience is an individual's "capacity to cope effectively with internal and external stresses" (Werner & Smith, 1982). Hence, resiliency can serve as a protective factor to enhance positive adaptation and increase the likelihood of healthy behavior outcomes or children who experience maltreatment. Although resilience is an internal trait and consequently internal factors like coping strategies, cognitive ability and personality all contribute towards resiliency (Collishaw et al, 2007), there are external family factors that also contribute towards a healthy level of resiliency in children exposed to maltreatment. Family systems theory has identified stable and caring family environments as an important bedrock upon which children develop their individuality, psychological and physical wellbeing. (Cooper, Grotevant & Condon, 1983; Repetti, Taylor & Seeman, 2002; McLanahan, Tach, & Schneider, 2013). One particular component that contributes to a child perceiving their family to be caring, is family belonging (i.e., family connectedness). Family belonging defined as the feelings of inclusion within one's family, emotional connections with members, and

feelings of being understood, supported and cared for (Leake, 2007). In essence, family belonging is essentially what can help children develop and maintain strong prosocial bonds with their family members. Strong and positive family bonds have been documented in numerous studies as a factor that can help children overcome adversity in life, and even buffer the effects of a range of aversive experiences such as divorce, discrimination, bullying and health issues. (Kempton et al, 1991; Barnes, Grace, & Farrell, 1992; Simons et al, 2006; Bowes et al, 2010). Unfortunately for children victimized by their family members, their home becomes an aversive environment, and thus negative familial social relationships may have detrimental effects on children's wellbeing, including their ability to feel belonging (Antonucci et al, 2009)

Family systems theory views family members as a unit in which the behavior of each individual is informed by the functioning of the family unit as a whole (Anderson & Henry, 1994; Alexander, 2015). Thus, family systems theory can partially elucidate as to why children and their sense of belonging may be affected by abuse and neglect in their home (Alexander, 2015). While similar to attachment theory in regards to how the family unit can influence individual behavior (Bowlby, 1982, Alexander, 2015), family systems theory expands this viewpoint and stipulates that the nature of behavior in one family subsystem (e.g., parent to child relationship, sibling to sibling relationship) can influence behavior in another family system (Broderick, 1993). Additionally, family systems theory states that there is a reciprocal relationship between family characteristics such as family belonging, social support, and the relationship quality among family members (Anderson & Henry, 1994). For example, according to family systems theory, inter-parental violence can negatively affect the relationship between the child and the abusive-parent. This resulting negative behavior between child and abusive parent angers the parent, and thus he or she becomes even more abusive to the other parent, who

then may resent the child. As a result, this child may experience low levels of family belonging. If family processes, such as family belonging, can reduce the effect of abusive experiences on likelihood to commit violence, then children who have low levels of family belonging may be at risk for engaging in violence. Hence, the reaction of each subsystem to the other subsystem's behavior is in part what drives the overall nature of how a family unit operates (Woodhouse, Dykas & Cassidy, 2009; Alexander, 2015). Therefore, less conflict within each subsystem of the family can increase the likelihood of children feeling supported and feeling a sense of belonging to their family. This sense of belonging in return may help strengthen the relationship between the child and other family members (Kwong et al, 2003; Alexander, 2015). In essence, family belonging may be an important part of a child's life, especially if he or she experiences some form of abuse or neglect.

Empirical evidence supporting concepts from family system's theory

The family systems theory conceptualization of why family belonging is important to childhood wellbeing, is valid only if empirical evidence illustrates that there is indeed a reciprocal relationship between different dyads in the family. Thus, the evidence supporting family systems theory of how families function is deserving of attention. Studies utilizing the family systems framework to examine the reciprocal relationship between different family dyads and family environments have found support for family systems concepts. These findings may explain why some therapeutic programs for child maltreatment victims use a family systems approach to helping victims of maltreatment as well as their families (Bograd, 1984; Ford & Saltzman, 2009; Karakurt, Silver, 2014).

Researchers found that adolescent's sense of security with each of their parents is associated the sense of security that parents have with each other (Woodhouse, Dykas &

Cassidy, 2009). In a study examining the influence of adolescent perceptions of family system characteristics and parental behaviors on adolescent substance abuse, findings revealed that parental substance use was linked to adolescent substance use, and high perceptions of family bonding and parental support were linked with low levels of substance abuse (Anderson & Henry, 1994). In yet another study, researchers found that family cohesion and a mother's perception of family support were related to an increased likelihood of a family adapting to an autistic child (Morgan, 1988).

Researchers investigated the impact of relationship quality in one family dyad on its ability to influence relationship quality in another dyad, by examining if conflict between mother and children affected sibling conflict during childhood. Findings suggested that intrusive and overcontrolling mothering of both siblings at age 3 years old was related to high levels of conflict and aggression between the siblings at age 6 (Volling & Belsky, 1992). In another study, Modry-Mandell, Gamble & Taylor, 2006 explored the impact of sibling relationship quality and family emotional climate on behavioral problems in young children from low-income families. Study results demonstrated a significant link between sibling relationship quality and children's behavior, such that warm sibling relationships were likely to result in less behavioral problems. Most importantly, sibling relationship quality continued to make a significant impact on child adjustment and behavioral problems after controlling for child exposure to interparental conflict and family emotional climate (Modry-Mandell, Gamble & Taylor, 2006). These findings are suggestive of how sibling relationships can inform and shape the lives of children beyond other family characteristics (Modry-Mandell, Gamble & Taylor, 2006).

While the studies above do not specifically evaluate the moderating role of family relationships on the link between maltreatment and likelihood of engaging in violence they do

suggest the power of family social variables like cohesion, support, and parenting style to influence not only a child's behavior, but the type of relationship the child has with other family members. The findings from the Modry-Mandell and colleagues, 2006 study are specifically relevant to the current's study research objectives of identifying dynamic factors that can reduce the impact of childhood maltreatment on likelihood of committing violence. The findings illustrate how a positive and close relationship with a family member can essentially buffer the effects of exposure to intimate partner conflict; despite the children witnessing conflict, they still had positive outcomes in part due to the healthy sibling relationships. The findings from this section overall support concepts from family systems theory that emphasize the importance of family dynamics on the behavior of each family member (Kwong et al, 2003).

Introduction to the Concept of Belonging: Empirical Findings from the Need to Belong and Family Belonging Literature

The studies from the second chapter on child maltreatment and the evidence on family systems theory presented thus far jointly suggest that families characterized by frequent conflict and abuse can create physical and emotional vulnerabilities resulting in negative behavioral outcomes in both children and adults, such as physical illness, serious mental health problems, antisocial attitudes, poor relationships, and even aggression and violence (Smith, 1994; Wagner, 1997; Greeson et al, 2011; Alexander, 2015). In their article analyzing the problem of school violence such as school shootings, Hudson, Windham, & Hooper, 2005 discuss the predictive factors of youth who engage in school violence. The authors suggest that families can play an important protective role in reducing violent behavior in youth, as family related problems often play a role in the violent behavior of children *at school and in the home* (Rotter & Boveja, 1999; Hudson, Windham, & Hooper, 2005). They also note that the most effective violence

intervention programs include family components, and thus healthy family functioning can help increase resiliency in children (Hudson, Windham & Hooper, 2005). The most commonly studied family socialization factors identified as influential to child development and behavior include social support and parent-child relationship quality while family belonging (also referred to as family connectedness) is studied less (Collishaw et al, 2007; Riggs et al, 2009). Numerous studies have documented the instrumental role of familial social support and positive relationships among family members (Bowlby, 1982; Collis et al 2000) Important to note, however, is that while the specific construct of family belonging may be understudied, social support and family-child relationship *quality are both related components to the family belonging construct*, and in some studies have been used as part of the family belonging measure (Cavanagh, 2008).

The literature takes one of two approaches to measuring family belonging. The first approach is to measure family belonging as its own construct different from measurements on family-child relationship quality and support. Examples of a direct measure of family belonging would be a question asking the child, “Do you feel a sense of belonging in your family?”, “How much do you feel your family understands you?” or “Do you feel that you matter to your family?” (King, Boyd & Thorsen, 2016). The second approach combines various family factors such as social support, feelings of closeness to family, and the quality of parent-child relationship and/or quality of sibling-sibling relationship to create a construct of family belonging (Cavanagh 2008; King, Boyd & Thorsen, 2016). However, there is not a validated family belonging scale due to a lack of specific agreement on exactly what it means to have family belonging. While constructs such as family social support and family cohesion may indeed be related to family belonging, they may not effectively capture the essence of what it means to feel belonging within

one's family. The construct of family relationship quality and family closeness could potentially be stronger indicators of family belonging. While individual sub-constructs of family belonging (e.g., family closeness, family-child relationship quality) are studied more often than the specific construct of family belonging, there is a growing body of research examining the importance of belonging in general, whether to families, the community, or the workplace. Hence, to provide a complete explanation of why family belonging is important for children, especially maltreated children, relevant findings from the need to belong literature will be presented. Following the need to belong empirical literature, research findings will be presented on studies that examine the relationship between either family social support, family-child relationship quality or family belonging with the likelihood of engaging in violence and other negative behaviors.

Relationship Between Need to Belong with Aggression and Violence

Baumeister & Leary, 1995 posit that a threat to one's belonging (i.e., need to belong) will have a negative influence on one's emotional reactions because threats to belonging are essentially a threat to one's survival (Baumeister & Leary, 1995). Rather than creating opportunities to bond and connect with others when one's need to belong is threatened, experimental results suggest that people are more likely to respond in a hostile or antisocial manner when their expectation to belong is not met (Van Best, & Williams, 2006). Although many studies have documented an association between a lack of belonging with negative outcomes in childhood and adulthood, including aggression and violence (Maslow, 1954; Maslow, 1970 Baumeister & Leary, 1995; Baumeister et al, 2007; DeWall, Baumeister, & Vohs, 2007; Murray et al, 2008), some studies fail to find a significant link between threatened need to belong and negative outcomes (Twenge et al, 2001; Baumeister et al 2002).

In a review of need to belong theory, Gere & MacDonald, 2010 note that the majority of studies examining the importance of belonging focus on immediate cognitive, emotional and behavioral reactions to social rejection and acceptance within an experimental lab setting, while fewer studies focus on long term outcomes (Daley & Buchanan, 1995; Newsom et al, 2008). In addition, the need to belong studies evaluate an actual rejection that instigates a lack of belonging in individuals, as opposed to measuring innate feelings of a lack of belonging, regardless of a rejection (DeWall, Baumeister & Vohs, 2007; Murray et al, 2008). It is not necessary for a person to be actively rejected to feel a lack of belonging. For example, some children that may see themselves as outsiders from their family and thus feel as though they do not belong, could actually have parents and siblings that try to involve them with family life. So, although rejection is a threat to belonging, it is possible for children to feel a lack of belonging, even without an active rejection.

The following review of studies examine the relationship between a lack of belonging or threat to belonging and the likelihood of displaying aggressive behavior. Compared to most need to belong studies that examine the immediate effects of social exclusion/lack of belonging, Stensberg & colleagues, 2014 instead examined the effect of exclusion in preschool on child functioning two years later. While teachers reported social exclusion of children, parents provided reports of aggression and cooperation in their children. Using a sample of 762 boys and girls, researchers conducted a cross-lagged analysis to determine the impact of teacher reported social exclusion on aggression and cooperation in children 2 years later. Results showed that greater social exclusion during the preschool years predicted more aggression and less cooperation 2 years later for both boys and girls. Very interesting to note is that social exclusion predicted more aggression only in the group of children who scored above average on aggression

rankings at age 4. Researchers concluded that rejection during these early childhood years seems to strengthen aggressive behavior. Results suggest that although social exclusion may not affect all children in a similar manner, certain children such as those with anger issues early on, are at a greater risk for experiencing negative effects from social exclusion (Stensberg et al, 2014).

Olthof & Goossens, 2007 utilized concepts from the need to belong theory to understand motivations behind the antisocial behavior of children. Using a sample of schoolchildren, the researchers examined if the desire to belong and be accepted by classmates was related to an increased level of antisocial and/or aggressive behavior. Results indicated that both girls' and boys' antisocial involvement in bullying was significantly related to a desire to be accepted by boys involved in bullying. The researchers concluded that children's desire for acceptance motivated them to behave in similar ways to the people they wished to interact with (Olthof & Goossens, 2007). These results support previous findings of how the desire to belong and be accepted is more likely to lead to aggressive or hostile behavior as opposed to prosocial behavior (Baumeister & Leary, 1995; Van Best & Williams, 2006).

While the previous studies described investigated the influence of the need to belong on aggressive behavior in children, DeWall and colleagues, 2009 explored the role of threatened belonging on aggressive behavior in adults. Using a sample of undergraduate college students, the researchers conducted a series of experiments to test their hypothesis that social exclusion produces aggressive behavior because it increases individuals to perceive neutral information as hostile. This type of perception is known as hostile cognitive attribution, whereby one interprets the behaviors of others as having an antagonistic or aggressive intent, even when the behavior is harmless or ambiguous (DeWall et al, 2009). The series of experiments demonstrated that participants who experienced a threat to their belonging exhibiting a significant increase in

hostile cognitive attributions to neutral information compared to the participants who experienced acceptance or were in the control group (DeWall et al, 2009). These socially excluded participants were also more aggressive. Additional analyses revealed that the hostile cognitive attributions mediated the relationship between social exclusion (lack of belonging) and aggressive behavior (DeWall et al, 2009). The findings support previous research showing a link between hostile cognitive attributions and aggression and violence (Anderson & Bushman, 2002; Orobio et al, 2002). Although the researchers tested their hypotheses with a college sample, the results hold implications for maltreated children. Previous research has identified that maltreated children are more likely to have negative or hostile cognitive attribution than non-maltreated children, and that these hostile attributions mediate the association between maltreatment and aggression (Dodge et al, 1995; Price & Glad, 2003). Hence, a lack of belonging/exclusion *may* increase hostile cognitive attributions in victimized children and lead to aggression and potentially violence. While this specific pathway to aggression has not yet been empirically tested, researchers have demonstrated support for components of this complex process. Richey and colleagues, 2016 found that hostile attributions moderated the relationship between child maltreatment and commission of aggressive behavior (Richey et al, 2016), while Price & Glad, 2016 conducted a study that demonstrated how maltreated children are more likely to have hostile cognitive attributions than non-maltreated children (Price & Glad, 2003).

Family Belonging

As illustrated from the research on need to belong, humans have an innate tendency to feel wanted within their respected social groups, especially families (Maslow, 1954; Baumeister & Leary, 1995). As demonstrated from the need to belong research, a lack of belonging can contribute to increased hostile cognitive attributions, which can then lead to aggression (DeWall

et al, 2009). Hence, the feeling a sense of belonging and acceptance and feeling that one fits in and is understood within a group or system is crucial to the development of one's identity and wellbeing, especially for children seeking to be valued by their family (Maslow, 1954; Erikson, 1964; Maslow, 1970; Baumeister & Leary, 1995). Research has identified serious negative behaviors associated with a lack of family belonging in childhood, such as joining deviant subcultures like gangs, hate groups, and religious cults (Clark, 1992). Family belonging is also shown to be a protective factor for adolescent suicide attempts (Borowsky, Ireland, & Resnick, 2001) and independently related to overall well-being in children (Leake, 2005). Although a perception of family belonging may naturally exist for some children and families, perhaps there are dynamic factors, such as prosocial family activities, that can enhance the level of family belonging for all members. What little research exists on predictive factors of family belonging indicate that variations in family structure are associated with the amount of family belonging a child feels (King & Boyd, 2016).

Factors Related to Family Belonging

Using the nationally representative data set The National Longitudinal Study of Adolescent to Adult Health (i.e., Add Health), King & Boyd, 2007 investigating factors that predicted family belonging in 9, 686 adolescents from two-biological parent families. They then compared the results to findings from another study that used Add Health data to investigate factors predicting family belonging in step families. Consistent with perspectives from family systems theory, findings demonstrated that the quality of parent-child relationship was a primary predictor of perceptions of family belonging. For two- biological parent families, mother-child and father-child relationship quality equally predict family belonging, while mother-child relationship was a better predictor than stepfather-child relationship in step families (King &

Boyd, 2007). For both types of families, a positive relationship between mother and father was significantly related to positive relationships children have with their parents. Thus, better quality relationships between parents were associated with higher quality parent-child relationships, and in turn, related to higher reports of adolescent perceptions of family belonging (King & Boyd, 2007). Additional findings include that younger adolescents reported more family belonging than older adolescents and girls reported more family belonging than boys. Findings also revealed that Asian youth felt lower family belonging than Caucasian youth despite similar relationship quality with parents. These findings suggest that even though quality of relationship between one parent and child may be weak, a high-quality relationship between the other parent and child may still promote perceptions of family belonging. The relationship quality between biological mother and child may matter more than relationship between stepfather and child in predicting child perceptions of family belonging. Also, factors other than parent-child relationship quality may be important in influencing feelings of family belonging in Asian youth. (King & Boyd, 2007). Further studies investigating dynamic factors that can enhance feelings of family belonging, especially for children of different cultures and for children maltreated by family members may be helpful.

The study by King & Boyd, 2007 is one of only two studies to examine predictive factors of family belonging, thus illustrative of the general lack of research on family belonging and the lack of a validated family belonging scale (Leake, 2007; King & Boyd, 2016). In contrast to related factors family social support, the role of family belonging has received little attention in child maltreatment research. While researchers and clinicians agree that a sense of belonging is essential to a child's mental and social development, there is virtually no research to examine the role of children's perceptions of family belonging on the link between maltreatment and future

violence specifically, although several studies exist that examine either the influence of family belonging on maltreated children for non-violent behavior or the influence of family belonging on engaging in risky behavior in a general sample of children (Resnick et al, 1997; Riggs et al, 2009). Therefore, the next section will review existing studies that evaluate the relationship of family belonging on a variety of youth behavioral outcomes including aggressive behavior.

Relationship between Family Belonging and Youth Outcomes Including Aggression

Although the research on the relationship between family belonging and connectedness with violent behavior is scarce, a handful of studies do explore these links (Resnick et al, 1997; Brookmeyer, Fanti, & Henrich, 2006). Resnick and colleagues, 1997 conducted a comprehensive analysis of various individual, school, and family factors that influence adolescent risky behaviors including drug use, sexual behavior, emotional distress and violence. Results revealed that a child's connectedness to both family and school was a protective factor for majority of risk behavior measures. Although family variables in general explained little of the variability in violence perpetration among the sample of adolescents (7% for younger children, 5% for older children), parental and family connectedness was still significantly associated with lower levels of interpersonal violence perpetration. These findings suggest that perceptions of interconnectedness with one's family serve as a protective factor against risky behavior including violent behavior (Resnick et al, 1997).

Using Add Health data, researchers investigating the joint impact of connectedness (e.g., belonging) to parents and schools on likelihood of committing violent behavior in a sample of 6,397 students. Key findings included that violence exposure in childhood predicted increases in violent behavior, and school connectedness buffered the relationship between violence exposure and the commission of violent behavior. In relation to family functioning, children with both

connectedness to parents and connectedness to school exhibited less violent behavior. However, the beneficial effects of parental connectedness on reducing violence was only seen when youth also felt connected to their school (Brookmeyer, Fanti, & Henrich, 2006). Thus, these findings suggest that a sense of belonging to more than one group (i.e., family and school) will be more beneficial at reducing violent behavior than a sense of belonging within the family alone.

Duggins and colleagues, 2016 explored the potential protective roles of family and school connectedness on aggression levels in victims of school bullying. Their sample included 373 economically disadvantaged students in grades 7 to 10. Study findings showed a decline in overall aggression levels throughout the 3 waves of measurement. Specific results indicated a protective role of family connectedness, such that high family connectedness in youth were linked to lower levels of aggression, regardless of whether youth had experienced victimization. Similar results were observed for the impact of school connectedness on reducing likelihood of committing aggressive behaviors. The researchers suggest that promoting a sense of belonging to school and family for children may help reduce aggression among victimized and non-victimized youth (Duggins et al, 2016).

One of the few studies to examine the impact of family belonging on maltreated children was conducted by Riggs and colleagues in 2009. Utilizing a sample of 80 Australian men and women, researchers conducted qualitative semi-structured interviews to examine why people choose to become new foster parents. Researchers found four different aspects of family belonging: a sense of solidarity, rituals, identity and similar cultures, all of which contributed to helping maltreated children adjust to new foster families (Riggs, Augoustinos, & Delfabbro, 2009). The researchers noted that although the findings do not pertain to child perceptions of

family belonging, they do highlight foster parent perceptions of the importance that family belonging had in helping abused children heal and adapt to their new families.

Cavanagh, 2008 conducted a study using Add Health data on 12, 843 adolescents to examine the impact of various aspects of family structure and instability on adolescent adjustment. Findings indicated a statistically significant link between family structure and adolescent emotional distress, such that adolescents from two-parent biological families or two parent adoptive families were less emotionally distressed in adolescence than children from one parent families. The quality of family relationships and level of family connectedness both mediated the relationship between family structure and level of emotional distress. Hence, adolescents residing in two-parent biological families the longest, reported more family connectedness and better-quality relationships with parents, which in turn was related to less distress (Cavanagh, 2008). Interesting to note is parent-adolescent relationship quality and family connectedness were more influential on the relationship between family structure and emotional distress than measures of social control.

Relationship between Family Social Support and Negative Outcomes

As explained earlier, social support is an important family factor that is predictive of certain negative behavioral outcomes in youth, and may potentially predict family belonging, such that greater levels of family support may produce higher levels of feelings of belonging (Cavanagh, 2008). Numerous studies consistently identify social support as a moderating factor that lessens the effects of child abuse on various negative outcomes, including aggression and mental health issues (Muller et al, 2000; Carlson et al, 2002; Futa et al, 2003; Koffman et al, 2004; Krause et al, 2008). Both familial and non-familial social support can help children recover from traumatic experiences like abuse within the family by increasing their resiliency

(Koch & Porter, 2007). The more caring and responsive the home environment, the more adaptive a child's outcome in response to aversive situations (Collishaw et al, 2007). Hence, social support may mitigate the negative consequences of child maltreatment. This is evidenced by studies finding that social support in victims of abuse decreases their risk of revictimization, increases social functioning, and decreases PTSD and other psychopathology (Cohen & Wilson, 1985; Runtz & Schallow, 1997; Gayer-Anderson et al, 2002; Sperry & Widom, 2013; Lamis et al, 2014). To illustrate, researchers examined the role of mobilization of social support on the relationship between polyvictimization and various externalizing symptoms including aggression and antisocial behavior in a sample of 78 adolescents in Chile. Analyses revealed that polyvictimization was significantly related to externalizing behaviors like aggression for adolescents with low mobilization of social support but not for those who actively sought to use their support network. Thus, the *motivation to use* one's social support system was shown to be protective factor against externalizing and aggressive behavior for abused children (Guerra, Ocaranza, & Weinberger, 2016).

Evans, Steel, & DiLillo, 2013 investigated the impact of perceived family social support on the relationship between child maltreatment and degree of adult trauma symptoms such as depression, defensive avoidance, anxiety and anger. Findings suggest that maltreatment severity was significantly related to trauma severity and that perceived social support from family moderated the relationship between women who were physically abused in childhood and trauma symptoms; the women abused in childhood who had more social support from family displayed less anger, depression, and other trauma symptoms (Evans, Steel, DiLillo, 2013). While the studies examining the impact of familial social support on the relationship between child maltreatment and the specific externalizing factors of violence and aggression are limited, there

are studies demonstrating that social support and healthy social attachments in general can reduce the effects of child maltreatment and victimization on other negative behavioral outcomes like depression, suicide and eating disorders (Defronzo & Pawlak, 1993; Gayer-Anderson et al, 2002; Williams et al, 2005; Turanovic & Pratt, 2015; Duru & Balkis, 2018). Although not specifically assessing the impact of familial support, Gayer-Anderson and colleagues, 2002 investigated if social support moderates the relationship between child abuse and likelihood of developing mental health issues. The researchers conducted a study to investigate the association between childhood physical abuse and adult psychosis using a sample of 202 individuals from a mental health service facility and comparing them to 266 control individuals. Results revealed a significant interaction between severe physical abuse and levels of social support. This relationship was the strongest for women, such that women who reported the most severe abuse and low levels of social support had the highest odds of psychosis in adulthood (Gayer-Anderson et al, 2002).

Lamis and colleagues, 2014 also explored the relationship between social support, child abuse and various elements of social functioning. Using a sample of 152 low-income African-American children, the researchers examined the relationship among emotional, sexual, and physical abuse, social support from family and friends, and social functioning. The results revealed several important findings. Physically and emotionally abused children had less social support from family *and* friends, while sexually abused children had less social support *only* from family members. Perceived family support mediated the relationship between physical, sexual, and emotional abuse with social functioning, while perceived peer support mediated the relationship between emotional and physical abuse with social functioning. Findings suggest that family support may matter more than peer support for victims of sexual abuse (Lamis et al,

2014). Although Lamis and colleagues, 2014 and Evans and colleagues 2013 did not assess for the moderating impact of social support on the relationship between maltreatment and violence specifically, they did examine predictors of aggression such as social functioning and certain trauma symptoms (Feiring, Simon & Cleland, 2009).

Although maltreated children on average tend to have less developed social support systems (Lamis et al, 2014), not all maltreated children lack social support or family connectedness/belonging as evidenced by the research findings presented. Hence, treatment for child victims of family violence and maltreatment that include a component on developing strong familial and non-familial social support systems may be helpful in reducing aggression and violence in childhood and adulthood (O'Reilly et al, 2009; Alexander, 2015).

The Association between Family-Child Relationship Quality and Youth Aggression

Despite the ability of different types of relationship dyads within the family to influence the level of family belonging children feel, most research studies exploring the impact of relationship quality on aggressive behavior have focused solely on parent to child dyads (McHale, Updegraff & Whiteman, 2012; Lindell, 2014). Therefore, majority of the studies reviewed in this section explore the influence of parent-child relationship quality on likelihood of aggressive behavior in youth. However, several studies evaluating the impact of sibling relationship quality on aggression were found and are also included. Important to note is that although additional studies were found linking sibling violence (which is essentially a potential indicator of poor sibling relationships) to increased likelihood of aggression, these were not included in this section as the primary focus is to examine how the quality of the relationship (i.e., a component of family belonging), not violence exposure, impacts the likelihood of aggression.

Poor parent-child relationship quality is a strong and consistent predictor for range of adolescent internalizing and externalizing behavior including delinquency and aggressive behavior (Glueck and Glueck, 1950; Enron et al, 1971; Hale et al, 2005; McWey et al, 2015). Although relationship quality between parent and child on its own is not necessarily a measure of family belonging, it can serve as indicator for family belonging, and as one component of the family belonging dimension. Although family systems research states that a child's relationships with other members of his or her family can be as important as the relationship between the child and parents (Feinberg, Solmeyer & McHale, 2012; Alexander, 2015), majority of the research examining family-child relationship quality specifically focus on parent-child relationships as opposed to other family member-child bonds (McHale & Crouter, 1996; Feinberg, Solmeyer & McHale, 2012). Hence, majority of the following empirical findings illustrate the influence of parent-child relationship dynamics on mental health outcomes and aggression.

Using a panel design with 244 adolescents, Simons and colleagues, 1988, investigated the role of parental rejection (i.e., poor parent-child relationship quality) on delinquency while controlling for other relevant family factors. Analyses revealed that even after controlling for family organization, family conflict, social control, and religiosity, parental rejection significantly predicted a variety of deviant behaviors, including aggressive crimes such as assault and armed robbery (Simmons, Robertson, & Downs, 1988). Thus, similar to the Modry-Madrell and colleagues, 2006 findings, these findings suggest that family-child relationship quality may have just as much influence if not more influence on externalizing problems than social control measures (Simmons, Robertson, & Downs, 1988; Modry-Mandell, Gamble & Taylor, 2006).

To investigate the influence of parental rejection on problem behavior in adolescence, Aske and colleagues, 2004 conducted a cross sectional design using data on 1,142 adolescents

from the Conflict and Management of Relationships study. Results revealed that perceived parental rejection was significantly related to depression and aggression for both boys and girls. Personality type did moderate the association between perceived rejection and both depression and aggression, suggesting that certain types of children may be innately more susceptible to the negative impact of poor parent-child relationship quality (Akse et al, 2004).

Orpinas, Murray, and Kelder, 1999 examined the association between various family constructs including parent-child relationship quality and risk of aggressive behavior among a sample of 8, 865 middle-schoolers in Texas. Results revealed that students who lived with both parents were less likely to report aggression than students living with other family members or people. The total number of family constructs, including parent-child relationship quality, explained nearly one-third of the variance in aggression levels. The percentage of boys and girls who were in a fight at school, or carried a weapon to school, was significantly higher for students reporting a poor relationship quality with their parents, suggesting a protective effect of healthy relationships between parent and child on likelihood of engaging in school related aggressive behavior (Orpinas, Murray, & Kelder, 1999).

In another study that explored the relationship between parent-child relationship quality and likelihood of aggressive behavior, researchers assessed the impact of perceived parental rejection on depression and aggression in 1,329 Dutch male and female students ages 10 to 19 years old. Unique to this area of research, the study authors explored the relationship between aggression and withdrawal behaviors. The results demonstrated several important findings. Analyses revealed a significant association between parental rejection and reports of aggressive behavior for girls, but not boys. As the researchers hypothesized, the mediation models indicated that perceived parental rejection influences both male and female adolescent aggression through

adolescent depression. Hence, perceived rejection contributed to youth depression, which in turn contributed towards youths' aggressive behavior (Hale et al, 2005).

Poor sibling relationship quality is characterized often by conflict and is predictive of a variety of negative behavioral outcomes for children such as and adjustment problems and conduct disorder, as demonstrated by empirical findings (Garcia et al, 2000; Stocker, Burwell & Briggs, 2002). These negative outcomes may also include antisocial and aggressive behavior in some instances, as illustrated by research from Bank, Burraston & Synder, 2004 when they examined the influence of sibling conflict on adolescent boys' likelihood of exhibiting antisocial behavior. Findings revealed that sibling conflict, when accompanied by ineffective parenting at ages 10 to 12, predicted antisocial behavior in the male siblings between ages 12 and 16 years old. Findings suggest that sibling conflict can impact the developmental trajectory of antisocial behavior (Bank, Burraston & Synder 2004).

Using a measure of observed sibling conflict in 180 low SES male children and their siblings, researchers examined the impact of sibling conflict on mother and teacher reports of conduct problems. Findings revealed interactive effects, such that sibling relationships characterized by conflict and agonism, along with rejection by parents, predicted reports of aggressive behavior and other characteristics of conduct disorder (Garcia et al, 2000).

As emphasized by family systems theory, these findings collectively illustrate the influential nature of family bonds on a variety of behavioral outcomes, including aggression, in childhood and adulthood. However, compared to studies examining the influence of familial social support and family-child relationship quality on likelihood of engaging in aggressive or violent behaviors, virtually no studies exist examining the impact of family belonging on aggression in children maltreated within their families. The closest study to investigating this

dynamic is the Duggins et al, 2016 study that examined the impact of family belonging/connectedness on aggression for victims of school bullying.

Summary of Research Findings

Regarding the review of findings in this second chapter, sufficient empirical evidence indicates that family belonging and associated constructs like positive family-child relationships and family closeness can reduce the likelihood of harmful outcomes including aggression and violence (Simmons, Robertson, & Downs, 1988; Anderson & Henry, 1994; Futa et al, 2003; Koffman et al, 2004). Studies from the need to belong literature suggest that a universal need to belong is important for both children and adults, and the consequences of threats to a person's sense of belonging, such as rejection and social exclusion from family and non-family members can be a powerful instigator for aggressive and violent behavior (Baumeister & Leary, 1995; Baumeister et al, 2007; DeWall, Baumeister, & Vohs, 2007; Murray et al, 2008). Hence, the combined evidence from 1. family systems theory regarding the influential nature of family relationships, 2. the empirical evidence on the importance of family belonging and associated measures on youth behavioral outcomes including aggression, and 3. empirical findings from need to belong theory collectively inform one of the main hypotheses of the current study: family belonging may buffer the effect of child maltreatment on risk for committing violence. However, as illustrated in the research review, there is an absence of studies evaluating the impact of family belonging on the relationship between childhood maltreatment and likelihood to commit violence. Therefore, to fill this gap in the research, the current study will empirically explore if family belonging moderates the relationship between child maltreatment and likelihood of committing violence.

Summary of Gaps in the Child Maltreatment and Family Social Processes Empirical Literature

Violent behavior is qualitatively different from other types of externalizing behaviors in childhood and adolescence, such as running away from home or being disruptive in school (Loeber & Stouthamer-Loeber, 1998; Nagin & Tremblay, 1999). Children who often display violence and aggression in childhood are more likely to suffer from a variety of internalizing problems as well and are also at a greater risk for engaging in violence during adulthood in addition to other types of maladaptive and/or criminal behavior (Farrington, 1999; Loeber & Farrington, 2000; Shoemaker & McKee, 2001). Hence, it is necessary to identify children at risk for commission of violence early on in childhood to increase the chances of successful prevention of violent behavior (Loeber & Farrington, 2000). Part of the process of identifying children at risk for violence commission is recognizing the link between child maltreatment and likelihood of violence commission, but also recognizing the not all maltreatment experiences are equal. As evidence from Chapter 2 clearly demonstrates, regardless of the reasons why, different forms of child maltreatment can produce various negative effects, such that not all maltreated children are at a risk for engaging in violence. While studies do exist that examine the impact of different types of maltreatment on likelihood of aggression or violence (Reidy, 1977; Widom, 1989; Ascher, 2015) they are limited, with many of them unable to control for the necessary factors predictive of violence (Reidy, 1977; Widom & Maxfield, 2001). Additionally, many of these studies that do examine the influence of different types of maltreatment on risk of committing violence, focus on only two or three types of maltreatment as opposed to a spectrum of maltreatment types. The current study goes beyond much of the existing studies to fill this research gap by examining the impact of 6 different types of maltreatment: neglect, witnessing

domestic violence, physical abuse, sexual abuse, multiple type maltreatment not involving sexual abuse and multiple type treatment involving sexual abuse. Operationalizing the multiple maltreatment types in this manner allow for the analysis and understanding of not only which multiple victimization types may be more closely linked to violence, but what the driving force is behind the link. The child maltreatment literature has speculated that one of the reasons some studies show a link between sexual abuse and an increased risk for violence commission is that sexual abuse is often accompanied by other types of victimization and sexually abused children are at an increased risk for re-victimization (Widom, 2008) Categorizing victimization types into multiple type maltreatment not involving sexual abuse and multiple type treatment involving sexual abuse will help identify if that link is mainly a result of multiple maltreatment, or specifically sexual abuse

Determining if commission of violence is dependent on maltreatment types is only the beginning to untangling the complex process of the transmission of violence. If certain types of victimized children are more likely to engage in violence than others, then what steps can be taken to reduce the chances of these children engaging in violence? Based on the empirical findings illustrating how a lack of family belonging can negatively influence the behavioral outcomes of a variety of children, it is possible that family belonging may matter just as much, if not more so, for maltreated children. Additionally, family belonging may matter more for certain types of victimized children. As discussed earlier, the Lamis and colleagues, 2014 study findings not only illustrated that social support can be beneficial for victims of abuse, but that the type of support that is beneficial, depends on the type of abuse. Thus, these findings allude to the need for treatment efforts to be specified to the type of victimization a child experiences.

Given the absence of studies investigating the links between family belonging, maltreatment, and the cycle of violence to explain the cycle of violence, the current study will fill these gaps. If family belonging is empirically shown to be a crucial factor linked to the likelihood of the maltreated children engaging in violence, then the findings will be able to inform therapeutic programs so they can be modified to include a component on improving a sense of belonging between maltreated children and their family.

Research Hypotheses and Questions

The empirical findings from the studies that have been discussed thus far, collectively inform several hypotheses from which the current study's research questions are formulated.

Hypothesis 1: *The type of family victimization a child experiences may be associated with the amount and type of symptomology displayed, hence, not all types of family victimization experiences are equal.*

The type of family victimization experience may influence the type of trauma symptom that a child experience (Higgin, 2000; Herenkohl & Herenkohl, 2007; Elklit et al, 2013). Specifically, violent behavior might be a manifestation of trauma for certain children and thus might operate as an actual symptom of trauma in addition to the more commonly acknowledge trauma symptoms like depression, anxiety, and isolation. Perhaps children that experience more anger and frustration due to their trauma, may be more likely to engage in violent behavior. This line of thought is supported by research on PTSD in which aggressive behavior, especially reactive aggression and violence, is often a symptom of the disorder due to a complex mechanism of emotional dysregulation, fear, and anger (Ford et al, 2012; Elklit et al, 2013).

Children who experience cumulative trauma as a result of multiple maltreatment types, are at a and increased risk for engaging in violence.

Hypothesis 2: According to family systems theory, violence in one relationship dyad, such as violence from parent to child, may influence the relationship quality between the child and another family member, thus in turn impacting levels of family belonging.

A child's sense of family belonging may be influenced by the dynamics of the relationship between the child and other family members. For example, a child being physically abused by their father could result in the mother distancing herself from the child and as a result of maternal deprivation, the child becomes emotionally closer to siblings in the household. In this case, the child may feel some sense of belonging due to the close relationship with the sibling. However, if no sibling is present, the child may not feel a sense of belonging at all. The exact outcome and mechanisms would depend on additional individual and environmental variables. This supposition is supported by several studies examining the influential nature of family belonging on a variety of behaviors (Over, 2016; Baumeister & Leary, 1995; Maslow, 1965). Since the need to feel safe is a primary need that must be met before someone focuses on other needs (Maslow, 1965), children experiencing harm from maltreatment may have challenges in developing or maintaining feelings of belonging within their family. Hence, children who experience maltreatment in the home may be less likely to feel as though they belong or fit in with their family. However, some maltreated children may feel a sense of belonging with non-abusive members of their family, provided that these members are supportive and engage in acts that demonstrate belonging.

Hypothesis 3: *Children who lack family belonging in conjunction with aversive experiences like maltreatment, may be more likely to have negative outcomes, such as higher levels of internalizing and externalizing behavior including aggression,*

This supposition is supported from evidence illustrating the power of positive family relationships to help buffer the effects of aversive experiences on a variety of outcomes (Forehand, et al, 1991; Barnes, Grace, & Farrell, 1992; Simons et al, 2006; Bowes et al, 2010). On the other hand, children with poor family bonds, such as poor parent-child relationship quality and a lack of family belonging, may be at an increased risk for aversive experiences (Resnick et al, 1997). This hypothesis is supported from research on need to belong theory that demonstrates how a need for belonging and to feel like one matters to his or her social group is a basic human need, that when threatened or absent, can result in hostile behavior (Baumeister & Leary, 1995).

The evidence from the current literature review and the above theoretical stipulations from the empirical evidence inform the following research questions for this study. These questions will be answered using the Florida Department of Juvenile Justice's Community Positive Achievement Change Tool (CPACT) full screen assessment, which will be described in detail in chapter 4, along with the data and research methods for the current study.

1. Does a childhood history of maltreatment increase the likelihood that a child will be officially referred to the juvenile justice system for a violent offense?
2. Does the type of history of maltreatment affect the likelihood of a child being officially referred to the juvenile justice system for a violent offense? (i.e., Are children that experience a certain type of maltreatment more likely to have

committed a violent crime than children who experience other types of maltreatment?)

3. Is a history of child maltreatment related to family belonging, such that children who experience any type of family maltreatment will be more likely to report low levels of family belonging?
4. Does family belonging affect youth's likelihood to be referred to juvenile justice system for a violent offense, such that the lower the level of family belonging, the more likely youth will be referred to the justice system for a violent offense?
5. Does family belonging moderate the relationship between each type of maltreatment (e.g., neglect, physical abuse, sexual abuse and multiple types of maltreatment) and subsequent violent behavior, such that the lower the report of family belonging, the more likely child maltreatment will lead to youth engaging in violent behavior?

CHAPTER 4

DATA AND METHODS

The data and methods section of this study will provide a detailed description of the data source used to answer the research questions along with an explanation for why this source was chosen. All independent, dependent, and control variables will be presented along with how each variable is operationalized and coded for analyses. Additionally, rationale will be provided for why certain control variables were selected. Following the presentation of the data source and research variables, the specific data analyses used to answer the research questions will be discussed

Data Source

The data used for this study stems from the efforts of the Florida Department of Juvenile Justice (FDJJ) to create an evidence-based approach to reducing recidivism among juveniles sentenced to both community prevention programs and residential facilities in Florida. In 2005 FDJJ began to develop an evidence-based comprehensive system of evaluating the needs and risks of youth referred to the Florida juvenile justice system. Hence, FDJJ developed a new actuarial risk and needs assessment tool known as the Positive Achievement Change Tool (PACT) (Baglivio, 2009). The PACT includes a pre-screen assessment and a full-assessment of youths' treatment needs and risk to re-offend. The pre-screen is given to all youth entering the justice system. Low risk youth are usually either placed in diversion or community-based programs to address their needs Moderate -risk youth are directed to intervention community programs, while youth scoring as moderate-high or high risk on the prescreen are given the full assessment and based on their needs go through more intense

community supervision and are reassessed with the full PACT every 90 days (Baglivio, 2009). Youth charged with a crime in Florida have several avenues that allow them to remain their community, hence go through community supervision instead of residential placement. In addition, a variety of conditions that youth on supervision must meet, such as obeying a set curfew, forfeiture of driver's license, substance abuse counseling or community service hours, they are also order to additional supervision, such as diversion programs or electronic monitoring (Florida Department of Juvenile Justice, 2012). Diversion involves youth participating in programs like Teen Court, Boys and Girls Club or different mentoring programs as alternatives to the formal DJJ system. This is typically used for youth charged with minor crimes or without a history of offenses. Electronic monitoring involves youth court ordered to be monitored through a GPS device on his or her ankle that identify the youths' locations at all times. Youth are also ordered to different types of rehabilitation and treatment programs depending on their needs that are identified through the PACT. Regardless of the type of community supervision a youth receives, each youth is assigned a juvenile probation officer who monitors compliance and help connect the youth with the different service providers (Florida Department of Juvenile Justice, 2012. When youth violate probation orders, they may be transferred to a residential placement.

Early validation studies demonstrated the validity of the PACT in predicting recidivism. However, officials noted that youth placed in residential facilities had unique needs, and the PACT was not appropriately designed to identify these unique needs. Hence, FDJJ then created a very similar, yet new PACT called the RPACT to be used for residential youth. The original PACT became known as the Community Positive Achievement Tool (CPACT) and is used with youth entering the Florida DJJ under a community supervision. The current

study uses data only from youth who have been order by the juvenile court to complete the full assessment CPACT and therefore does not include youth that only were ordered to complete the CPACT pre-assessment.

The CPACT helps official to reduce the chances the youth will reoffend by assessing the risk level of youth, identifying their areas of criminogenic need, skills and strengths, and then developing an appropriate intervention and/or treatment protocol to address their needs (Baglivio, 2009; Baglivio & Jackowski, 2013). The CPACT contains a variety of static and dynamic risk factors including those identified in the “what works” literature (Andrews & Bonta, 2003), along with information of all crimes (if any) a youth has committed previously. The full-assessment contains 12 domains with a total of 126 items that collectively measure the static and dynamic factors that have been empirically associated with likelihood of committing crime and risk to reoffend (Andrews & Bonta, 2003; Baglivio, 2009): criminal history including against-person misdemeanors and felonies, gender, school history and school status, use of free time, employment, relationships, family history and living arrangements, alcohol and drug use, mental health, attitudes and behaviors, aggression, and skills.

Youth are given multiple CPACTS for their duration of community supervision, with initial evaluations assessing current behaviors (last 6 months), and Final assessments assessing for behaviors during last 4 weeks of supervision. The purpose of assessing multiple CPACTS for each youth is to determine if any of their treatment needs or risk reduction needs have changed since the previous CPACT was administered (Florida Department of Juvenile Justice, 2012). Hence, the longer the time youth spend under community supervision, the more CPACTS they will have completed. Probation officers and additional

specialized staff completed required training along with motivation interviewing techniques in order to administer the PACT to referred youth. Both the RPACT and CPACT data have been assessed for reliability and validity and have both been shown to be highly valid and reliable at predicting youth recidivism (Hay et al, 2016; Baglivio & Jackowski, 2013). Two separate assessments of the validity of the CPACT have been conducted using two different samples of youth from different years of DJJ referrals (Parsons, Hand & Blakenship, 2012; Baglivio & Jackowski, 2013). The most recent evaluation by Baglivio & Jackowski in 2013 examines the validity of the CPACT in a juvenile sample of 15,168 male and female youth of various races and ethnicities across Florida. Recidivism is measured by both referral or arrest and by conviction or adjudication. The results indicated that as CPACT scores increased, so did recidivism levels (Baglivio & Jackowski, 2013).

There are two primary reasons that the current study uses the CPACT data instead of the RPACT data: First, items assessing for the family belonging variable are only present in the CPACT dataset and second, since the CPACT initial assessment data is collected on youth when they have their first encounter with the justice system, whereas many youth completing the R-PACT will have already have gone through the system, the impact of prior involvement in the justice system on violent behavior is less likely to be a spurious variable when determining the causal effect of history of maltreatment on likelihood to engage in violence. There are other advantages to using the CPACT for the purposes of this research project. Data is cross-verified among three different sources: self-report from youth, reports from case managers assigned to each youth under community supervision, and reports from schools, parents, and doctors on behavior at home and school, and any documented physical or mental health conditions. Often, the data that is used in research examining the influence

of maltreatment on likelihood to commit violence comes from either self-report data or official data (Barnett, Miller-Perrin & Perrin, 2005). This dataset is unique since the information recorded is a result of corroboration between youth, official agencies, case managers, and parent, schools and doctors when needed, hence increasing the validity (Florida Department of Juvenile Justice, 2012; Early, Hand & Blankenship, 2012). Although the current study utilizes a cross sectional research design and hence causality cannot be established, the phrasing of the questions in the CPACT does allow for some establishment of time-order for the key variables being analyzed. Additionally, many of the static and dynamic factors identified as predictors of violent behavior in the literature, such as male gender, cognitive levels, antisocial attitudes, peer influence, SES (Farrington, 1999; Andrews & Bonta, 2006) can be accounted for in the data analyses to better isolate the effects of maltreatment and belonging on aggression and violence, as much as possible.

Sample Description

The sample used for the data analyses consists of 6,537 male and female youth who completed the full CPACT assessment (i.e., the sample does not include youth who completed only the CPACT pre-assessment) and processed out of the Florida Department of Juvenile Justice community supervision placement during the 2010-2011 fiscal year who completed at least one CPACT. Data from the 2010-2011 fiscal year was chosen since at the time, this was the most recent available dataset in which all the information needed for the current study, had been officially entered into the FDJJ database. Important to note is that some of these youth graduated to residential placements immediately after leaving community supervision due to additional offenses necessitating a transfer to residential placement, while other youth committed offenses that warranted community supervision

placement again or did not re-offend at all. Although the majority of the youth had more than one CPACT during their time under supervision, only the initial entry CPACT data is used.

Additional relevant characteristics of the youth will be presented in the descriptive analyses.

Description of the Variables

Independent Variables

The independent variable in all of the analyses is child maltreatment. Unfortunately, the CPACT does not contain information on relationship of the child to perpetrator or information regarding the severity or frequency of each type of maltreatment. Although the item measuring neglect does not specifically assess for whether the perpetrator is a family member, child neglect has been found to mostly be committed by parents or parental figures in charge of the child's welfare (Barnett, Miller-Perrin & Perrin, 2005). Additionally, although witnessing family violence is indeed a major form of child maltreatment, the current study focuses on other types of maltreatment due to methodological issues with measurement in the dataset being used for analyses.

Child maltreatment

The first independent variable captures the history of youth exposure to any type of maltreatment by family (0=No, 1=Yes). The CPACT does not contain one item that specifically assesses for maltreatment by family. Instead several items collectively ask about a variety of victimization experiences from both family and non-family members. Using these items, a child maltreatment variable was created, and then transformed into a dichotomous variable to reflect whether a child experience any type of maltreatment (exposure to domestic violence, sexual abuse, physical abuse, neglect or multiple types) by some family member or person living in the household.

Types of maltreatment

Neglect

The second independent variable captures whether youth has experienced some form of neglect by their family (0 = No, 1 = Yes).

Physical Abuse

The third independent variable captures whether youth has experienced some form of physical abuse by their family or in their home (0 = No, 1 = Yes).

Sexual Abuse

The fourth independent variable captures whether youth has experienced some form of sexual abuse by their family (0 = No, 1 = Yes).

Multiple Types of Maltreatment

The fifth independent variable captures whether youth has experienced some form of multiple type of maltreatment (0 = No, 1 = Yes). Youth who have experienced multiple type maltreatment will have experienced any of the following combinations of victimization: physical abuse and neglect, physical abuse and sexual abuse, sexual abuse and neglect, or all three types.

Family belonging

The family belonging scale captures the current level of belonging (within past 6 months of CPACT interview) and was created into an ordinal variable with 4 levels using two items that collectively assess the level of family support and family-youth closeness (0= No family belonging, 1= little family belonging, 2= Medium level of family belonging, 3 = High level of family belonging). The specific items used to create the family belonging variable are as follows: 1. Family willingness to help support youth (0=Consistently, 1= Inconsistently, 2 = None or Belittling of Youth), and 2. Youth has immediate family members such as parents and/or sibling

that they he or she feels close to (0=No, 1= Yes). Although the second item assesses for whether a youth feels close to each member of his/or her family member and hence, has multiple categories, this item is modified into a binary factor to be included into the family belonging measure. For the purposes of the analyses, the family belonging variable will be treated as a continuous measure (Rhemtulla, 2012). It is important to note here that if the Cronbach alpha level of the two family belonging items are not at the appropriate level to indicate an internal consistency, then the item “family closeness” will be used instead, as theoretically the construct of feeling close to family members may be a stronger indicator of belonging based on how family belonging is described in the literature (Riggs et al, 2009; King & Boyd, 2016)

Dependent Variables

Violent behavior

The main independent variable in three of the four analyses to answer the research questions is violent behavior. Violent behavior is operationalized as a dichotomous variable (No= 0, Yes =1) measuring the presence of a criminal justice record of a misdemeanor or felony referral for an against person offense (threats of harm, force, physical harm, aggressive sexual conduct such as assault or harassment). Since the first completed CPACT of each youth is being analyzed, any record of against person offenses will be the first official referral for which the youth has been given some form of community supervision as a result of either diversion, adjudication withheld, adjudication, or deferred prosecution. Specifically, violent behavior is a measure of recent violent offenses that precipitated youth being court ordered to community supervision, not any violent behavior the youth may have engaged in prior to their involvement with the justice system. The rationale behind combining items for felony and misdemeanor offenses into one item instead of assessing them independently, stem from the fact that there can

be variations in charges that are partially due to jurisdiction, prior criminal history, and plea bargaining, which are essentially features of the court system and not always characteristic of the severity of the offense (Cole, 1970; Herman, 2012).

Family belonging

The main dependent variable in the two of five remaining analyses is family belonging. The same operationalization used in the family belonging independent variable will be used for this dependent variable. Family belonging will also be used as a moderator to test one of the research hypotheses.

Control Variables

For models with violence as the dependent variable, a total of ten variables will be controlled for. The first set of control variables includes demographic characteristics of the youth and additional social status variables that have been demonstrated to empirically related to aggressive behavior or both child maltreatment and aggressive behavior (Farrington, 1989; Jarjoura, 1993; Langhinrichsen-Rohling, Neidi & Thorn, 1995; Beyers, 2001) These five variables include race, age, gender, education status, and socioeconomic status based on annual family income (SES). Race is coded as a categorical variable (0= White or Hispanic, 1= Black), while gender and SES are both coded as dichotomous variables (Female =0, Male=1) (Family Income above \$15,000= 0, Family Income below \$15,000=1). The cut off limit from family income used in this study is what is typically used in social science research to identify families living at the poverty level or below (Hsieh & Pugh, 1993; Short, 2018). Age will be coded as a dichotomous variable (under age 16 years old = 0, 16 years and older = 1).

In addition to the demographic variables, family, social, and individual level factors that have been shown to be linked to aggression and child maltreatment will be controlled for in

analyses (Farrington, 1989; Gorman-Smith et al, 1996; Hawkins et al, 2000; Andrews & Bonta, 2014). Specifically, whether youth has a parent or caretaker living in the same household who was incarcerated (=1) or not (=0) will be included as this variable may capture a familial history of criminal behavior and potentially account for certain genetic factors if a biological parent was incarcerated. Unfortunately, no data is available to specify if the parent incarcerated is indeed a biological parent. Additionally, whether youth has a parent with a history of either mental health, substance abuse or physical health problems will also be included in analyses, given the relationship between parental problems like substance abuse and mental health disorder, with both child maltreatment and violence (Wolock & Magura, 1996; Chaffin, Kelleher & Hollenberg, 1996). This variable will be operationalized as a binary variable measuring whether youth has a parent or caretaker with a history of physical, mental, and/or substance abuse health problems (=1) or not (=0).

While having delinquent and anti-social peers is documented to be linked to delinquency in general (Farrington, 1989; Hawkins et al, 2000; Henry, Tolan & Gorman-Smith, 2001), not having any friends has been empirically shown to be specifically related to against person offenses like sexual and violent offending (McCorkle, 1992; Boyd, Hagan & Cho, 1999; Nagin & Tremblay, 2003). Hence, a variable measuring youth's lack of friendship network will be included as well. This variable will be operationalized as a binary variable measuring whether youth has had friends of any type (=0) or no friends at all (=1).

Research has consistently identified anti-social cognition and attitudes as a significant predictor of not just general crime, but violence as well (Katz, 1988; Farrington, 1989; Andrews & Bonta, 2006). Anti-social beliefs will be operationalized as a dichotomous variable measuring whether youth believes in antisocial behavior such as fighting and physical aggression to solve

problems (=1) or not (=0). Lastly, it is important to account for a youth's level of self-control given the documented link between low trait and state self-control with delinquency, aggression, and violence (Gottfredson & Hirschi, 1990; Piquero et al, 2005; Sinclair, Ladny & Lyndon, 2011; Denson, DeWall & Finkel, 2012).

To account for the influence of low self-control on violent behavior, youth's self-control will be operationalized as a dichotomous variable measuring whether youth has self-control over impulsive behaviors (=1) or not (=0). The only items available to assess antisocial beliefs and self-control are current measurements (within past 6 months of completing the CPACT). However, both self-control and anti-social traits tend to be stable over time (Loeber, 1982; Hirschi & Gottfredson, 1983; Miller, Lynam, & Leukefield, 2003; Beaver et al, 2008) so it is likely that the existing values of these two variables for youth are reflective of past measures

For models with family belonging as the dependent variable, gender and age will be controlled for as research on predictive factors of family social processes, suggest that levels of belonging and/or closeness may differ between boys and girls and between different age groups. Additionally, race and SES will be controlled for as well, as empirical research indicates there may be cultural differences in how family belonging is perceived (Larson et al, 1996; Moore et al, 2004; King & Body, 2007) and strains common among low income/poverty families may influence family belonging and childhood maltreatment. Also, a history of parental mental and physical health problems will be controlled for in analyses with family belonging as the dependent variable.

Methods of Statistical Analyses

Initial Analyses

Before conducting analyses to answer the specific research questions, initial analyses will be performed to assess the mean values of each of the independent, dependent and control variables. Descriptive analyses will be conducted on all independent, dependent, and control variables to determine mean values of each factor in the sample. To test the internal consistency of the three items in the family belonging scale to ensure that they are positively related to each other, Cronbach's Alpha values will be estimated. Bivariate correlational analysis (e.g., Spearman's Rho) will be conducted to determine if a statistically significant relationship exists between 1: child maltreatment and violence, 2. Child maltreatment and family belonging, and 3 family belonging and likelihood to commit violence. After the bivariate analyses are conducted, regression analyses will be performed to account for key variables that may confound the relationship between the independent and dependent variable and each model.

Binary Logistic Regression

The primary analysis used in this study is multiple regression, which is used for causal analysis when exploring the effect of an independent variable on one dependent variable while controlling for additional variables that may influence the dependent variable, thus reducing the possibility of inferring spurious relationships (Allison, 1999). For example, by including multiple variables into the regression model (i.e., both the independent variable and control variables), it can be determined if a history of child maltreatment has a unique effect on the likelihood of violence, after controlling for other variables that may potentially affect the likelihood of violence. Specifically, binary logistic regression will be used to determine the

relationship between the independent variable on the dependent binary variable, after controlling for other factors (Allison, 1999). The coefficients produced are measures of how much the dependent variable changes with a one unit increase in the independent variable (Allison, 1999).

Analyses Plan to Answer the Research Questions

Influence of Maltreatment of Any Type on the Likelihood to Commit Violence

The first research question addresses whether a history of child maltreatment of any type influences the likelihood that the child will have a violent offense on their juvenile justice record. Binary logistic regression will be conducted to determine if children who have a history of maltreatment are more likely to have a juvenile justice record of a violent offense than children without a history of maltreatment. Control variables that will be used include: race, age, gender, socioeconomic status, self-control, antisocial attitudes, parental incarceration, parental history of health problems, and peer network

Influence of Type of Maltreatment on Likelihood to Commit Violence

The second research question addresses whether the type of history of maltreatment (e.g., no maltreatment, neglect, physical abuse, sexual abuse, multiple types of maltreatment) influences the likelihood that the child will have a juvenile justice record of a violence offense. Binary logistic regression will be used to determine the effect of each type of history of maltreatment on likelihood of having an against person offense on one's juvenile justice record.

Influence of Maltreatment on Family Belonging

The third research question focuses on the effect of a history of maltreatment on family belonging. Given the dichotomous nature the family belonging variable, binary logistic

regression will be used to determine the effect of a history of maltreatment on a child's levels of family belonging. To reduce the interpretation of a spurious relationship between history of child maltreatment and family belonging, the following variables will be controlled for in the model: gender, age, and race, SES, and parental problems).

Influence of Family Belonging on Likelihood to Commit Violence

The fourth research question focuses on the effect of a family belonging on youth's chances of being referred to community supervision for a violent offense. Binary logistic regression will be conducted to determine if children without family belonging are more likely to have a juvenile justice record of a violent offense than children with family belonging. To reduce the interpretation of a spurious relationship between family belonging and likelihood of engaging in violence, the following variables will be controlled for in the model: gender, age, and race, SES, parental problems, self-control, antisocial attitudes, parental incarceration, history of maltreatment, and peer network.

Influence of Family Belonging on the Relationship Between Different Types of Maltreatment and the Likelihood to Commit Violence

Provided that childhood maltreatment does have a significant effect on the likelihood to commit violence, binary logistic regression will be used to determine if family belonging moderates the relationship between history of each type of childhood maltreatment and the likelihood of having a juvenile justice record of a violent offense. Control variables that will be used in this model include: race, age, gender, socioeconomic status, self-control, antisocial attitudes, parental incarceration, and parental history of health problems, and peer network.

CHAPTER 5

RESEARCH FINDINGS

This chapter presents the findings from the empirical analyses to answer the research questions that collectively assess the effects of child maltreatment on the likelihood of commission of violence, as well as the influence of family belonging on the relationship between maltreatment and the likelihood to commit violence among at risk youth. Specifically, the first research question asks about the effect of any type of childhood maltreatment on the likelihood of youth to commit violence, the second question asks about the effect of each type of maltreatment on the likelihood to commit violence, the third research question inquires as to whether maltreated children have lower levels of family belonging than non-maltreated children, and the fourth research question asks about the influence of family belonging on the likelihood of youth committing violence. Lastly, the fifth question assesses the influence of family belonging on the relationship between each type of childhood maltreatment and chances of committing violence.

Before conducting regression analyses to determine the answers to the research questions, descriptive analyses were conducted for all the independent, dependent and control variables. Additionally, Cronbach's alpha was calculated to assess the consistency of the three items used to create the family belonging scale. Spearman's Rho was calculated to assess for a significant relationship between a history of any type of maltreatment and family belonging, and for any significant relationships between a record of violent offense and the type of maltreatment (sexual abuse, physical abuse, neglect, and multiple type maltreatment)

Descriptive and Correlation Statistics

Descriptive Statistics

Table 1 presents the means of all independent, dependent and control variables for the sample of 6,537 youth ordered to community supervision who either completed community supervision or was transferred to residential placement during the 2010-2011 Florida Department of Juvenile Justice fiscal year. Table 2 presents data for the continuous dependent variable family belonging. Since data is used only from youth's first CPACT assessment, this data represents characteristics of these youth when they first entered the juvenile justice system.

Table 1: Descriptive Statistics of all Independent, Dependent, and Control Variables

	(%)	Frequency
<i>Independent Variables</i>		
<i>History of Any Maltreatment</i>	16	1,009
<i>History of Neglect</i>	7	471
<i>History of Sexual Abuse</i>	2	158
<i>History of Physical Abuse</i>	11	688
<i>Multiple Type: Neglect, Physical and Sexual Abuse</i>	4	274
<i>Dependent Variables</i>		
<i>Violent Offense</i>	53	3,563
<i>Three or More Violent Offenses</i>	10	675
<i>Family Belonging</i>	70	4,708
<i>Control Variables</i>		
<i>SES- poverty</i>	28	1,854
<i>Has Self-Control</i>	62	4,023
<i>Parental/Caretaker Incarceration</i>	34	2,237
<i>Belief in use of Aggression</i>	32	2,135
<i>No Friends</i>	4	283
<i>Parental History of Mental or Physical Health Problems</i>	21	1,394
<i>Gender-Male</i>	77	5,009
<i>Race-Black</i>	47	3,100
<i>Age at 1st referral-older than 16</i>	4	239

Note: All variables are binary measures (0 =No, 1 = Yes) (n=6,537)

Independent variables

As seen in Table 1, 15% of youth experienced some form of maltreatment at home or from family. Specifically, 7% experienced of youth have a history of neglect, 2% have a history of sexual abuse, 11% have a history of physical abuse, and 4% have a history of more than one type of maltreatment. Important to note is that the individual percentages of each maltreatment type do not equal to the 15% youth who experienced any type of maltreatment because the individual percentages are simply a measure of the presence of such maltreatment For example, out of 11% of youth who have a history of physical abuse, a certain portion of them may also fall under the 7% who have experiencing neglect.

Dependent variables

Out of the 6, 537 youth, 53% were referred to community supervision for a violent offense (youth can have additional types of offenses as well), while 10% of this sample have been charged with three or more violent offenses. With regards to the variable family belonging, 70% of youth have family belonging meaning that these youth feel close to either a parent, stepparent, caretaker and/or sibling.

Control variables

With regards to youth's socioeconomic status, 28% of youth live in poverty (i.e., a household where the annual income is below \$15,000 a year). 62% of youth are reported to have self-control (referred in the CPAC to as ability to control impulse behavior). More than a third of youth (34%) had either a parent or caretaker living with them who had been incarcerated for three or more months, while 21% have a parent or caretaker who has a history of physical health and/or mental health problems. While the majority of youth reported having a combination of antisocial and pro-social friends, 4% reported having no friends. 33% of youth possess the belief

that it is appropriate to use aggression and/or violence to solve problems. Out of the 6,537 youth, 77% are male, 47% are black, and 4% were 16 years of age or older when first referred to community supervision.

The 15% of youth who experienced either physical abuse, sexual abuse, or neglect or a combination of these maltreatment types, is above the national average of 12.5% (Stoletenborgh et al, 2015). Although official estimates of parental incarceration provide incarceration rates of parents as opposed to non-parental caretakers, 34% is still significantly above the national average estimate of 4% of children who have a parent in either jail or prison (Pewresearch.org). In accordance with other estimates, black youth are over represented in this sample (47%) compared to the estimate of 17% of African-American/Black youth in the state of Florida (census.gov). It is important to note is that there is empirical evidence indicating that this over-representation of black youth in the juvenile justice system is not due to black children committing more delinquency, but due to disproportionate contact with the juvenile justice system (i.e., being at higher risk for being arrested and convicted) (Thornberry, 1973 Bishop & Frazier, 1988; Ericson & Eckberg, 2016).

Cronbach's Alpha

The two items initially planned on being used to construct the family belonging scale were: family willingness to help support youth and feeling close to an immediate family member such as a parent/caretaker and/or sibling. The alpha value was 0.42, which indicates a poor level of consistency among the items (Lewis & Loewenthal, 2015). Given the lack of consistency between the two items, the item assessing for family closeness was used as an indicator for family belonging. Between the two items, family closeness appears to be the best indicator of family belonging based on previous theoretical and empirical research (Riggs et al, 2009; King

& Boyd, 2016). The new measure of family belonging/closeness was created into binary variable that measures whether or not youth has a close relationship with either a mother/female caretaker, father/male caretaker, male sibling or female sibling.

Correlation Analyses

Table 2 presents findings of a Spearman's R correlation test comparing the frequencies of violent offense referrals between maltreated youth versus those not maltreated. There is a positive correlation between youth having a history of maltreatment and referrals for violent offenses that is highly statistically significant ($r_s = 0.07, p < .001$). Children who experienced maltreatment were more likely to be referred to the juvenile justice court system for a violent offense than children who did not experience maltreatment. Specifically, 52% of non-maltreated children committed a violence crime compared to 61% of maltreated youth.

Table 2: Effect of a History of Maltreatment on the Likelihood of Youth being Referred for a Violent Offense

<i>Violent Offense Referral</i>	<i>History of Maltreatment</i>		
	<i>No</i>	<i>Yes</i>	<i>Total</i>
<i>No</i>	2,679(48%)	395 (39 %)	3,074
<i>Yes</i>	2,849(52%)	614 (61%)	3,463
<i>Total</i>	5,528(85%)	1,009(15%)	6,537

Note: $r_s = 0.07^{**}$ $p < 0.001$ (two tailed test) (n= 6,537)

Table 3 presents findings of a Spearman's R correlation test comparing the frequency of violent offense referrals between neglected youth versus those not neglected. There is a weak positive correlation between history of neglect and referrals for violent offenses which was statistically significant ($r_s = 0.03, p < .01$). Children who experienced neglect were more likely to be referred to the juvenile justice court system for a violent offense than children who did not

experience neglect. Specifically, 58% neglected youth committed a violence crime compared to 53% of non-neglected youth.

Table 3: Effect of a History of Neglect on the Likelihood of Youth being Referred for a Violent Offense

<i>Violence Offense Referral</i>	<i>History of Neglect</i>		
	<i>No</i>	<i>Yes</i>	<i>Total</i>
<i>No</i>	2,877 (47%)	197 (42%)	3,074
<i>Yes</i>	3,189 (53%)	274 (58%)	3,463
<i>Total</i>	6,066 (93%)	471 (7%)	6,537

Note: $r_s = 0.03^*$ $p < 0.05$ (two tailed test) (n= 6,537)

Table 4 presents findings of a Spearman's R correlation test comparing the frequency of violent offense referrals between physically abused versus not physically abused youth. There is a positive correlation between history of physical abuse and referrals for violent offenses that is highly statistically significant ($r_s = 0.07$ $p < .001$). Children who experienced physical abuse were more likely to be referred to the juvenile justice court system for a violent offense than children who did not experience physical abuse. Specifically, 52% of children who were not physically abused committed a violent crime compared to 64% of physically abused children.

Table 4: Effect of a History of Physical Abuse on the Likelihood of Youth being Referred for a Violent Offense

<i>Violence Offense Referral</i>	<i>History of Physical Abuse</i>		
	<i>No</i>	<i>Yes</i>	<i>Total</i>
<i>No</i>	2,823 (48%)	251 (36%)	3,074
<i>Yes</i>	3,026 (52%)	437 (64%)	3,463
<i>Total</i>	5,849 (89%)	688 (11%)	6,537

Note: $r_s = 0.07^{**}$ $p < 0.001$ (two tailed test) (n= 6,537)

Table 5 presents findings of a Spearman's R correlation test comparing the frequency of violent offense referrals between sexually abused youth verses those not sexually abused. There

is weak positive correlation between youth having a history of sexual abuse and referrals for violent offenses that is highly statistically significant ($r_s = 0.05$ $p < .001$).

Children with a history of sexual abuse were more likely to be referred to the juvenile justice court system for a violent offense than children who did not experience sexual abuse. 67% of sexually abused juveniles committed a violent offense compared to 53% of juveniles not sexually abused.

Table 5: Effect of a History of Sexual Abuse on the Likelihood of Youth being Referred for a Violent Offense

<i>Violence Offense Referral</i>	<i>History of Sexual Abuse</i>		
	<i>No</i>	<i>Yes</i>	<i>Total</i>
<i>No</i>	3,022 (47%)	52 (33%)	3,074
<i>Yes</i>	3,357 (53%)	106 (67%)	3,463
<i>Total</i>	6,379 (97%)	158 (3%)	6,537

Note: $r_s = 0.05^{**}$ $p < 0.001$ (two tailed test) (n= 6,537)

Table 6 presents findings of a Spearman's R correlation test comparing the frequency of violent offense referrals between youth who experienced more than one type of maltreatment to youth who did not (i.e., youth who experienced either no maltreatment or physical or sexual abuse, or neglect). There is a highly statistically significant ($r_s = 0.05$ $p < .001$) positive correlation between youth having a history of multiple type maltreatment and referrals for violent offenses, such that youth who experienced more than one type of maltreatment were significantly more likely to be referred to the juvenile justice court system for a violent offense than those did not have a history multiple types of maltreatment. Specifically, 66% of children who experienced multiple types of maltreatment committed violence , compared to the 52% of children who did not experience multiple forms of maltreatment (i.e., experienced one type of maltreatment or no maltreatment) and committed violence.

Table 6: Effects of a History of Multiple Types of Maltreatment on the Likelihood of Youth being Referred for a Violent Offense

<i>Presence of Violence Offense</i>	<i>History of Multiple Type Maltreatment</i>		
	<i>No</i>	<i>Yes</i>	<i>Total</i>
<i>No</i>	2,982 (48%)	92 (34%)	3,074
<i>Yes</i>	3,281 (52%)	182 (66%)	3,463
<i>Total</i>	6,263 (96%)	274 (4%)	6,537

Note: $r_s = 0.05^{**}$ $p < 0.001$ (two tailed test) (n= 6,537)

Table 7 presents findings from a Spearman's Rho test comparing the frequency of youth with family belonging between maltreated and non-maltreated youth. Spearman's R value indicates a significant negative correlation ($r = -.14$ $p < .001$) between family belonging and maltreatment. Children who experienced maltreatment were significantly less likely to have family belonging than children who did not experience maltreatment. Specifically, 57% of maltreated children have family belonging, compared to 75% of non- maltreated children.

Table 7: Effects of a History of Any Type of Maltreatment on the Likelihood of Youth Having Family Belonging

<i>Family Belonging</i>	<i>History of Any Type Maltreatment</i>		
	<i>No</i>	<i>Yes</i>	<i>Total</i>
<i>No</i>	1,397 (25%)	432 (43%)	1,829
<i>Yes</i>	4,131 (75%)	577 (57%)	4,708
<i>Total</i>	5,528	1,009	6,537

Note: $r_s = -.14^{**}$ $p < 0.001$ (two tailed test) (n= 6,537)

Table 8 presents findings from a Spearman's R Correlation test comparing the referrals for violence between children with and without family belonging. There is a negative correlation between family belonging and referrals for violent offenses. Children who do not have family belonging were significantly more likely to be referred to the juvenile justice court system for a violent offense than children who do have a sense of family belonging. These results were highly

statistically significant, $r_s = -0.06$, $p < 0.001$. Specifically, 58% of children without any family belonging committed a violent offense compared to 51% of children with family belonging.

Table 8: Effects of Youth Having Family Belonging on the Likelihood of Being Referred for a Violent Offense

<i>Violent Offense</i>	<i>Family Belonging</i>		
	<i>No</i>	<i>Yes</i>	<i>Total</i>
<i>No</i>	770 (42%)	2,304 (49%)	3,074
<i>Yes</i>	1,059 (58%)	2,404 (51%)	3,463
<i>Total</i>	1,829	4,708	6,537

Note: $r_s = -.14^{**}$ $p < 0.001$ (two tailed test) (n= 6,537)

Summary of Correlation Analyses

The p values and coefficients of the bivariate analysis examining each type of maltreatment with the likelihood to commit violence indicate a statistically significant relationship in the expected direction. Additionally, the p values and coefficients of the bivariate analyses examining the relationship between family belonging and maltreatment, and family belonging with the likelihood to commit violence also suggest a statistically significant relationship in the expected direction. Since all of the p values of the bivariate correlations indicate a statistically significant relationships between either maltreatment and violence (Tables 3 to 6) maltreatment and family belonging (Table 7) or family belonging and violence (Table 9), multivariate models will be created and analyzed to account for various control factors to determine if these relationships continue to remain statistically significant.

Research Questions and Empirical Results

Research Question 1

The first research question asks: does a childhood history of maltreatment increase the likelihood that a youth will be officially referred to the juvenile justice system for an against

person (violent) offense? Table 9 displays the results of the logistic regression analysis of the effect of any type of childhood maltreatment on the likelihood of youth engaging in a violent offense. The unstandardized regression coefficient indicates that a history of child maltreatment significantly increases the likelihood of being referred to the juvenile justice system for a violent offense ($b = 0.269$ $p < .001$), and that this increase is not due to random sampling error. The odds ratio of 1.31 indicates that being maltreated in any form (e.g., neglected, sexually abused, physically abused, or multiple types) increases the odds of committing a violent offense by 31 %. Therefore, this finding indicates that the answer to research question 1 is that maltreatment does significantly increase the likelihood of committing violent behavior.

Examination of the 9 control variables in Table 9 reveals that additional factors are also significantly associated with the likelihood of committing violence. Having no friends at all (antisocial or prosocial) increases the odds of youth committing a violent offense by 33%. This increase is statistically significant ($b = 0.286$ $p < 0.05$). Having a parent or caretaker that has been incarcerated does not statistically increase the likelihood of youth committing violence ($b = 0.025$ $p = 0.851$.) Having self-control significantly reduces the odds of committing a violent offense by 12% compared to not having self-control ($b = -0.123$ $p < .05$) Important to note is that having a parent with a history of mental or physical health problems, actually significantly decreases the likelihood committing a violent offense ($b = -0.137$ $p < 0.05$), which is contrast to what one would expect given the empirical research supporting a link between parental history of such problems and delinquency in general (Suchman & Luthar, 2000; Elgar et al, 2004).

A belief in using aggression to solve problems is highly statistically significantly linked to a likelihood of being court ordered to community supervision for a violent offense ($b = 0.753$ $p < .001$). Having such a belief significantly increases the odds of committing violence by 112%.

Being black significantly increases the odds of being court ordered to community supervision for a violent offense by 25% ($b = 0.218$ $p < 0.05$). Surprising, is that the coefficient for the male variable indicates that being male statistically significantly decreases the chances of committing a violent offense by 19% ($b = -0.210$ $p < .001$). Being a child living in a low SES family significantly increases the chances of committing a violent offense ($b = 0.118$ $p < .05$). The odds ratio of 1.14 specifies that living in poverty increases the odds of having a violent offense by 14%.

In this sample of offenders sentenced to community supervision, children 16 years of age and older are significantly less likely to be officially referred to community supervision for a violent offense ($b = -.518$ $p < .0001$). The odds ratio for the age variable indicates that being child older than 16 decreases the odds of committing a violent offense by 40%. Based on the results in Table 9, the four largest significant predictors of youth being court ordered to community supervision for violent offenses are: Belief in Aggression to Solve Problems, not having any friends, being 16 years or older, and having a history of maltreatment. Based on the results from this binary logistic regression, the answer to research question 1 is: Yes, a history of any type of maltreatment in childhood does significantly increase the likelihood youth committing a violent offense.

Table 9: The Effect of a History of Any Type of Childhood Maltreatment on the Likelihood of Violent Offending

<i>Variable</i>	b	Std. Error	p	Odds Ratio
<i>Any Type of Maltreatment</i>	.269**	.075	.000	1.31
<i>No Friends</i>	.286*	.128	.026	1.33
<i>Parent Jail</i>	.025	.134	.851	1.03
<i>Self-Control</i>	-.123*	.054	.023	0.88
<i>Parent Problems</i>	-.137*	.068	.044	0.87
<i>Belief Aggression Solve Problems</i>	.753**	.057	.000	2.12

Table 9: Continued

<i>Variable</i>	b	Std. Error	p	Odds Ratio
<i>Race- Black</i>	.218**	.052	.000	1.25
<i>Gender-Male</i>	-.210**	.062	.001	0.81
<i>SES poverty</i>	.118*	.058	.043	1.13
<i>Age older than 16</i>	-.518**	.139	.000	0.60
<i>Constant</i>	-.121	.079	.125	0.89

Note: * = $p < 0.05$, ** = $p < 0.001$ (two tailed test) (n= 6,537)

Research Question 2

The second research question asks the following: Among youth with a history of maltreatment, does the type of maltreatment (i.e., maltreatment from family member in the form of either neglect, sexual abuse, physical abuse, or multiple type maltreatment) affect the likelihood that a youth will be officially referred to the juvenile justice system for an against person (violent) offense? Tables 10, 11, 12 and 13 display the results of the logistic regression analyses for the effect of each type of childhood maltreatment (i.e., neglect, sexual abuse, physical abuse and multiple type maltreatment, respectively) on the likelihood of youth engaging in a violent offense. The same set of control variables used in the logistic regression analyses to answer question 1 are used in each of these analyses.

In Table 10, the odds ratio of 1.104 indicates that child neglect increases the odds of being referred to the juvenile justice system for a violent offense by 10%. However, this finding is not statistically significant ($b = 0.099$ $p < .330$). Although initial bivariate analyses revealed a statistically significant positive relationship between childhood neglect and the likelihood to commit violence, when the other 9 control variables are included in the model, neglect no longer significantly impacts violence. Instead, not having any friends and a belief in the use of aggression, are the two variables that have the strongest substantive significant relationships to

the likelihood of being court ordered to community supervision for a violent offense, followed by being black, living in poverty, not having self-control, and being younger than 16 years old respectively. Not having friends significantly increases the odds of committing violence by 35% ($B = 0.300$ $p < .05$), while belief in using aggression to solve problems significantly increases the odds of committing violence by 116% ($b = 0.769$ $p < .001$). A history of parental mental and physical problems is no longer significantly associated with likelihood to commit a violence offense ($b = -0.110$ $p = 0.105$). Based on the result from this binary logistic regression, the answer to the first part of question 2 is: No, being neglected in childhood is not associated with a statistically significant increase in the likelihood of youth committing violence.

Table 10: The Effect of a History of Childhood Neglect on the Likelihood of Being Court Ordered to Community Supervision for a Violent Offense

<i>Variable</i>	<i>b</i>	<i>Std. Error</i>	<i>p</i>	<i>Odds Ratio</i>
<i>History of Childhood Neglect</i>	.099	.101	.330	1.10
<i>No Friends</i>	.300*	.128	.019	1.35
<i>Race-Black</i>	.401**	.052	.000	1.49
<i>Has Self-Control</i>	-.133*	.054	.014	0.88
<i>SES poverty</i>	.120*	.058	.040	1.13
<i>Parent Jail</i>	.037	.134	.784	1.04
<i>Parent Problems</i>	-.110	.068	.105	0.89
<i>Belief Aggression Solve Problems</i>	.769**	.057	.000	2.16
<i>Gender-Male</i>	-.234**	.061	.000	0.79
<i>Age older than 16</i>	-.518**	.139	.000	0.59
<i>Constant</i>	-.067	.077	.388	0.93

Note: * = $p < 0.05$, ** = $p < 0.01$ (two tailed test) (n = 6,537)

Table 11 reveals the likelihood of youth committing a violent offense if they have a history of being sexually abused by a family member. The odds ratio of 1.53 indicates that prevalence of sexual abuse from a family member in childhood increases the odds of being court ordered to community supervision for a violent offense by 53%, even after controlling for potentially confounding variables. This finding indicates a statistically significant moderate

relationship between being sexually victimized in childhood and being court ordered to community supervision for a violent offense ($b = 0.428$ $p < .01$). The p value indicates that there is less than a 1.6 % chance that the finding is due to random sampling error. As with the findings from Tables 9 and 10, not having friends ($b = 0.298$ $p < .05$) and belief in using aggression ($b = 0.769$ $p < .001$) to solve problems have the strongest relationship to the likelihood committing violence, and both significantly increase the odds of committing a violent offense by 35% and 115% respectively.

Once again, not having friends is significantly related to an increase in the likelihood to commit violence ($b = .298$ $p < .05$). Having self-control results in a significant decrease in the odds of committing a violent offense, specifically by 13% ($b = -0.133$ $p < .05$). Living in poverty increases the odds of committing a violent offense by 13%, and this increase is statistically significant ($b = .122$ $p < .05$). Also, worth noting is that having parents who have a history of mental or physical health problems is no longer associated a significant decrease in the odds of committing a violent offense ($p < .105$). Being older than 16 is associated with a significant decrease in committing violence ($b = -0.520$ $p < .001$). As with previous findings from the logistic regression models, even though childhood maltreatment is significantly associated with an increase in the odds of committing violence, antisocial beliefs like belief in the use of aggression to solve problems increases the likelihood of being court ordered to community supervision for a violent offense the most. Specifically, belief in use of aggression to solve problems is associated with a significant increase in the odds of committing a violent offense by 116%. Being older than 16 reduces the odds of being court ordered to community supervision for a violent offense by 41%. Based on the results from this binary logistic regression analysis, the answer to the second

part of question 2 is: Yes, being sexually abused in childhood results in a statistically significant increase in the likelihood of committing violence.

Table 11: The Effect of History of Childhood Sexual Abuse on Likelihood of Being Court Ordered to Community Supervision for a Violent Offense

<i>Variable</i>	<i>b</i>	<i>Std. Error</i>	<i>p</i>	<i>Odds Ratio</i>
<i>History of Childhood Sexual Abuse</i>	.428*	.178	.01	1.53
<i>No Friends</i>	.298*	.128	.020	1.35
<i>Race-Black</i>	.404**	.052	.000	1.49
<i>Has Self-Control</i>	-.133*	.054	.014	0.87
<i>SES poverty</i>	.122*	.058	.036	1.13
<i>Parent Jail</i>	.045	.134	.737	1.05
<i>Parent Problems</i>	-.109	.067	.107	0.89
<i>Belief Aggression Solve Problems</i>	.769**	.057	.000	2.16
<i>Gender-Male</i>	-.211*	.062	.001	0.80
<i>Age-older than 16</i>	-.520**	.139	.000	0.59
<i>Constant</i>	-.089	.078	.256	0.92

Note: * = $p < 0.05$, ** = $p < 0.01$ (two tailed test) (n = 6,537)

Table 12 reveals the likelihood of youth committing a violence offense if they have a history of physical abuse. The odds ratio of 1.43 indicates that prevalence of physical abuse in childhood increases the odds of being court ordered to community supervision for a violent offense by 43%. In contrast to the relationship between neglect and commission of violence, this relationship is highly statistically significant ($b = 0.359$ $p < .001$). With regards to the control variables, not having friends significantly increases the likelihood of youth engaging in a violent offense by 34% ($b = 0.290$ $p < .024$). Additionally, being black, not having self-control, living in poverty, having a belief in using aggression to solve problems, being female, and being older than 16 years of age are all associated with statistically significant increases in the likelihood of youth being court ordered to community supervision for a violent offense. As with the previous analysis, one of the most surprising findings with regards to the control variables is that females consistently have a higher odds of committing a violent offense. This finding is in contrast to previous empirical research indicating that males are more likely to engage in violence (Bennett,

Farrington & Huessman, 2005; Lansford et al, 2012). Important to note, however, is that this finding may simply be a result of females being more likely to be sent to community supervision for violent offense, while males are more likely to be sentenced harshly for violent offense and therefore referred to residential placement for initial aggressive offenses.

In contrast to the findings in tables 10 and 11, having parents with history of physical or mental problems *is* associated with significant decrease in the odds of committing a violent offense ($p < .05$). This is similar to the binary logistic regression model results in table 8 which display the findings of the relationship between any type of childhood maltreatment and likelihood of being court ordered to community supervision for a violent offense. Based on this binary logistic regression analysis, the answer to the third part of research question 2 is: Yes, being physically abused in childhood results in a statistically significant increase the likelihood of committing violence.

Table 12: The Effect of a History of Childhood Physical Abuse on Likelihood of Being Court Ordered to Community Supervision for a Violent Offense

<i>Variable</i>	<i>b</i>	<i>Std. Error</i>	<i>p</i>	<i>Odds Ratio</i>
<i>History of Childhood Physical Abuse</i>	.359**	.088	.000	1.43
<i>No Friends</i>	.290*	.128	.024	1.33
<i>Race-Black</i>	.418**	.052	.000	1.52
<i>Has Self-Control</i>	-.126*	.054	.020	0.88
<i>SES poverty</i>	.122*	.058	.037	1.13
<i>Parent Jail</i>	.021	.134	.874	1.02
<i>Parent Problems</i>	-.134*	.068	.049	0.87
<i>Belief Aggression Solve Problems</i>	.749**	.057	.000	2.11
<i>Gender-Male</i>	-.210**	.062	.001	0.81
<i>Age-older than 16</i>	-.509**	.139	.000	0.60
<i>Constant</i>	-.067	.077	.388	0.93

Note: * = $p < 0.05$, ** = $p < 0.01$ (two tailed test) (n= 6,537)

Table 13 reveals the likelihood of youth being court ordered to community supervision for a violent offense if they have a history of experiencing more than one type of maltreatment (i.e., any combination of physical abuse, sexual abuse and neglect). The most common form of maltreatment among the 274 youth who experience multiple type maltreatment was physical abuse and neglect, followed by physical abuse and sexual abuse. The odds ratio of 1.46 indicates that prevalence of multiple types of maltreatment in childhood increases the odds of being court ordered to community supervision for a violent offense by 46%. This relationship is highly statistically significant ($b = 0.376$ $p < .01$) even when the 9 control variables are entered into the base model. The p value suggests that there is less than 0.6% chance that this finding is due to random sampling error.

The control variables that were significantly associated with an increase in likelihood to commit violence in the previous statistical models are also significantly associated with likelihood to commit violence in this model. One particular finding worth noting is that a history of parental problems is no longer associated with a significant decrease in the likelihood to commit violence ($b = -0.113$ $p < .093$) which is similar to findings in tables 10 and 12, but different from findings in tables 11 and 13. Based on the results from this binary logistic regression, the answer the last part of research question 2 is: Yes, being maltreated in more than one way in childhood does result in a statistically significant increase in the likelihood of committing violence.

Table 13: The Effect of a History of Multiple Types of Maltreatment on Likelihood of Being Court Ordered to Community Supervision for a Violent Offense

<i>Variable</i>	<i>b</i>	<i>Std. Error</i>	<i>p</i>	<i>Odds Ratio</i>
<i>History of Multiple Types of Maltreatment</i>	.376**	.136	.006	1.46
<i>No Friends</i>	.291*	.128	.023	1.34
<i>Race-Black</i>	.405**	.052	.000	1.50

Table 13: Continued

<i>Variable</i>	<i>b</i>	<i>Std. Error</i>	<i>p</i>	<i>Odds Ratio</i>
<i>Has Self-Control</i>	-.129*	.054	.017	0.88
<i>SES poverty</i>	.117*	.058	.045	1.12
<i>Parent Jail</i>	.039	.134	.772	1.04
<i>Parent Problems</i>	-.113	.068	.093	0.89
<i>Belief Aggression Solve Problems</i>	.762**	.057	.000	2.14
<i>Gender-Male</i>	-.218**	.062	.000	0.80
<i>Age-older than 16</i>	-.517**	.139	.000	0.60
<i>Constant</i>	-.067	.077	.388	0.93

Note: * = $p < 0.05$, ** = $p < 0.01$ (two tailed test) (n= 6,537)

Research Question 3

The third research question asks: does a history of any type of childhood maltreatment affect a youth's level of family belonging? The control variables used in the binary logistic regression analysis to answer research question 3 include: SES poverty, Gender-male, Age- older than 16, Race-black, and Parental mental/physical health problems. Table 14 presents findings of the binary logistic regression analyzing the effect of any type of childhood maltreatment on a child's level of family belonging. The direction of the coefficient ($B = -.655$) indicates that child maltreatment has a negative effect on family belonging. The odds ratio shows that prevalence of any type of maltreatment decreases the odds of committing a violent offense by 48%. This relationship is highly statistically significant ($p < .001$), meaning that this finding is not due to random sampling error.

In addition to child maltreatment, living in poverty and being black also result in statistically significant increase in likelihood of youth having family belonging. Specifically, being male significantly increases the odds of having family belonging by 48%, while being black significantly decreases the odds of having family belonging by 15% ($b = -.167$ $p < .01$), Living in poverty significantly decreases the odds of youth having family belonging by 19%,

while having self-control significantly increases the odds of youth having family belonging by 89% ($b = -.129$ $p < .01$).

Being older than 16 years of age, having a parent that has been in jail for 3 months or more and having parents with a history of physical or mental health issues do not significantly influence the likelihood of youth committing violence. Given that child maltreatment results in a fairly large, significant decrease in family belonging despite the presence of 7 other control variables, the answer to research question 3 is: Yes, a history of any type of child maltreatment does significantly decrease the likelihood of youth having a sense of family belonging.

Table 14: The Effect of Any Childhood Maltreatment on Family Belonging:

<i>Variable</i>	<i>b</i>	<i>Std. Error</i>	<i>p</i>	<i>Odds Ratio</i>
<i>Any Maltreatment</i>	-.655**	.074	.000	0.52
<i>Gender-Male</i>	.396**	.065	.000	1.48
<i>Race-Black</i>	-.167**	.058	.004	.85
<i>Age-older than 16</i>	.030	.157	.846	1.03
<i>Parent Jail</i>	.145	.146	.320	1.15
<i>Parental Problems</i>	-.100	.073	.168	.90
<i>SES poverty</i>	-.201**	.063	.001	.81
<i>Has Self Control</i>	.637**	.057	.000	1.89
<i>Constant</i>	.548	.078	.000	1.72

Note: * = $p < 0.05$, ** = $p < 0.01$ (two tailed test) (n = 6,537)

Research Question 4

Given that bivariate analyses revealed a statistically negative relationship between family belonging and likelihood to commit violence, an additional ten key control variables were entered into the model to examine if the relationship between family belonging and violence commission remained statistically significant. The results of the binary logistic regression are presented in Table 15.

The odds ratio indicates that family belonging (i.e., being close with one's mother or father/caretakers, and/or siblings) decreases the odds of committing violence by 11%, such that youth with family belonging are 11% less likely to commit violence than youth not close to such family members. This reduction is statistically significant ($b = -.120$ $p < .05$) even when the model includes the covariate of history of child maltreatment. With regards to the control variables, having a history of any maltreatment significantly increases the odds of committing violence by 29%, while a belief in using aggression to solve problems significantly increases the odds of committing violence by 111%. Not having friends significantly increases the odds of committing violence by 32% and being male significantly decreases the odds of committing violence by 18%. Being black is associated with a significant increase in the odds of committing violence by 51%, while having parental problems is associated with a significant decrease in the odds of committing violence by 13%. Living in poverty increases the odds of youth committing violence by 12%, while having self-control and being older than age 16 both significantly decrease the odds of youth engaging in violence by 11% and 40% respectively.

Table 15: The Effect of Family Belonging on Likelihood to Commit Violence

<i>Variable</i>	b	Std. Error	p	Odds Ratio
<i>Family Closeness</i>	-.120*	.058	.041	0.89
<i>Any Maltreatment</i>	.254**	.075	.001	1.29
<i>Belief Aggression Solve Problems</i>	.748**	.057	.000	2.11
<i>No Friends</i>	.281*	.128	.029	1.32
<i>Gender-Male</i>	-.201**	.062	.001	0.82
<i>Race-Black</i>	.414**	.052	.000	1.51
<i>Parent Jail</i>	.029	.134	.827	1.03
<i>Parental Problems</i>	-.139*	.068	.041	0.87
<i>SES poverty</i>	.113*	.058	.050	1.12

Table 15: Continued

<i>Variable</i>	<i>b</i>	<i>Std. Error</i>	<i>p</i>	<i>Odds Ratio</i>
<i>Has Self Control</i>	-.109*	.055	.046	0.89
<i>Age older than 16</i>	-.508**	.140	.000	0.60
<i>Constant</i>	-.043	.088	.627	0.96

Note: * = $p < 0.05$, ** = $p < 0.01$ (two tailed test) (n= 6,537)

Research Question 5

The fifth research question asks: does family belonging moderate the association between child maltreatment and likelihood to commit violence? To answer this question, moderating analyses were conducted to assess the impact of family belonging on the relationship between each type of child maltreatment (i.e., neglect, physical abuse, sexual abuse and multiple types of maltreatment) and the likelihood to commit violence. Table 16 presents the base model and full model (with interaction term) for the moderating effect of family belonging on the relationship between neglect and the likelihood to commit violence, while Table 17 presents the base model and full model (with interaction term) for the moderating effect of family belonging on the relationship between sexual abuse and likelihood to commit violence. Table 18 presents the base model and full model (with interaction term) for the moderating effect of family belonging on the relationship between physical abuse and the likelihood to commit violence and Table 19 presents the base model and full model (with interaction term) for the moderating effect of family belonging on the relationship between multiple types of maltreatment and the likelihood to commit violence.

Table 16 presents the results from the logistic regression of violent offenses on neglect, family belonging and the interaction of family belonging and neglect. The odds ratio for neglect in the base model shows that being neglected in childhood results in 8% greater odds of

committing violence, while the odds ratio for family belonging indicates that having family belonging decreases the odds of engaging in violence by 13%. While the effect of family belonging on committing violence is statistically significant ($p < 0.05$), the effect of neglect on committing violence is not statistically significant in the base model, despite being close to the p value cut off point ($p < 0.062$).

The results in the interaction model in Table 16 show that there is a statistically significant effect of family belonging on the likelihood to commit violence ($p < 0.05$), but not a statistically significant effect of neglect on likelihood to commit violence. These findings are similar to the base model. With regards to the interaction term Neglect X Family Belonging, there is not statistically significant relationship despite being in the expected direction. The interpretation of this interaction term means that the odds of childhood neglect increasing the likelihood of youth committing violence decreases by .22 times or by 22% when the youth has family belonging (i.e., when family belonging increases by 1 or is present). Another way of interpreting this finding is that despite no statistically significant effect of neglect on the likelihood to commit violence, *in the absence of family belonging*, childhood neglect will result in a statistically significant increase in the likelihood of family violence by 22%. However, the effect is not statistically significant.

In the interaction model, living in poverty, a belief in use of aggression to solve problems, not having friends and being black are associated with a statistically significant increase the odds of youth engaging in violence by 34%, 115%, 12% and 48% respectively. Having self-control, being older than 16 years of age, and being male all result in a statistically significant decrease in the likelihood of youth being court ordered to community supervision for a violent offense by 14%, 41% and 20% respectively. Based on the findings from this binary

logistic regression analysis, the answer to the first part of research question 5 is: No, the presence of family belonging does not decrease the odds of childhood neglect increasing likelihood of violent behavior.

Table 16: Logistic Regression of Violent Offenses on Neglect, Family Belonging, and Interaction

	Base Model			Family Belonging and Neglect Interaction Model		
<i>Main Effects</i>	b	SE	OR	b	SE	OR
Neglect	.079	.102	1.08	.231	.156	1.26
Family Belonging	-.137*	.058	0.87	-.114*	.061	0.89
<i>Moderating Influences</i>						
Neglect X Family Belonging	---	---	---	-.263	.204	0.77
<i>Control Variables</i>						
SES-poverty	.115*	.058	1.12	.115*	.058	1.12
Aggressive Beliefs	.762**	.057	2.14	.763**	.057	2.15
Parental Problems	-.113	.068	.89	-.111	.068	0.89
Parental Jail	.041	.134	1.04	.040	.134	1.04
Has Self-Control	-.117*	.055	.89	-.118*	.055	.86
No Friends	.293*	.128	1.34	.290*	.128	1.34
Race-Black	.398*	.052	1.48	.399*	.052	1.48
Age-older than 16	-.518**	.139	0.59	-.519**	.139	0.59
Gender-Male	-.222**	.061	0.80	-.221**	.061	0.80

Note: * = $p < 0.05$, ** = $p < 0.01$ (two tailed test) (n = 6,537)

Table 17 presents the results from the logistic regression of violent offenses on sexual abuse, family belonging and the interaction of family belonging and sexual abuse. The odds ratio for sexual abuse in the base model shows that being sexually abused in childhood results in 53% greater odds of committing violence, while the odds ratio for family belonging indicates that having family belonging decreases the odds of engaging in violence by 13%. The effect of family belonging on committing violence is statistically significant ($p < 0.05$) as is the effect of sexual abuse on the likelihood of committing violence ($p < 0.05$).

The results in the interaction model in Table 17 show that while the statistically significant effect of family belonging on the likelihood to commit violence remains ($p < 0.05$), the effect of sexual abuse on the likelihood to commit violence is no longer statistically significant when the interaction term is included in the model. With regards to the interaction term Sexual Abuse X Family Belonging, there is *not* a statistically significant relationship, ($B = .195$ $p < 0.488$). The interpretation of this interaction term means that the odds of childhood sexual abuse affecting the likelihood of youth committing violence, increases by 21% when the youth has family belonging (i.e., when family belonging increases by 1 or is present). This positive effect, if statistically significant, or close to statistical significance, would have initiated an interesting argument as to why the presence of family belonging/closeness affects the relationship between sexual abuse and youth's chances of engaging in violence.

In the interaction model, living in poverty, belief in use of aggression to solve problems, not having friends, and being black are all associated with a statistically significant increase the odds of youth being referred to community supervision for a violent offense by 12%, 114%, 34% and 49% respectively. Having self-control, being older than 16 years of age and being male all result in a statistically significant decrease in the likelihood of youth being court ordered to

community supervision for a violent offense by 11%, 40% and 18% respectively. Based on the findings from this binary logistic regression analysis, the answer to the second part of research question 5 is: No, the presence of family belonging does not moderate the effect of childhood sexual abuse on the likelihood of violent behavior.

Table 17: Logistic Regression of Violent Offenses on Sexual Abuse, Family Belonging, and Interaction

	Base Model			Family Belonging and Sexual Abuse Interaction Model		
<i>Main Effects</i>	b	SE	OR	b	SE	OR
Sexual Abuse	.422*	.179	1.53	.302*	.283	1.12
Family Belonging	-.138*	.058	0.87	-.144*	.059	1.03
<i>Moderating Influences</i>						
Sexual Abuse X Family Belonging	---	---	---	.195	.360	0.59
<i>Control Variables</i>						
SES-poverty	.116*	.058	1.124	.116*	.058	1.12
Aggressive Beliefs	.761**	.057	2.140	.761**	.057	2.14
Parental Problems	-.113	.067	.893	-.113	.067	.89
Parental Jail	.049	.134	1.050	.049	.134	1.05
Has Self-Control	-.116*	.055	.890	-.115*	.055	.89
No Friends	.290*	.128	1.337	.290*	.128	1.34
Race-Black	.401**	.052	1.493	.401**	.052	1.49
Age-older than 16	-.520**	.139	.595	-.520**	.139	.60
Gender-Male	-.199**	.062	.819	-.199**	.062	.82

Note: * = $p < 0.05$, ** = $p < 0.01$ (two tailed test) (n= 6,537)

Table 18 presents the results from the logistic regression of violent offenses on physical abuse, family belonging and the interaction of family belonging and physical abuse. The odds ratio for physical abuse in the base model shows that being physically abused in childhood results in 41% greater odds of committing violence, while the odds ratio for family belonging indicates that having family belonging decreases the odds of engaging in violence by 12%. The effect of family belonging on committing violence is statistically significant ($p < 0.05$) as is the effect of physical abuse on the likelihood of committing violence ($p < 0.01$).

Table 18: Logistic Regression of Violent Offenses on Physical Abuse, Family Belonging, and Interaction

	Base Model			Family Belonging and Physical Abuse Interaction Model		
<i>Main Effects</i>	b	SE	OR	b	SE	OR
Physical Abuse	.342**	.088	1.41	.395**	.137	1.48
Family Belonging	-.119*	.059	.88	-.108*	.062	.89
<i>Moderating Influences</i>						
Physical Abuse X Family Belonging	---	---	---	-.089	.176	.92
<i>Control Variables</i>						
SES-poverty	.117*	.058	1.12	.116*	.058	1.12
Aggressive Beliefs	.743**	.058	2.10	.743**	.058	2.10
Parental Problems	-.137*	.068	.87	-.137*	.068	.87

Note: * = $p < 0.05$, ** = $p < 0.01$ (two tailed test) (n= 6,537)

Table 18: Continued

	Base Model				Family Belonging and Physical Abuse Interaction Model		
<i>Control Variables</i>							
Parental Jail	.025	.134	1.03		.025	.134	1.02
Has Self-Control	-.112*	.055	1.32		-.113*	.055	.89
No Friends	.284*	.128	1.51		.285*	.128	1.33
Race-Black	.415**	.052	.60		.415**	.052	1.51
Age-older than 16	-.509**	.139	.81		-.509**	.139	.60
Gender-Male	-.200**	.062	.81		-.200**	.062	.81
Has Self-Control	-.112*	.055	1.32		-.113*	.055	.89

Note: * = $p < 0.05$, ** = $p < 0.01$ (two tailed test) (n= 6,537)

The results in the interaction model in Table 18 show that the in the presence of the interaction term, the statistically significant effect of family belonging on the likelihood to commit violence remains ($p < 0.05$), as does the effect of physical abuse on likelihood to commit violence ($p < 0.01$). With regards to the interaction term Physical Abuse X Family Belonging, there is *not* a statistically significant relationship, ($b = -.089$ $p < 0.45$), although the coefficient is in the expected direction. The interpretation of this interaction term means that the odds of childhood physical abuse increasing the likelihood of youth committing violence, decreases by 11% when the youth has family belonging (i.e., when family belonging increases by 1 or is present). However, this effect is not statistically significant and therefore, has a fairly high chance of being due to random sampling error.

Similar to the pattern in the previous interaction models, living in poverty, a belief in use of aggression to solve problems, not having friends, and being black are all associated with a

statistically significant increase the odds of youth being referred to community supervision for a violent offense are associated with a statistically significant increase in the odds of youth being referred to community supervision for a violent offense by 12%, 110%, 33%, and 51% respectively. Having a parent with a history of mental health or physical health problems is also associated with a significant decrease in the odds of committing violence, specifically by 13%. Additionally, being older than 16 years of age, being male, and having self-control all result in a statistically significant decrease in the likelihood of youth being court ordered to community supervision for a violent offense by 40%, 19% and 11% respectively. The significant relationship between having parental problems and decrease in the likelihood to commit violence was not observed in the neglect and sexual abuse interaction models. Based on the findings from this binary logistic regression analysis, the answer to the second part of research question 5 is: No, the presence of family belonging does not moderate the effect of childhood physical abuse on the likelihood of violent behavior.

Table 19 presents the results from the binary logistic regression of violent offenses on multiple types of maltreatment, family belonging and the interaction of family belonging and multiple types of maltreatment. The odds ratio for multiple type maltreatment in the base model shows that being maltreated in more than one way in childhood results in 42% greater odds of committing violence, while the odds ratio for family belonging indicates that having family belonging decreases the odds of engaging in violence by 13%. The effect of family belonging on committing violence is statistically significant ($p < 0.05$) as is the effect of multiple type maltreatment on the likelihood of committing violence ($p < 0.01$).

Table 19: Logistic Regression of Violent Offenses on Multiple Type Maltreatment, Family Belonging, and Interaction

	Base Model			Family Belonging and Multiple Type Maltreatment Interaction Model		
<i>Main Effects</i>	b	SE	OR	b	SE	OR
Multiple Maltreatment	.350**	.137	1.42	.371*	.201	1.45
Family Belonging	-.131*	.058	0.87	-.129*	.060	0.88
<i>Moderating Influences</i>						
Multiple Type Maltreatment X Family Belonging	---	---	---	-.040	.272	0.96
<i>Control Variables</i>						
SES-poverty	.111*	.058	1.12	.111	.058	1.12
Aggressive Beliefs	.755**	.057	2.12	.755**	.057	2.12
Parental Problems	-.117	.068	0.89	-.117	.068	0.89
Parental Jail	.042	.134	1.04	.041	.134	1.04
Has Self-Control	-.114*	.055	0.89	.114**	.055	0.89
No Friends	.285*	.128	1.33	.286*	.128	1.33
Race-Black	.402**	.052	1.49	.402**	.052	1.49
Age-older than 16	-.517**	.139	0.59	-.517**	.139	0.59
Gender-Male	-.208**	.062	0.81	-.208**	.062	0.81

Note: * $p < 0.05$ ** $p < .01$ (two tailed test) (n= 6,537)

The results in the interaction model in Table 19 show that the in the presence of the interaction term, the statistically significant effect of family belonging on the likelihood to commit violence remains ($p < 0.05$), as does the effect of multiple type maltreatment on likelihood

to commit violence ($p < 0.05$). With regards to the interaction term Multiple Type Maltreatment X Family Belonging, there is *not* a statistically significant relationship, ($b = -.040$ $p < 0.8$), although the coefficient is in the expected direction. The interpretation of this interaction term means that the odds of multiple maltreatment increasing the likelihood of youth committing violence, decreases by 4 % when the youth has family belonging (i.e., when family belonging increases by 1 or is present). However, this effect is not statistically significant and therefore, has a high chance of being due to random sampling error.

With regards to the control variables, a belief in use of aggression to solve problems, not having friends and being black are all associated with a statistically significant increase in the odds of youth being referred to community supervision for a violent offense by 112%, 33% and 49% respectively. In this model, there is not a statistically significant effect of living in poverty on likelihood to commit violence, although it approaches statistical significance ($p = 0.058$). Having self-control, being older than 16 years of age and being male all result in a statistically significant decrease ($p < 0.01$) in the likelihood of youth being court ordered to community supervision for a violent offense by 11%, 41% and 19% respectively.

Based on the findings from this binary logistic regression analysis, the answer to the second part of research question 5 is: No, the presence of family belonging does not moderate the effect of childhood physical abuse on the likelihood of violent behavior. Based on these results from the binary logistic regression model, the answer to the last part of research question 5 is: No, family belonging does not have a statistically significant moderating effect on the relationship between a childhood history of multiple types of maltreatment and likelihood to commit violence.

Summary of Research Findings

The findings for research question 1 suggest that a history of any type of maltreatment in childhood statistically significantly ($p < 0.01$) increases the likelihood of youth being court ordered to community supervision for a violent offense. The hypothesis for question 1 is supported. With regards to the effects of each specific type of maltreatment on commission of violent behavior, sexual abuse, physical abuse and multiple type maltreatment all statistically significantly ($p < 0.05$ or $p < 0.01$) increase the likelihood of youth engaging in violent behavior. Being neglected in childhood, however, did not significantly increase the odds of youth committing violence. Hence, the hypotheses for research question 2 are mostly supported. Results from the binary logistic regression analysis examining the effect of child maltreatment on family belonging revealed that a history of any type of child maltreatment does indeed statistically significantly decrease the likelihood of youth having family belonging ($p < 0.05$), such that youth who have been maltreated either sexually, physically or neglected are less likely to have family belonging than non-maltreated youth. The hypothesis for research question 3 is thus supported. Findings from the binary logistic regression models to answer the fourth research question revealed the presence of family belonging does statistically decrease the odds of a child engaging in violence behavior decrease. Therefore, the hypothesis for the fourth research question is supported as well. The fifth research question asked about the moderating effect of family belonging on the relationship between each type of maltreatment and youth's likelihood to commit violence. None of the interaction effects between each type of maltreatment and family belonging on the likelihood to commit violence was statistically significant.

While sexual abuse, physical abuse, and multiple types of maltreatment each had statistically significant positive main effects on the likelihood to commit violence and family belonging has a statistically significant effect on the likelihood to commit violence, the

interaction effects between these maltreatment types and family belonging were not significant. Thus, the hypothesis for research question 5 is not supported.

CHAPTER 6

DISCUSSION AND CONCLUSION

Study initiatives on the consequences of child maltreatment have increased in the past 20 years, with the resulting empirical findings shedding light on potential causal factors that link maltreatment to an increase in negative internalizing and externalizing behavior in childhood and adulthood. Of specific focus to child maltreatment research is the phenomenon of the intergenerational transmission of violence. While numerous studies have found support for this cycle of violence (Widom, 1989, Heyman & Slep, 2002; Caspi et al, 2002; Mersky & Reynolds, 2007) there are a limited number of studies exploring if the likelihood of committing violence is partially dependent on the type of maltreatment a child experiences and on the nature of the additional family social processes like closeness and belonging. This dissertation contributes to the prior literature by determining the effects of different types of maltreatment on the likelihood of youth committing violent offenses, and by determining the effects of family belonging on the relationship between each type of childhood maltreatment and likelihood of engaging in violence.

Specifically, the research goals for this study were to 1. assess the effect of any type of maltreatment in childhood on the likelihood of committing a violent offense 2. assess the effects of four different types of maltreatment in childhood maltreatment (i.e., neglect, physical abuse, sexual abuse and multiple type maltreatment) on likelihood of being court ordered for community supervision for violent offenses, 3. determine the effect of any type of child maltreatment on a child's level of family belonging, 4. assess the effect of family belonging on the likelihood to commit a violent offense, and 5. determine the effect of family belonging on the relationship between each type of maltreatment and the likelihood of youth being court ordered

for community supervision for violent offenses. Correlational analyses were first conducted to assess for any statistically significant relationships between the key independent and dependent variables. Next, binary logistic regression was used to answer the five research questions. This chapter will discuss the findings, limitations of the current study, and future directions of research and policy recommendations.

Discussion of Findings

The Relationship Between Maltreatment and the Likelihood of Committing Violence in Childhood

Despite the plethora of researching indicating that child maltreatment is associated with a greater propensity towards violence later in life (Dodge, Bates & Pettit, 1990; Perry, 1997; Widom and Maxfield, 2001; Caspi et al, 2002; McWey et al, 2013), most studies focus on investigating the behavioral effects of one type of maltreatment, and as a result, less nuanced information is known about the outcomes of different types of childhood maltreatment (Currie & Tekin, 2012). Additionally, many studies fail to control for potential confounding variables that could cause both childhood maltreatment and childhood violence, such as lack of financial resources, parental incarceration, the level of a child's self-control, and parental problems like mental health issues and substance abuse (Currie & Tekin, 2012; NRC, 1993). In an attempt to isolate the effect of childhood maltreatment on the propensity to commit violence, the current study controlled for the aforementioned variables in addition to other factors that have been empirically shown to be associated with violence. While short of an experimental design, one cannot conclusively say that child maltreatment causes violence. However, the results from the first analysis demonstrate that childhood maltreatment continues to substantively and significantly predict the likelihood of violence ($b=.269$ $p = .000$) when controlling for nine

potentially confounding variables (i.e., age, SES, gender, race, antisocial beliefs, peer relationships, self-control, parental incarceration history and history of parental problems). Thus, one can say that child maltreatment does indeed exert a significant influence on the propensity to engage in violence. Despite the number of research studies that identified childhood maltreatment as a predictor for aggression and violence (Stouthamer-Loeber et al, 2001; Dodge, Bates & Pettit, 2007; Milaniak & Widom, 2015), the evidence regarding the intergenerational transmission of violence is still mixed, with some scholars theorizing that the case for the cycle of violence may be exaggerated (Thornberry et al, 2012). Therefore, the results from this first analysis strengthen the argument that maltreatment in childhood does indeed lead to the transmission of violence (intergenerational and intragenerational), albeit for a certain proportion of maltreated youth. Worth noting is that this first binary logistic regression analysis revealed that in comparison to the other factors in the models predicting violence, child maltreatment has one of the larger effects sizes. Therefore, maltreatment appears to be more influential than other factors such as having an incarcerated parent or living in poverty on the likelihood of youth in the prediction of propensity to commit violence.

While the findings regarding the association between the control variables and the likelihood to commit violence does not have a direct bearing on the link between maltreatment and violence, they are worth discussing as collectively, maltreatment and the control factors that do influence violence, can be viewed as a risk model from which to identify children that are the most susceptible to becoming violent offenders. Findings indicate that while having any type of friends (antisocial or prosocial) is associated with a non-statistically significant reduced risk of perpetrating violence, having no friends was associated with a significant positive increase in the likelihood to commit violence. Given the extensive prior literature demonstrating a positive

relationship between antisocial friends and likelihood to commit delinquency in general (Thornberry et al, 1994; Viaro, Brendgen & Tremblay, 2000; Haynie, 2002; Monahan & Steinberg, 2009), this particular finding is illustrative of the uniqueness of violent behavior compared to other types of delinquency. While antisocial friends may be linked to an increased propensity to commit non-violent delinquency, it is the youth without any friends that are at the greatest risk for committing violence. Also supporting the notion that violent behavior is conceptually different from other types of delinquency, is the finding that a parental history of incarceration did not have a significant effect on the chances of youth engaging in violent behavior. Similarly, a history of parental mental and/or physical health problems was associated with a significant decrease with a likelihood to commit violence. One potential and partial explanation for this finding is that having parents with extensive mental and physical health problems may instigate a reversal in parent-child relationships, where select children (e.g., oldest child in the family) become more adept at assuming the traditional parental role in order to help run the family. As a result, these children may internalize their stress and instead engage in drug use or chronic truancy (Sieh, Visser-Meily & Meijer, 2016) as opposed to aggressive behavior. Findings indicate that youth living in poverty are more likely to commit violent offenses than youth not living in poverty. While the relationship between violence and poverty is well documented (Gelles, 1992; Greene, 1993; Lee, 1996), empirical evidence is mixed regarding the mechanisms responsible for this link. Family disruption is one of the factors that researchers theorize may mediate the association between poverty and violence (Sampson, 1987; Messner & Sampson, 1991). Results indicate that black youth are over represented in the study sample (47%) compared to the estimate of 17% of African-American/Black youth in the state of Florida (census.gov). Important to note is that there is prior research demonstrating that the

overrepresentation of black youth in the justice system is not necessarily due to black children committing more crime, but due to disproportionate contact with the juvenile justice system and harsher criminal sentencing (Thornberry, 1973 Bishiop & Frazier, 1988; Steffensmeier, Ulmer & Kramer, 1998; Ericson & Eckberg, 2016). Hence the significant effect found between being black and an increased likelihood of committing violent crime may be reflective of black youth being at an increased risk for getting arrested for a violent crime, not necessarily more likely to commit a violent crime. Contrary to previous research (Bennett, Farrington & Huessman, 2005; Lansford et al, 2012), results from the first analysis reveal a pattern that presents throughout the other analyses as well: female youth are significantly more likely to commit violence than males. One potential reason for this finding is that juvenile violent males may be perceived as a greater threat, while violent females may be viewed by the justice system as in need of mental health help (Nagel, Ilene & Johnson, 1994; Koons-Witt, 2006). Hence, males may be more likely to be sent to *residential* programs for violent offenses than females. As a result, more female violent offenders may be ordered to community supervision than residential placement. This reasoning is in line with previous studies demonstrating that on average, males are given harsher sentences than females for similar crimes, in part due to gender stereotypes (Dale & Tonry, 1997; Rodrigues, Curry & Lee, 2006).

In light of the first model results, future research analyses to examine the possible interaction effects of a lack of friendship on the relationship between maltreatment and likelihood to commit violence will be pursued to understand how these risk variables operate together in predicting violence among juveniles

Relationship Between Different Maltreatment Types and Likelihood to Commit Violence

The second research questions explored the impact of different types of maltreatment on the likelihood to commit violence to gain insight into how different trauma experiences are linked to aggression and violence among juveniles. Findings from the analyses to answer research question 2 suggest that the likelihood of youth committing violent behavior is dependent on the type of maltreatment. These findings support prior theoretical research suggesting that the maltreatment type may determine the likelihood of violence given that that mental and emotional consequences of certain *types* of maltreatment, such as neurological changes, mood disorders and cognitive impairment, can lead to aggressive and/or violent behavior (O’Keefe, 1998; White & Widom, 2003; Millett, et al, 2013). Hence, not all maltreatment experiences will be equally likely to increase the likelihood of violence. Contrary to select previous research studies (Vachon et al, 2015), but similar to other findings (Widom & Maxfield, 2001; Mersky & Reynolds, 2007), childhood neglect was not associated with a statistically significant greater likelihood of committing violence. One potential reason for this lack of significant relationship is that the type of neglect was unknown. Hence, it is possible that children who experience a certain type of neglect, such as physical neglect, may indeed be at a greater risk of perpetrating violence in part due to the physiological changes that can result from such abuse (Hildyard & Wolfe, 2002). Additionally, if that type of neglect is uncommon in the current study’s sample, then this could potentially explain the lack of significant findings. Important to note is that given the study’s focus on the outcome of childhood perpetration of violence, the likelihood of this sample of neglected youth committing violence in adulthood is unknown, although violent behavior in childhood is empirically shown to predict violence in adulthood (Farrington, 1989). However, it is quite possible that although neglect is not

significantly associated with violence commission in childhood with the study sample, there may be a link between neglect and likelihood to engage in violence during adulthood. One other explanation worth considering is that certain forms of neglect may not be perceived by children to be as much of a betrayal as overt acts of physical and sexual abuse. While neglectful behavior from parents to child is harmful (some types of neglect more than others), neglected children on average may perceive their treatment (or lack of) as a result of their circumstances as opposed to the product of genuine family discord or mistreatment from their parental figures. If a high level of anger is a mediating mechanism between certain forms of maltreatment and violence, as indicated by empirical research (Kimonis et al, 2011), children who experience neglect as opposed to other maltreatment types may be less likely to possess high levels of anger.

While sexual abuse, physical abuse, and multiple types of maltreatment all predicted a statistically significant increase in the odds of committing violence, the actual effect size varied among these maltreatment types. The strongest effect was seen for victims of childhood sexual abuse ($p = 0.428$), followed by multiple type maltreatment, and then physical abuse. This particular finding is unique compared to select previous empirical research in that for this particular sample, sexual abuse had a greater effect on the likelihood to commit violence compared to physical abuse. This may be due to the fact that sexually abused children in the sample are more likely to experience additional forms of maltreatment, and thus essentially experience a greater variety of trauma symptoms, including aggression. However, if multiple type maltreatment in general is a stronger predictor of violence than sexual abuse, then one would expect the coefficients from the logistic regression analysis of the effects of multiple type maltreatment on likelihood to commit violence to be the largest effect size among all the types of maltreatment, which was not the case. Perhaps, children who have experienced multiple type

maltreatment that includes sexual abuse, are at the greatest risk of perpetration of violence. Thus, sexual abuse in itself may not be the reason behind the increased propensity of children to engaging in violence, but the presence of multiple trauma experiences that *include sexual abuse*, may be the driving force behind the increased likelihood of violence perpetration. This line of reasoning is partially supported by the current study findings showing that a majority of sexually abused youth also experienced physical abuse while the reverse was not true, and by theoretical support from trauma theory suggesting that a variety of traumatic experiences increase the likelihood of a greater range of symptoms, thus making the link between maltreatment and violence more likely. In summary, while all types of maltreatment can have traumatic effects on child behavior, the type of traumatic effect may also vary by the type of maltreatment.

These issues regarding the importance of maltreatment typology and coexistence of multiple maltreatment types should be addressed in future research by analyses that tease out the specific effects of each type of abuse (i.e., without the influence of other types of maltreatment) on violent behavior. Given the previous empirical findings ((Briere & Runtz, 1990; Widom & Maxfield, 2001) and social learning theory stipulations regarding the learning of violent behavior (Bandura, 1978; Dodge, Bates & Pettit, 1990; Wareham, Boots & Chavez, 2009), one would expect physically abused children to be the most likely to engage in violent behavior. However, many of these studies did not address the presence of additional types of victimization in their sample sizes. Thus, while physical abuse may indeed be a statistically significant predictor for violence, additional types of victimization like sexual abuse may also be linked to violence due to the high levels of comorbidity between sexual abuse and physical abuse, as demonstrated by the current study. Follow up analyses will examine the influence of each type of maltreatment on

the likelihood of violence by including all types of maltreatment in a logistic regression model to examine the influence of each type of maltreatment on violence when controlling for other types.

The Relationships Among Family Belonging, Child Maltreatment and the Propensity to Commit Violence

The third research question asked if youth without family belonging are more likely to engaging in violence than youth with family belonging. Findings from the analyses used to answer this question revealed that child maltreatment of any type decreases the likelihood of family belonging, highlighting the negative influence of traumatic home environments on a child's ability to form meaningful close relationships to immediate family members. While this particular finding was expected, given the previous theoretical research identifying factors that influence levels of family attachment and belonging (Belsky, 1980; King & Boyd, 2016), the percentage of maltreated youth who possess a sense of family belonging was unexpected. More than half of maltreated children reported being close to at least one parent/caretaker and/or sibling, and almost half of maltreated children reported being close to a mother/female caretaker or father/male caretaker. Hence, if family belonging is indeed a protective factor for maltreated youth, forging such family attachments may be possible for certain child victims of family violence given the number of maltreated children who possess some sense of family belonging.

While the current study did not examine the factors that may distinguish maltreated youth who feel family belonging and attachment, this is an important avenue for future research studies to pursue. A variety of variables may explain why certain maltreated youth report more family belonging than other maltreated youth. Developmental and attachment theories lend some insight into what these discerning factors may be. Given that bonding experiences lead to healthy

attachments when they are provided early in life, youth who are maltreated early on in childhood may be less likely to have positive family relationships than youth who experience maltreatment at later developmental stages (Manley et al, 2001; Kotch et al, 2008). Additionally, children who experience abuse from their parents as opposed to abuse from siblings or extended family members may experience more symptoms of trauma and as a result, face a greater struggle in developing and maintaining close social relationships with family members. While the influence of the type of maltreatment on family belonging was not examined in the current work, future analyses will explore this avenue of study. However, it is possible that regardless of the maltreatment type, children who experience the most severe and frequent maltreatment may have a lower ability to forge family bonds. Therefore, data collection efforts on maltreatment should attempt to include measures of frequency and severity for all the maltreatment types along with details of the nature of the relationship between youth and perpetrators of maltreatment. These types of details may prove useful when examining the why certain maltreated children are able to maintain close family bonds.

Previous studies have documented the importance of positive family functioning, such as family cohesion and appropriate parenting techniques, for healthy behavioral outcomes in youth (Gorman-Smith et al, 1996; Henneberger et al, 2016), while additional studies from the need to belong theoretical framework have demonstrated how a lack of belonging can increase the propensity for aggressive behavior (Baumeister & Leary, 2017). Given the empirical support for the importance of both family dynamics and belonging on predicting violence, it is logical to hypothesize that the need to belong may be especially important within the family unit, hence a lack of family belonging may be predictive of a variety of ill effects including anger and violence. Based on these theoretical underpinnings, research question four explored whether the

presence of family belonging decreases the likelihood of violent behavior. The findings support the hypothesis that youth without family belonging are more likely to commit violence than youth with family belonging, thus demonstrating the importance of family intimacy for decreasing the likelihood of negative outcomes in youth such as violent behavior. Results demonstrated a significant negative relationship between family belonging and the likelihood to commit violence even after controlling for any type of child maltreatment, thus highlighting the fundamental importance of feeling like one belongs to their family.

Research on the importance of family relationships for youth traditionally view family belonging as a construct comprised of several family functioning variables, specifically, family solidarity, family closeness and family support (Riggs, Augoustinos & Delfabbro, 2009). While all three concepts may promote a sense of belonging, the current study demonstrates that certain components of family belonging may be more influential in predicting violent behavior. The original scale for family belonging consisted of two items individually measuring whether family provides social support, and whether youth feels close to an immediate family member. However, the Cronbach alpha valued revealed that for the study sample, these items are not as closely related to each other as was initially expected. Supporting the lack of consistency among these measures, is that out of the two items, family closeness was the only item statistically significantly related to the likelihood to commit violence. While a lack of familial social support may increase the likelihood for maladaptive behaviors in youth, in the current study, there was no significant relationship between family support and violent behavior. This finding (albeit a lack of finding regarding family social support), signifies the conceptual differences between what it means to feel close to your family and what it means to be supported. As an illustration, a mother who provides food and health insurance for his daughter access to medical needs, and

even pays for schooling would be considered a “supportive parent”. However, providing this type of support does not guarantee a close and warm relationship with her daughter, although one would assume that on average closeness and support are positively related. In the opposite scenario it is plausible that a child may have a close bond with his or her parent while not receiving a proper amount of support due to financial hardships or parental health problems. The importance of close and warm relationships for decreasing the chances of youth engaging in violence is also illustrated by the results suggesting that youth with no friends at all are the greatest risk for violent behavior.

The Effect of Family Belonging on the Relationship Between Different Types of Maltreatment and The Likelihood to Commit Violence

Given the research results indicating that 1. child maltreatment negatively influences family belonging, 2. that family belonging is negatively related to violence commission and 3. that the type of maltreatment does matter in predicting the likelihood of violence, the fifth research question sought to identify which types of maltreated children would benefit the most from family belonging in protecting them from engaging in violence. It was hypothesized that family belonging would moderate the relationship between each type of maltreatment and the likelihood to commit violence, such that children who experienced any type of maltreatment but had family belonging would be less likely to engage in violence compared to maltreated children who unfortunately did not have a sense of family belonging. The results revealed that while a presence of family belonging independently decreases the likelihood of violence, it does not moderate the relationship between sexual abuse and violence, physical abuse and violence, neglect and violence or multiple type maltreatment and violence.

While there are several possible theoretical explanations as to why the interaction effects were not statistically significant for either of the maltreatment types, one particular explanation stands out given the previous empirical evidence on the importance of perceptions of maltreatment experiences in predicting outcome behaviors (Briere, 2002; Leutar et al, 2014). Given that anger and hostile attribution biases are two identified precursors for violent behavior in general (Monahan, 1977; Dodge et al, 1990; Scarpa & Raine, 1997; Nesbit, 2012) it is possible that maltreated children hold more anger towards their family members (perpetrators for the victimization and non-perpetrators that are in a position to stop the maltreatment but fail to do so), and are thus less available to the positive experiences of family belonging. It may be that even though many maltreated children express being especially close to at least one immediate family member, they may have a very negative relationship with other members of their family, such as a parent who has not protected them from the perpetrator. As a result, feeling close to one immediate member of the family may not be sufficient to break the cycle of violence. Maltreated youth may naturally attribute their victimization to a lack of genuine care or hostility on the perpetrator's part, thus increasing the chances of feelings of anger solidifying over time, ultimately increasing their likelihood of engaging in aggressive and violent behavior. Hence, simply being close to one family member may not be sufficient to decrease the level of anger and hostility maltreated children may feel as a result of being victimized from those they trust the most (e.g., parent, caretaker, or sibling). Additionally, being close to at least one family member may not be the appropriate way to operationalize family belonging. Instead, family belonging may operate as a protective factor, whereby having a high amount of belonging (i.e., measured by the number of family members youth feels close to) does indeed reduce the likelihood that childhood maltreatment will increase the odds of violent behavior among youth. Future research

initiatives, therefore, include creating a continuous family closeness/belonging measure in order to keep as much information about the variable as possible in order to detect any non-linear effects of belonging on the relationship between maltreatment and violence propensity.

Moreover, while immediate family belonging may not decrease the likelihood maltreated children engaging in violence, it is possible that non-immediate family attachments such as close friendships and close relationships to extended family will buffer the effects of maltreatment on violence.

Limitations of the Current Study

In light of the results there are key limitations to the current study that need to be documented to assist future studies in the area of cycle of violence research. Although researchers have a clearer understanding of the etiology of child maltreatment, there are still numerous methodological issues in assessment of maltreatment overlap (Kim & Cicchetti, 2004). The current study, while distinguishing between the effects of different types of maltreatment on commission of violence, did not address the specific effects of the different patterns of overlap among the maltreatment types due to the extensive analyses already being conducted. For example, youth who experience a combination of physical and sexual abuse may be clinically different from youth who experience physical abuse and neglect. The primary methodological challenges in determining the effects of such overlap include differences in how maltreatment data is collected and in how child maltreatment in general is operationalized and measured (Barnett, Miller & Perrin & Perrin, 2005; Fallon et al, 2010). Additionally, the exposure to domestic violence, which is considered to be type of child maltreatment, was not examined as a potential predictor of the likelihood to commit violence due to limitations in the dataset. This is an important issue to address in future research given the high degree of overlap between

exposure to domestic violence and childhood abuse (Higgins, 2001). Therefore, follow up research efforts will focus on addressing the issue of overlap when examining the influence of the different types of maltreatment on the propensity to engage in violence.

Other methodological limitations include the lack of available measures in the CPACT dataset of the various types of neglect. Given the varying etiology between physical neglect and emotional neglect, it is important for future research to explore their potential differential impact on violent behavior. Likewise, the CPACT does not contain data regarding the severity, frequency, and duration of the different types of maltreatment, nor does it contain data on the identification of the relationship between youth and perpetrator of maltreatment, which are limitations when attempting to isolate the effects of different types of maltreatment on maladaptive youth behavior. For example, physical abuse may have the greatest effect on youth's propensity to commit violence because such abuse may occur more frequently than other types. However, without actual data regarding these types of details, there is not a concrete way to explore these hypotheses.

In addition to the absence of more detailed variables regarding maltreatment incidents in the dataset, the current study used a single item scale to measure the construct of family belonging. Although the item of family closeness is shown to be a strong indicator of family belonging in previous research, the complexity of the family belonging construct would be more effectively represented by additional variables that capture the warmth and attachment levels between youth and each family member. Also, while a validated family belonging scale is ideal, there is not a currently validated family belonging scale available. Construction of a validated family belonging scale would be beneficial to future studies examining the influence of family bonds on various maladaptive childhood outcomes.

Despite the phrasing of the questions in the CPACT that allow for some establishment of time-order for the key variables being analyzed, the current study still utilizes a cross sectional research design. Hence, it is difficult to determine whether violent behavior is truly a result of child maltreatment. Although the measure of violent behavior is the current offense that precipitated youth being court ordered to community supervision, it is quite possible that some youth have a history of aggressive behavior that never resulted in a juvenile justice intervention. Additionally, although the data is cross-verified among several legitimate sources, there is still an element of youth-self report, hence limitations typical of self-report data such as recall and attribution biases may be present. However, important to note is that with regards to retrospective reporting, it has been argued that this type of reporting may actually may be more valid for victims of *sexual abuse* due to the nature of the subject and the inclination of victims to keep their experiences secret (Hines & Malley-Morrison, 2005; Herrenkohl & Herrenkohl, 2007).

While the current study's goal was to examine the relationships among maltreatment, family belonging and violent behavior in an at-risk sample of youth, one must use caution when generalizing these results to other samples, albeit other at-risk juvenile samples. Clinical samples of youth, such as juveniles under court supervision, are characteristically different from representative samples in terms of key factors that are predictive of violent behavior such as a greater prevalence of antisocial attitudes, poverty, and familial and social strains. Hence, these findings may not translate to youth that are not under community court supervision.

With regards to theoretical limitations, it is crucial to note that although this dissertation utilizes concepts from trauma theory, family systems theory and need to belong theory to develop a framework through which the cycle of violence can be understood, the research

analyses conducted in this study are not *specific* tests of trauma theory or family system theory. As mentioned earlier, while the results are signifying of select general hypotheses from these theories, these results also support stipulations from other theories such as attachment theory and social learning theory.

Future Research Directions and Recommendations for Policy and Programming

While youth who engage in violence may also be just as likely to engaging in non-violent offenses such as selling drugs and shoplifting, the current study indicates that violent offenders are distinct from non-violent offenders in a variety of ways, including being more likely to have experienced maltreatment and less likely to have family belonging. Hence, previously identified predictors of general delinquency, should be examined as predictor variables on *violent behavior specifically*. These types of analyses may be beneficial given that violent behavior is characteristically different from other types of delinquency as evidenced from findings from the current study. Specifically, the findings revealed that having antisocial friends is not a significant predictor of violence, and that a history of parental incarceration is not significantly linked with violent behavior, despite both of these factors being empirically linked to delinquent behavior in general (Vitaro, Brendgen & Tremblay, 2000; Murray & Farrington, 2005; Aaron & Dallaire, 2010)

Considering the collective findings based on the analyses used to answer the research questions, the following research recommendations may help to ultimately identify the variety of developmental patterns of violent behavior in different types of maltreated children. First, it is important to conduct prospective studies that utilize data collection at multiple time points throughout childhood and adulthood to increase the validity of the relationships being examined and to understand how childhood maltreatment influences behavior over the life-course.

Additionally, it is important for data collection to ensure that different types of neglect are measured so future researchers can assess the effect of each type of neglect on aggressive behavior. Second, it is crucial to test additional factors that may mediate or moderate the relationship between the different maltreatment types and violence, such as anger and hostility, cognitive impairment, and personal narratives. Identifying dynamic variables through moderation and mediation analyses offer additional points of intervention for at-risk maltreated youth. Also, testing the association between traditional internalizing symptoms of trauma such as PTSD or self-harming behavior with violence in maltreated children may help researchers understand how and why trauma manifests as aggression in certain types of victimized youth.

Third, future research should examine not only the effect of different types of maltreatment experiences on family belonging, but also additional individual and familial factors that distinguish the maltreated children who feel close to their family from maltreated children who do not have this sense of family belonging. If additional dynamic variables that moderate the relationship between maltreatment and family belonging are identified, then perhaps existing treatment programs for at-risk maltreated youth can incorporate these variables into their protocols for therapy. Fourth, considering the lack of consistency between the family social support and family closeness measures, future research efforts towards conducting a factor analysis of a family belonging scale may prove to be helpful in assessing which components of family belonging matter the most for decreasing the chances of youth engaging in violence. Also, in line with family systems theory, it would be extremely helpful to not only have information regarding the relationship quality between youth and each family member, but details on how one relationship dynamic influences the other with regards to the impact of maltreatment on family dynamics. Additionally, research examining the mediating pathways between a lack of

family belonging/closeness and commission of violence may help identify individual modifiable factors that can be addressed in treatment for at-risk youth. Recent studies identifying the influential role of hostile attribution bias on the commission of violent behavior in response to social rejection (Anderson & Bushman, 2002; DeWall et al, 2009) may lend insight into what differentiates the maltreated children who are at a risk for engaging in violence and why a lack of family belonging can ultimately lead to aggressive and violent behavior, regardless of the prevalence of maltreatment. Therefore, future research efforts should include examining the relationships among the different childhood maltreatment types, hostile cognitive processes, and aggressive and violent behavior.

While additional questions need to be answered regarding the mechanisms behind the association between the different types of maltreatment, family belonging and likelihood to commit violence before specific recommendations on programing and policy can be provided, general suggestions can be made to advocates and practitioners working with maltreated children and non-maltreated children that may be at risk for engaging in violence. Given the findings of the importance of a strong sense of family belonging in the protection of children from negative effects of aversive life experiences such as neglect, this research may hopefully assist in guiding treatment program strategies for maltreated children by advocating for such programs to be more individualized to the specific type of abuse or neglect a child has experienced. However, it is important to not label children simply by the type of maltreatment they experienced; instead practitioners and advocates should be mindful of the entirety of the maltreatment experience and the youth's individual strengths and weaknesses when coping with the aftermath of victimization. The theoretical literature on the traumatic effects of childhood victimization document that the type of maltreatment a child experiences can influence the nature of the trauma symptoms they endure. Hence, when aggression and violence manifests during childhood, practitioners and other officials in charge with the wellbeing of children should not be

so quick to dismiss such as children as simply “bad apples” or “delinquent youth”. While symptoms indicative of trauma in addition to aggression may be present, such as depression, isolation and poor school performance, violent behavior may be the first documented symptom by officials due its disruptive and harmful nature towards others. Additionally, treatment programs may benefit from acknowledging that despite the destructive consequences of homes characterized by abuse and violence, it is still possible for children to develop close bonds with additional family members, thus creating a sense of family belonging. If youth are unable to forge close family relationships, then creating avenues through which youth can develop close bonds with other children and positive adult role models may help improve their emotional and mental health outcomes in light of maltreatment experiences. Given that the current findings of this research study demonstrate the protective nature of such bonds for children at risk of engaging in violence, regardless of being maltreated or not, treatment programs that contain strategies for helping kids utilize these bonds to help increase resiliency within themselves, may prove to be effective in reducing the likelihood of violent behavior among these youth and ultimately breaking the cycles of violence and trauma.

APPENDIX A

IRB APPLICATIONS AND APPROVALS

1. Project Title and Identification

1.1 Project Title

Investigating Procedural Justice Impacts within a Department of Juvenile Justice System

Project is: Supervised Research

1.2 Principal Investigator (PI)

Name (Last name, First name MI): Holmes, Jennifer Lynne	Highest Earned Degree: Master's Degree
Mailing Address: College of Criminology and Criminal Justice, Hecht House, 634 W. Call Street, Tallahassee, FL 32306-1127	Phone Number: [REDACTED]
	Fax: [REDACTED]
University Department: CRIMINOLOGY AND CRIMINAL JUSTICE	Email: [REDACTED]
The training and education completed in the protection of human subjects or human subjects records: NIH	Occupational Position: Student

1.3 Co-Investigators/Research Staff

Name (Last name, First name MI): Ladny, Roshni Trehan; Co-Investigator	Highest Earned Degree: Master's Degree
Mailing Address: College of Criminology and Criminal Justice, 634 W. Call Street, Tallahassee, FL 32306-1127, United States	Phone Number: [REDACTED]
	Fax: [REDACTED]
University Department: CRIMINOLOGY AND CRIMINAL JUSTICE	Email: [REDACTED]
The training and education completed in the protection of human subjects or human subjects records: Other	Occupational Position: Student

1.4 Faculty Advisor/Department Chair/Dean Information

Name (Last name, First name MI): Fagan, Abigail ; Advisor	Highest Earned Degree:
Mailing Address: College of Criminology and Criminal Justice, Hecht House, 634 W. Call Street, Tallahassee, FL 32306-1127	Phone Number: [REDACTED]
	Fax: [REDACTED]
University Department: CRIMINOLOGY AND CRIMINAL JUSTICE	Email: [REDACTED]
The training and education completed in the protection of human subjects or human subjects records:	Occupational Position:

2. Funding

2.1 Is this research funded by an internal (FSU) or external agency?

No

Request for Renewal Form

[Logout](#)Original Application Information [View application](#)

Project Title	Investigating Procedural Justice Impacts within a Department of Juvenile Justice System
Protocol Number	2017.20258
Review Type	Full Committee
Principal Investigator	Roshni Ladny
Approval Date	02/08/2017
Expiration Date	02/07/2018

Renewal Status

Note: The following questions pertain to the last approval period of the research project.

1. Was the study active in the last approval period?

Yes

2. ☐ No human subject research activities have occurred to date. For example: the research project has been placed on hold, no research activities have begun.
3. ☐ Subject recruitment and/or interventions occurred in the last approved period.
4. ☐ Following subjects. Enrollment was closed to new subjects in last approval period.
5. ☐ Data analysis of existing data and was approved as a existing data study. i.e. no subject involvement.
6. ☒ Open for data analysis only. No interaction with subject took place in the last approval period.
Expected end date: 5/18/2019
7. ☐ Completed (including all data analysis). Please upload copies of any pertinent publications that resulted.

Personnel Information

Have there been any changes in personnel (i.e. Principal Investigator, Co-Investigator and/or Research Staff)?

Yes

If yes, list role on project Name, Department, and Email Address

Roshni T. Ladny is now Principal Investigator. Jennifer Holmes is now Co-investigator.
College of Criminology and Criminal Justice. [REDACTED] Major Professor Dr.
William Bales: [REDACTED]

The Florida State University
Office of the Vice President For Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673, FAX (850) 644-4392

APPROVAL MEMORANDUM

Date: 6/20/2013

To: Jennifer Holmes 

Address: College of Criminology and Criminal Justice, Hecht House, 634 W. Call Street,
Tallahassee, FL 32306-1127
Dept.: CRIMINOLOGY AND CRIMINAL JUSTICE

From: Thomas L. Jacobson, Chair

Re: Use of Human Subjects in Research
Investigating Procedural Justice Impacts within a Department of Juvenile Justice System

The application that you submitted to this office in regard to the use of human subjects in the research proposal referenced above has been reviewed by the Human Subjects Committee at its meeting on 04/10/2013. Your project was approved by the Committee.

The Human Subjects Committee has not evaluated your proposal for scientific merit, except to weigh the risk to the human participants and the aspects of the proposal related to potential risk and benefit. This approval does not replace any departmental or other approvals, which may be required.

If you submitted a proposed consent form with your application, the approved stamped consent form is attached to this approval notice. Only the stamped version of the consent form may be used in recruiting research subjects.

If the project has not been completed by 4/9/2014 you must request a renewal of approval for continuation of the project. As a courtesy, a renewal notice will be sent to you prior to your expiration date; however, it is your responsibility as the Principal Investigator to timely request renewal of your approval from the Committee.

You are advised that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report, in writing any unanticipated problems or adverse events involving risks to research subjects or others.

The Florida State University
Office of the Vice President For Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673, FAX (850) 644-4392

RE-APPROVAL MEMORANDUM

Date: 4/11/2014

To: Jennifer Holmes [REDACTED]

Address: College of Criminology and Criminal Justice, Eppes Hall, 145 Convocation Way,
Tallahassee, FL 32306-1271
Dept.: CRIMINOLOGY AND CRIMINAL JUSTICE

From: Thomas L. Jacobson, Chair

Re: Re-approval of Use of Human subjects in Research
Investigating Procedural Justice Impacts within a Department of Juvenile Justice System

Your request to continue the research project listed above involving human subjects has been approved by the Human Subjects Committee. If your project has not been completed by 4/8/2015, you must request renewed approval by the Committee.

If you submitted a proposed consent form with your renewal request, the approved stamped consent form is attached to this re-approval notice. Only the stamped version of the consent form may be used in recruiting of research subjects. You are reminded that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report in writing, any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the Chair of your department and/or your major professor are reminded of their responsibility for being informed concerning research projects involving human subjects in their department. They are advised to review the protocols as often as necessary to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

Cc: Abigail Fagan, Advisor [REDACTED]
HSC No. 2014.12372

By copy of this memorandum, the Chair of your department and/or your major professor is reminded that he/she is responsible for being informed concerning research projects involving human subjects in the department, and should review protocols as often as needed to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

This institution has an Assurance on file with the Office for Human Research Protection. The Assurance Number is FWA00000168/IRB number IRB00000446.

Cc: Abigail Fagan, Advisor
HSC No. 2013.10329

The Florida State University
Office of the Vice President For Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673, FAX (850) 644-4392

RE-APPROVAL MEMORANDUM

Date: 4/9/2015

To: Jennifer Holmes-[REDACTED]

Address: College of Criminology and Criminal Justice, Eppes Hall, 145 Convocation Way,
Tallahassee, FL 32306-1271
Dept.: CRIMINOLOGY AND CRIMINAL JUSTICE

From: Thomas L. Jacobson, Chair

Re: Re-approval of Use of Human subjects in Research
Investigating Procedural Justice Impacts within a Department of Juvenile Justice System

Your request to continue the research project listed above involving human subjects has been approved by the Human Subjects Committee. If your project has not been completed by 4/6/2016, you must request renewed approval by the Committee.

If you submitted a proposed consent form with your renewal request, the approved stamped consent form is attached to this re-approval notice. Only the stamped version of the consent form may be used in recruiting of research subjects. You are reminded that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report in writing, any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the Chair of your department and/or your major professor are reminded of their responsibility for being informed concerning research projects involving human subjects in their department. They are advised to review the protocols as often as necessary to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

Cc: []
HSC No. 2015.15085

The Florida State University
Office of the Vice President For Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673, FAX (850) 644-4392

RE-APPROVAL MEMORANDUM

Date: 3/10/2016

To: Jennifer Holmes [REDACTED]

Address: College of Criminology and Criminal Justice, Eppes Hall, 145 Convocation Way,
Tallahassee, FL 32306-1271
Dept.: CRIMINOLOGY AND CRIMINAL JUSTICE

From: Thomas L. Jacobson, Chair

Re: Re-approval of Use of Human subjects in Research
Investigating Procedural Justice Impacts within a Department of Juvenile Justice System

Your request to continue the research project listed above involving human subjects has been approved by the Human Subjects Committee. If your project has not been completed by 3/8/2017, you must request renewed approval by the Committee.

If you submitted a proposed consent form with your renewal request, the approved stamped consent form is attached to this re-approval notice. Only the stamped version of the consent form may be used in recruiting of research subjects. You are reminded that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report in writing, any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the Chair of your department and/or your major professor are reminded of their responsibility for being informed concerning research projects involving human subjects in their department. They are advised to review the protocols as often as necessary to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

Cc: []
HSC No. 2016.17672

The Florida State University
Office of the Vice President For Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673, FAX (850) 644-4392

RE-APPROVAL MEMORANDUM

Date: 3/9/2017

To: Jennifer Holmes [REDACTED]

Address: College of Criminology and Criminal Justice, Eppes Hall, 145 Convocation Way,
Tallahassee, FL 32306-1271
Dept.: CRIMINOLOGY AND CRIMINAL JUSTICE

From: Thomas L. Jacobson, Chair

Re: Re-approval of Use of Human subjects in Research
Investigating Procedural Justice Impacts within a Department of Juvenile Justice System

Your request to continue the research project listed above involving human subjects has been approved by the Human Subjects Committee. If your project has not been completed by 2/7/2018, you must request renewed approval by the Committee.

If you submitted a proposed consent form with your renewal request, the approved stamped consent form is attached to this re-approval notice. Only the stamped version of the consent form may be used in recruiting of research subjects. You are reminded that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report in writing, any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the Chair of your department and/or your major professor are reminded of their responsibility for being informed concerning research projects involving human subjects in their department. They are advised to review the protocols as often as necessary to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

Cc: []
HSC No. 2017.20258

The Florida State University
Office of the Vice President For Research
Human Subjects Committee
Tallahassee, Florida 32306-2742
(850) 644-8673, FAX (850) 644-4392

RE-APPROVAL MEMORANDUM

Date: 2/16/2018

To: Roshni Ladny [REDACTED]

Address: College of Criminology and Criminal Justice, Eppes Hall, 145 Convocation Way,
Tallahassee, FL 32306-1271
Dept.: CRIMINOLOGY AND CRIMINAL JUSTICE

From: Thomas L. Jacobson, Chair

Re: Re-approval of Use of Human subjects in Research
Investigating Procedural Justice Impacts within a Department of Juvenile Justice System

Your request to continue the research project listed above involving human subjects has been approved by the Human Subjects Committee. If your project has not been completed by 2/13/2019, you must request renewed approval by the Committee.

If you submitted a proposed consent form with your renewal request, the approved stamped consent form is attached to this re-approval notice. Only the stamped version of the consent form may be used in recruiting of research subjects. You are reminded that any change in protocol for this project must be reviewed and approved by the Committee prior to implementation of the proposed change in the protocol. A protocol change/amendment form is required to be submitted for approval by the Committee. In addition, federal regulations require that the Principal Investigator promptly report in writing, any unanticipated problems or adverse events involving risks to research subjects or others.

By copy of this memorandum, the Chair of your department and/or your major professor are reminded of their responsibility for being informed concerning research projects involving human subjects in their department. They are advised to review the protocols as often as necessary to insure that the project is being conducted in compliance with our institution and with DHHS regulations.

Cc: []
HSC No. 2018.22927

REFERENCES

- Abbassi, A., & Aslinia, S. D. (2010). Family violence, trauma and social learning theory. *Journal of Professional Counseling, Practice, Theory, & Research*, 38(1), 16.
- Ackil, J. K., Van Abbema, D. L., & Bauer, P. J. (2003). After the storm: Enduring differences in mother–child recollections of traumatic and nontraumatic events. *Journal of Experimental Child Psychology*, 84(4), 286-309.
- Afifi, T. O., Mota, N., Sareen, J., & MacMillan, H. L. (2017). The relationships between harsh physical punishment and child maltreatment in childhood and intimate partner violence in adulthood. *BMC public health*, 17(1), 493.
- Alexander, P. (2015). *Intergenerational Cycles of Trauma and Violence: An Attachment and Family Systems Perspective*. New York, NY: W. W Norton & Company.
- Allison, P. (1999). *Multiple Regression: A Primer*. Thousand Oaks, CA: Pine Forge Press.
- Anderson, C. A., & Bushman, B. J. (2002). Human aggression. *Annual review of psychology*, 53.
- Andrews, D. A., Bonta, J., & Wormith, J. S. (2006). The recent past and near future of risk and/or need assessment. *Crime & Delinquency*, 52(1), 7-27.
- Asscher, J. J., Van der Put, C. E., & Stams, G. J. J. (2015). Gender differences in the impact of abuse and neglect victimization on adolescent offending behavior. *Journal of family violence*, 30(2), 215-225.
- Baglivio, M. T. (2009). The assessment of risk to recidivate among a juvenile offending population. *Journal of Criminal Justice*, 37(6), 596-607.
- Baglivio, M. T., & Jackowski, K. (2013). Examining the validity of a juvenile offending risk assessment instrument across gender and race/ethnicity. *Youth Violence and Juvenile Justice*, 11(1), 26-43.
- Barnett, O., Miller-Perrin, C. L., & Perrin, R. D. (2005). *Family violence across the lifespan: An introduction*. Sage Publications, Inc.
- Baldry, A. C. (2003). Bullying in schools and exposure to domestic violence. *Child abuse & neglect*, 27(7), 713-732.
- Bandura, A., & Huston, A. C. (1961). Identification as a process of incidental learning. *The Journal of Abnormal and Social Psychology*, 63(2), 311.
- Bandura, A., Ross, D., & Ross, S. A. (1961). Transmission of aggression through imitation of aggressive models. *The Journal of Abnormal and Social Psychology*, 63(3), 575.
- Bandura, A., & Walters, R. H. (1977). *Social learning theory* (Vol. 1). Englewood Cliffs, NJ: Prentice-hall.
- Bandura, A. (1978). Social learning theory of aggression. *Journal of communication*, 28(3), 12-29.

- Bank, L., Burraston, B., & Snyder, J. (2004). Sibling conflict and ineffective parenting as predictors of adolescent boys' antisocial behavior and peer difficulties: Additive and interactional effects. *Journal of research on adolescence, 14*(1), 99-125.
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: desire for interpersonal attachments as a fundamental human motivation. *Psychological bulletin, 117*(3), 497.
- Baumrind, D. (1966). Effects of authoritative parental control on child behavior. *Child development, 887-907*.
- Beaver, K. M., & Walsh, A. (2011). Biosocial criminology. *The Ashgate Research Companion to Biosocial Theories of Crime, 3*.
- Belsky, J. (1980). Child maltreatment: An ecological integration. *American psychologist, 35*(4), 320.
- Berlin, L. J., Appleyard, K., & Dodge, K. A. (2011). Intergenerational continuity in child maltreatment: Mediating mechanisms and implications for prevention. *Child development, 82*(1), 162-176.
- Bevan, E., & Higgins, D. J. (2002). Is domestic violence learned? The contribution of five forms of child maltreatment to men's violence and adjustment. *Journal of family violence, 17*(3), 223-245.
- Black, D. S., Sussman, S., & Unger, J. B. (2010). A further look at the intergenerational transmission of violence: Witnessing interparental violence in emerging adulthood. *Journal of Interpersonal Violence, 25*(6), 1022-1042.
- Bland, V. J., & Lambie, I. (2018). Does childhood neglect contribute to violent behavior in adulthood? A review of possible links. *Clinical psychology review*.
- Bograd, M. (1984). Family systems approaches to wife battering: A feminist critique. *American journal of orthopsychiatry, 54*(4), 558-568.
- Borowsky, I. W., Ireland, M., & Resnick, M. D. (2001). Adolescent suicide attempts: risks and protectors. *Pediatrics, 107*(3), 485-493.
- Boutwell, B. B., & Beaver, K. M. (2010). The intergenerational transmission of low self-control. *Journal of Research in Crime and Delinquency, 47*(2), 174-209.
- Bowlby, J. (1973). *Attachment and loss, vol. II: Separation* (Vol. 2). New York: Basic Books.
- Bowlby, J. (1984). Violence in the family as a disorder of the attachment and caregiving systems. *The American Journal of Psychoanalysis, 44*(1), 9-27.
- Brewerton, T. D. (2007). Eating disorders, trauma, and comorbidity: Focus on PTSD. *Eating disorders, 15*(4), 285-304.
- Bronfenbrenner, U. (1979). *The ecology of human development*. Harvard university press.
- Caspi, A., McClay, J., Moffitt, T. E., Mill, J., Martin, J., Craig, I. W & Poulton, R. (2002). Role of genotype in the cycle of violence in maltreated children. *science, 297* (5582), 851-854.

- Cavanagh, S. E. (2008). Family structure history and adolescent adjustment. *Journal of Family Issues*, 29(7), 944-980.
- Charuvastra, A., & Cloitre, M. (2008). Social bonds and posttraumatic stress disorder. *Annu. Rev. Psychol.*, 59, 301-328.
- Cicchetti, D. E., & Toth, S. L. (1997). *Developmental perspectives on trauma: Theory, research, and intervention*. University of Rochester Press.
- Cicchetti, D., & Toth, S. L. (2005). Child maltreatment. *Annul Review of Clinical Psychology*, 1, 409-438.
- Clemmons, J. C., Walsh, K., DiLillo, D., & Messman-Moore, T. L. (2007). Unique and combined contributions of multiple child abuse types and abuse severity to adult trauma symptomatology. *Child maltreatment*, 12(2), 172-181.
- Cummings, E. M., & Davies, P. T. (2011). *Marital conflict and children: An emotional security perspective*. Guilford Press.
- Cunningham, A. J., & Baker, L. L. (2007). *Little eyes, little ears: How violence against a mother shapes children as they grow*. London, ON: Centre for Children & Families in the Justice System
- Curtis, G. C. (1963). Violence breeds violence—perhaps?. *American Journal of Psychiatry*, 120(4), 386-387.
- De Bellis, M. D., & Zisk, A. (2014). The biological effects of childhood trauma. *Child and Adolescent Psychiatric Clinics*, 23(2), 185-222.
- Deb, S., Mukherjee, A., & Mathews, B. (2011). Aggression in sexually abused trafficked girls and efficacy of intervention. *Journal of Interpersonal Violence*, 26(4), 745-768.
- Baumeister, R. F., Vohs, K. D., Nathan DeWall, C., & Zhang, L. (2007). How emotion shapes behavior: Feedback, anticipation, and reflection, rather than direct causation. *Personality and Social Psychology Review*, 11(2), 167-203.
- Dodge, K. A., Bates, J. E., & Pettit, G. S. (1990). Mechanisms in the cycle of violence. *Science*, 250(4988), 1678-1683
- Dubner, A. E., & Motta, R. W. (1999). Sexually and physically abused foster care children and posttraumatic stress disorder. *Journal of consulting and clinical psychology*, 67(3), 367.
- Dubowitz, H., & Bennett, S. (2007). Physical abuse and neglect of children. *The Lancet*, 369(9576), 1891-1899.
- Duggins, S. D., Kuperminc, G. P., Henrich, C. C., Smalls-Glover, C., & Perilla, J. L. (2016). Aggression among adolescent victims of school bullying: Protective roles of family and school connectedness. *Psychology of violence*, 6(2), 205
- Duncan, R. D., Saunders, B. E., Kilpatrick, D. G., Hanson, R. F., & Resnick, H. S. (1996). Childhood physical assault as a risk factor for PTSD, depression, and substance abuse: findings from a national survey. *American Journal of Orthopsychiatry*, 66(3), 437.

- Dutton, D. G., & Hart, S. D. (1992). Evidence for long-term, specific effects of childhood abuse and neglect on criminal behavior in men. *International Journal of Offender Therapy and Comparative Criminology*, 36(2), 129-137.
- Egeland, B., Sroufe, L. A., & Erickson, M. (1983). The developmental consequence of different patterns of maltreatment. *Child abuse & neglect*, 7(4), 459-469.
- Ehrensaft, M. K., Cohen, P., Brown, J., Smailes, E., Chen, H., & Johnson, J. G. (2003). Intergenerational transmission of partner violence: a 20-year prospective study. *Journal of consulting and clinical psychology*, 71(4), 741.
- Elgar, F. J., McGrath, P. J., Waschbusch, D. A., Stewart, S. H., & Curtis, L. J. (2004). Mutual influences on maternal depression and child adjustment problems. *Clinical psychology review*, 24(4), 441-459.
- Ellis, L., Beaver, K. M., & Wright, J. (2009). *Handbook of crime correlates*. Academic Press.
- Evans, S. E., Davies, C., & DiLillo, D. (2008). Exposure to domestic violence: A meta-analysis of child and adolescent outcomes. *Aggression and violent behavior*, 13(2), 131-140.
- Evans, S. E., Steel, A. L., & DiLillo, D. (2013). Child maltreatment severity and adult trauma symptoms: Does perceived social support play a buffering role?. *Child abuse & neglect*, 37(11), 934-943.
- Fallon, B., Trocmé, N., Fluke, J., MacLaurin, B., Tonmyr, L., & Yuan, Y. Y. (2010). Methodological challenges in measuring child maltreatment. *Child abuse & neglect*, 34(1), 70-79.
- Farrington, D. P. (1989). Early predictors of adolescent aggression and adult violence. *Violence and victims*, 4(2), 79.
- Farrington, D. P. (1991). Childhood aggression and adult violence: Early precursors and later life outcomes. *The development and treatment of childhood aggression*, 5, 29.
- Farrington, D. P., Coid, J. W., & Murray, J. (2009). Family factors in the intergenerational transmission of offending. *Criminal Behaviour and Mental Health*, 19(2), 109-124.
- Fazel, S., Lichtenstein, P., Grann, M., & Långström, N. (2011). Risk of violent crime in individuals with epilepsy and traumatic brain injury: a 35-year Swedish population study. *PLoS medicine*, 8(12), e1001150.
- Feinberg, M. E., Solmeyer, A. R., & McHale, S. M. (2012). The third rail of family systems: Sibling relationships, mental and behavioral health, and preventive intervention in childhood and adolescence. *Clinical child and family psychology review*, 15(1), 43-57.
- Feiring, C., Simon, V. A., & Cleland, C. M. (2009). Childhood sexual abuse, stigmatization, internalizing symptoms, and the development of sexual difficulties and dating aggression. *Journal of consulting and clinical psychology*, 77(1), 127.

- Feldman, S., & Downey, G. (1994). Rejection sensitivity as a mediator of the impact of childhood exposure to family violence on adult attachment behavior. *Development and Psychopathology*, 6(1), 231-247.
- Felitti, V. J. (1991). Long-term medical consequences of incest, rape, and molestation. *Southern medical journal*, 84(3), 328-331.
- Finkelhor, D. (1990). Early and long-term effects of child sexual abuse: An update. *Professional psychology: Research and practice*, 21(5), 325.
- Finkelhor, D., & Jones, L. M. (2004). Explanations for the decline in child sexual abuse cases. *Juvenile Justice Bulletin*.
- Finkelhor, D., Ormrod, R. K., & Turner, H. A. (2009). Lifetime assessment of poly-victimization in a national sample of children and youth. *Child abuse & neglect*, 33(7), 403-411.
- Flannery, D. J., Vazsonyi, A. T., & Waldman, I. D. (Eds.). (2007). *The Cambridge handbook of violent behavior and aggression*. Cambridge University Press.
- Ford, J. D., Fraleigh, L. A., & Connor, D. F. (2009). Child abuse and aggression among seriously emotionally disturbed children. *Journal of Clinical Child & Adolescent Psychology*, 39(1), 25-34.
- Ford, J. D., Chapman, J., Connor, D. F., & Cruise, K. R. (2012). Complex trauma and aggression in secure juvenile justice settings. *Criminal Justice and Behavior*, 39(6), 694-724.
- Fordham, H. (1992). Child abuse: physical neglect the most common form. *Michigan medicine*, 91(9), 29-29.
- Forehand, R., Wierson, M., Thomas, A. M., Armistead, L., Kempton, T., & Neighbors, B. (1991). The role of family stressors and parent relationships on adolescent functioning. *Journal of the American Academy of Child & Adolescent Psychiatry*, 30(2), 316-322.
- Futa, K. T., Nash, C. L., Hansen, D. J., & Garbin, C. P. (2003). Adult survivors of childhood abuse: An analysis of coping mechanisms used for stressful childhood memories and current stressors. *Journal of Family Violence*, 18(4), 227-239.
- Galvin, K. M., Braithwaite, D. O., & Bylund, C. L. (2015). *Family Communication: Cohesion and Change (Subscription)*. Routledge.
- Garbarino, J. (2001). An ecological perspective on the effects of violence on children. *Journal of Community Psychology*, 29(3), 361-378.
- Getahun, D., Jacobsen, S. J., Fassett, M. J., Chen, W., Demissie, K., & Rhoads, G. G. (2013). Recent trends in childhood attention-deficit/hyperactivity disorder. *JAMA pediatrics*, 167(3), 282-288.
- Gilbert, R., Widom, C. S., Browne, K., Fergusson, D., Webb, E., & Janson, S. (2009). Burden and consequences of child maltreatment in high-income countries. *The lancet*, 373(9657), 68-81.

- Gillikin, C., Habib, L., Evces, M., Bradley, B., Ressler, K. J., & Sanders, J. (2016). Trauma exposure and PTSD symptoms associate with violence in inner city civilians. *Journal of psychiatric research*, 83, 1-7.
- Glaser, D. (2002). Emotional abuse and neglect (psychological maltreatment): A conceptual framework. *Child abuse & neglect*, 26(6-7), 697-714.
- Glueck, S., & Glueck, E. (1950). Unraveling juvenile delinquency. *Juv. Ct. Judges J.*, 2, 32.
- Gorman-Smith, D., Henry, D. B., & Tolan, P. H. (2004). Exposure to community violence and violence perpetration: The protective effects of family functioning. *Journal of Clinical Child and Adolescent Psychology*, 33(3), 439-449.
- Haj-Yahia, M. M., & de Zoysa, P. (2008). Rates and psychological effects of exposure to family violence among Sri Lankan university students. *Child abuse & neglect*, 32(10), 994-1002.
- Hamby, S. L., Finkelhor, D., Turner, H., & Ormrod, R. (2011). Children's Exposure to Intimate Partner Violence and Other Family Violence. *National survey of children's exposure to violence*.
- Haugaard, J. J. (2000). The challenge of defining child sexual abuse. *American Psychologist*, 55(9), 1036.
- Hawkins, J. D., Herrenkohl, T., Farrington, D. P., Brewer, D., Catalano, R. F., & Harachi, T. W. (1998). A review of predictors of youth violence.
- Heim, L. R., Bader, M., Edut, S., Rachmany, L., Baratz-Goldstein, R., Lin, R., ... & Schreiber, S. (2017). The invisibility of mild traumatic brain injury: impaired cognitive performance as a silent symptom. *Journal of neurotrauma*, 34(17), 2518-2528.
- Herrenkohl, R. C., & Herrenkohl, T. I. (2009). Assessing a child's experience of multiple maltreatment types: Some unfinished business. *Journal of family violence*, 24(7), 485-496.
- Herrenkohl, R. C., Egolf, B. P., & Herrenkohl, E. C. (1997). Preschool antecedents of adolescent assaultive behavior: A longitudinal study. *American Journal of Orthopsychiatry*, 67(3), 422.
- Heyman, R. E., & Slep, A. M. S. (2002). Do child abuse and interparental violence lead to adulthood family violence? *Journal of Marriage and Family*, 64(4), 864-870
- Hibbard, R. A., Desch, L. W., & Committee on Child Abuse and Neglect. (2007). Maltreatment of children with disabilities. *Pediatrics*, 119(5), 1018-1025.
- Higgins, D. J., McCabe, M. P., & Ricciardelli, L. A. (2003). Child maltreatment, family characteristics and adult adjustment: Mediating and moderating processes. *Journal of aggression, maltreatment & trauma*, 6(2), 61-86.
- Higgins, D. J., & McCabe, M. P. (2000). Relationships between different types of maltreatment during childhood and adjustment in adulthood. *Child maltreatment*, 5(3), 261-272.

- Higgins, D. J. (2004). Differentiating between child maltreatment experiences. *Family Matters*, (69), 50.
- Higgins, D. J., & McCabe, M. P. (2001). Multiple forms of child abuse and neglect: Adult retrospective reports. *Aggression and Violent Behavior*, 6(6), 547-578.
- Hildyard, K. L., & Wolfe, D. A. (2002). Child neglect: developmental issues and outcomes☆. *Child abuse & neglect*, 26(6-7), 679-695.
- Holmes, M. R., Voith, L. A., & Gromoske, A. N. (2015). Lasting effect of intimate partner violence exposure during preschool on aggressive behavior and prosocial skills. *Journal of interpersonal violence*, 30(10), 1651-1670.
- Hooberman, J., Rosenfeld, B., Rasmussen, A., & Keller, A. (2010). Resilience in trauma-exposed refugees: The moderating effect of coping style on resilience variables. *American Journal of Orthopsychiatry*, 80(4), 557-563.
- Hussey, J. M., Chang, J. J., & Kotch, J. B. (2006). Child maltreatment in the United States: prevalence, risk factors, and adolescent health consequences. *Pediatrics*, 118(3), 933-942.
- Huth-Bocks, A. C., Levendosky, A. A., & Semel, M. A. (2001). The direct and indirect effects of domestic violence on young children's intellectual functioning. *Journal of family violence*, 16(3), 269-290.
- Iwaniec, D. (2006). *The emotionally abused and neglected child: Identification, assessment and intervention: A practice handbook*. John Wiley & Sons
- Jaffe, D. A., Wolfe, D. A., & Campbell, M. (2012). Growing Up with Domestic Violence: Advances in Psychotherapy, Evidence Based Practice.
- Jarjoura, G. R. (1993). Does dropping out of school enhance delinquent involvement? Results from a large-scale national probability sample. *Criminology*, 31(2), 149-172.
- Jennings, W. G., Park, M., Richards, T. N., Tomsich, E., Gover, A., & Powers, R. A. (2014). Exploring the relationship between child physical abuse and adult dating violence using a causal inference approach in an emerging adult population in South Korea. *Child abuse & neglect*, 38(12), 1902-1913.
- Jewkes, R. (2002). Intimate partner violence: causes and prevention. *The lancet*, 359(9315), 1423-1429.
- Johnson, V. K., Cowan, P. A., & Cowan, C. P. (1999). Children's classroom behavior: The unique contribution of family organization. *Journal of Family Psychology*, 13(3), 355.
- Johnson, M. P., & Ferraro, K. J. (2000). Research on domestic violence in the 1990s: Making distinctions. *Journal of Marriage and Family*, 62(4), 948-963.

- Johnsona, R. M., Kotch, J. B., Catellier, D. J., Winsor, J. R., Dufort, V., Hunter, W., & Amaya-Jackson, L. (2002). Adverse behavioral and emotional outcomes from child abuse and witnessed violence. *Child maltreatment*, 7(3), 179-186.
- Katzenstein, D., & Fontes, L. A. (2017). Twice Silenced: The Underreporting of Child Sexual Abuse in Orthodox Jewish Communities. *Journal of child sexual abuse*, 26(6), 752-767.
- Kaufman, J., & Zigler, E. (1987). Do abused children become abusive parents? *American journal of orthopsychiatry*, 57(2), 186.
- Kim, J., & Cicchetti, D. (2004). A longitudinal study of child maltreatment, mother-child relationship quality and maladjustment: The role of self-esteem and social competence. *Journal of abnormal child psychology*, 32(4), 341-354.
- King, V., & Boyd, L. M. (2016). Factors associated with perceptions of family belonging among adolescents. *Journal of Marriage and Family*, 78(4), 1114-1130.
- Kiselica, M. S., & Morrill-Richards, M. (2007). Sibling maltreatment: The forgotten abuse. *Journal of Counseling & Development*, 85(2), 148-160.
- Kiser, L. J., Stover, C. S., Navalta, C. P., Dorado, J., Vogel, J. M., Abdul-Adil, J. K., ... & Briggs, E. C. (2014). Effects of the child-perpetrator relationship on mental health outcomes of child abuse: It's (not) all relative. *Child abuse & neglect*, 38(6), 1083-1093.
- Koenen, K. C., Moffitt, T. E., Caspi, A., Taylor, A., & Purcell, S. (2003). Domestic violence is associated with environmental suppression of IQ in young children. *Development and psychopathology*, 15(2), 297-311.
- Kendall-Tackett, K. A. (2000). Physiological correlates of childhood abuse: chronic hyperarousal in PTSD, depression, and irritable bowel syndrome. *Child abuse & neglect*, 24(6), 799-810.
- Kent, A., Waller, G., & Dagnan, D. (1999). A greater role of emotional than physical or sexual abuse in predicting disordered eating attitudes: The role of mediating variables. *International Journal of Eating Disorders*, 25(2), 159-167.
- Kochanska, G. (2009). Family study. Effortful control batteries. *University of Iowa*.
- Lamb, M. E. (1975). Fathers: Forgotten contributors to child development. *Human development*, 18(4), 245-266.
- Lamis, D. A., Wilson, C. K., King, N. M., & Kaslow, N. J. (2014). Child abuse, social support, and social functioning in African American children. *Journal of Family Violence*, 29(8), 881-891.
- Langhinrichsen-Rohling, J., Neidig, P., & Thorn, G. (1995). Violent marriages: Gender differences in levels of current violence and past abuse. *Journal of family Violence*, 10(2), 159-176.

- Leake, V. S. (2007). Personal, familial, and systemic factors associated with family belonging for stepfamily adolescents. *Journal of Divorce & Remarriage*, 47(1-2), 135-155.
- Levesque, R. J. (2001). *Culture and family violence: Fostering change through human rights law*. American Psychological Association.
- Lipovsky, J. A., Swenson, C. C., Ralston, M. E., & Saunders, B. E. (1998). The abuse clarification process in the treatment of intrafamilial child abuse. *Child Abuse & Neglect*, 22(7), 729-741.
- Lisak, D., Hopper, J., & Song, P. (1996). Factors in the cycle of violence: Gender rigidity and emotional constriction. *Journal of traumatic stress*, 9(4), 721-743.
- Liu, J., & Raine, A. (2006). The effect of childhood malnutrition on externalizing behavior. *Current opinion in pediatrics*, 18(5), 565-570.
- Margolin, G., Gordis, E. B., Medina, A. M., & Oliver, P. H. (2003). The co-occurrence of husband-to-wife aggression, family-of-origin aggression, and child abuse potential in a community sample: Implications for parenting. *Journal of Interpersonal Violence*, 18(4), 413-440.
- Maslow, A. H. (1954). The instinctoid nature of basic needs. *Journal of Personality*, 22(3), 326-347.
- Marvin, R. S., & Stewart, R. B. (1990). A family systems framework for the study of attachment. *Attachment in the preschool years: Theory, research, and intervention*, 51-86.
- 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(1), 121-143.
- Marsee, M. A. (2008). Reactive aggression and posttraumatic stress in adolescents affected by Hurricane Katrina. *Journal of Clinical Child & Adolescent Psychology*, 37(3), 519-529.
- McCord, J. (1983). A forty year perspective on effects of child abuse and neglect. *Child abuse & neglect*, 7(3), 265-270.
- McHale, S. M., & Crouter, A. C. (1996). *The family contexts of children's sibling relationships*. Ablex Publishing.
- McHale, S. M., Updegraff, K. A., & Whiteman, S. D. (2012). Sibling relationships and influences in childhood and adolescence. *Journal of Marriage and Family*, 74(5), 913-930.
- McWey, L. M., Pazdera, A. L., Vennun, A., & Wojciak, A. S. (2013). Intergenerational patterns of maltreatment in families at risk for foster care. *Journal of Marital and Family Therapy*, 39(2), 133-147.
- Mersky, J. P., & Reynolds, A. J. (2007). Child maltreatment and violent delinquency: Disentangling main effects and subgroup effects. *Child maltreatment*, 12(3), 246-258.

- Miller, D. A., McCluskey-Fawcett, K., & Irving, L. M. (1993). The relationship between childhood sexual abuse and subsequent onset of bulimia nervosa. *Child abuse & neglect*, 17(2), 305-314.
- Moylan, C. A., Herrenkohl, T. I., Sousa, C., Tajima, E. A., Herrenkohl, R. C., & Russo, M. J. (2010). The effects of child abuse and exposure to domestic violence on adolescent internalizing and externalizing behavior problems. *Journal of family Violence*, 25(1), 53-63.
- Murray, C. E. (2006). Controversy, constraints, and context: Understanding family violence through family systems theory. *The Family Journal*, 14(3), 234-239.
- Murshid, N. S. (2017). Men's report of domestic violence perpetration in Bangladesh: Correlates from a nationally representative survey. *Journal of interpersonal violence*, 32(2), 290-307.
- Norman, R. E., Byambaa, M., De, R., Butchart, A., Scott, J., & Vos, T. (2012). The long-term health consequences of child physical abuse, emotional abuse, and neglect: a systematic review and meta-analysis. *PLoS medicine*, 9(11), e1001349
- Oswald, S. H., Heil, K., & Goldbeck, L. (2009). History of maltreatment and mental health problems in foster children: A review of the literature. *Journal of pediatric psychology*, 35(5), 462-472.
- Orpinas, P., Murray, N., & Kelder, S. (1999). Parental influences on students' aggressive behaviors and weapon carrying. *Health Education & Behavior*, 26(6), 774-787.
- Overholser, J. C., & Beck, S. (1986). Multimethod assessment of rapists, child molesters, and three control groups on behavioral and psychological measures. *Journal of Consulting and Clinical Psychology*, 54(5), 682.
- Piquero, A. (2000). Frequency, specialization, and violence in offending careers. *Journal of research in crime and delinquency*, 37(4), 392-418.
- Pleck, E. H. (1987). *Domestic tyranny: The making of social policy against family violence from colonial times to the present* (p. 150). New York: Oxford University Press.
- Radstone, S. (2007). Trauma theory: Contexts, politics, ethics. *Paragraph*, 30(1), 9-29.
- Ramirez, S. R., Jeglic, E. L., & Calkins, C. (2015). An examination of the relationship between childhood abuse, anger and violent behavior among a sample of sex offenders. *Health & justice*, 3(1), 14.
- Reidy, T. J. (1977). The aggressive characteristics of abused and neglected children. *Journal of Clinical Psychology*, 33(4), 1140-1145.
- Repetti, R. L., Taylor, S. E., & Seeman, T. E. (2002). Risky families: family social environments and the mental and physical health of offspring. *Psychological bulletin*, 128(2), 330.

- Resnick, M. D., Bearman, P. S., Blum, R. W., Bauman, K. E., Harris, K. M., Jones, J., ... & Ireland, M. (1997). Protecting adolescents from harm: findings from the National Longitudinal Study on Adolescent Health. *Jama*, 278(10), 823-832.
- Resnick, M. D., Ireland, M., & Borowsky, I. (2004). Youth violence perpetration: what protects? What predicts? Findings from the National Longitudinal Study of Adolescent Health. *Journal of adolescent health*, 35(5), 424-e1.
- Riggs, D. W., Augoustinos, M., & Delfabbro, P. H. (2009). Role of foster family belonging in recovery from child maltreatment. *Australian Psychologist*, 44(3), 166-173.
- Rivera, B., & Widom, C. S. (1990). Childhood victimization and violent offending. *Violence and victims*, 5(1), 19.
- Rohlf, H. L., Holl, A. K., Kirsch, F., Krahé, B., & Elsner, B. (2018). Longitudinal links between executive function, anger, and aggression in middle childhood. *Frontiers in behavioral neuroscience*, 12, 27.
- Rosen, K. H., Bartle-Haring, S & Stith, S. M. (2001). Using Bowen theory to enhance understanding of the intergenerational transmission of dating violence. *Journal of Family Issues*, 22(1), 124-142.
- Schelbe, L., & Geiger, J. M. (2017). What Is Intergenerational Transmission of Child Maltreatment? In *Intergenerational Transmission of Child Maltreatment* (pp. 1-14). Springer, Cham.
- Sedlak, A. J., & Broadhurst, D. D. (1996). The national incidence study of child abuse and neglect. *Washington DC. US Department of Health and Human Services*.
- Sellers, C. S., Cochran, J. K., & Branch, K. A. (2005). Social learning theory and partner violence: A research note. *Deviant Behavior*, 26(4), 379-395.
- Shields, A., & Cicchetti, D. (1998). Reactive aggression among maltreated children: The contributions of attention and emotion dysregulation. *Journal of clinical child psychology*, 27(4), 381-395.
- Sinclair, H. C., Ladny, R. T., & Lyndon, A. E. (2011). Adding insult to injury: effects of interpersonal rejection types, rejection sensitivity, and self-regulation on obsessive relational intrusion. *Aggressive behavior*, 37(6), 503-520.
- Smith, C. A., Ireland, T. O., & Thornberry, T. P. (2005). Adolescent maltreatment and its impact on young adult antisocial behavior. *Child abuse & neglect*, 29(10), 1099-1119.
- Spinetta, J. J., & Rigler, D. (1972). The child-abusing parent: A psychological review. *Psychological bulletin*, 77(4), 296.
- Spinney, A., & Harper, A. (2013). Domestic violence and preventing homelessness: Legislative development and policy change. *Parity*, 26(2), 12.

- Starling, S. P., Holden, J. R., & Jenny, C. (1995). Abusive head trauma: the relationship of perpetrators to their victims. *Pediatrics*, 95(2), 259-262.
- Strassberg, Z., Dodge, K. A., Pettit, G. S., & Bates, J. E. (1994). Spanking in the home and children's subsequent aggression toward kindergarten peers. *Development and psychopathology*, 6(3), 445-461.
- Straus, M. A., & Gelles, R. J. (1986). Societal change and change in family violence from 1975 to 1985 as revealed by two national surveys. *Journal of Marriage and the Family*, 465-479.
- Straus, M. A., & Gelles, R. J. (1990). How violent are American families? Estimates from the National Family Violence Resurvey and other studies. *Physical violence in American families: Risk factors and adaptations to violence in*, 8(145), 95-112.
- Straus, M. A. (1991). Discipline and deviance: Physical punishment of children and violence and other crime in adulthood. *Social problems*, 38(2), 133-154.
- Straus, M. A., & Giles-Sims, J. (1997). Spanking by Parents and Subsequent. *Archives of Pediatrics and Adolescent Medicine*, 151, 761-767.
- Strauss, M., Gelles, R. J., & Steinmetz, S. K. (1980). Violence in the American family: behind closed doors.
- Straus, M. A., & Stewart, J. H. (1999). Corporal punishment by American parents: National data on prevalence, chronicity, severity, and duration, in relation to child and family characteristics. *Clinical child and family psychology review*, 2(2), 55-70.
- Suchman, N. E., & Luthar, S. S. (2000). Maternal addiction, child maladjustment and socio-demographic risks: implications for parenting behaviors. *Addiction*, 95(9), 1417-1428.
- Sullivan, P. M., & Knutson, J. F. (2000). Maltreatment and disabilities: A population-based epidemiological study. *Child abuse & neglect*, 24(10), 1257-1273.
- Swanston, H. Y., Plunkett, A. M., O'Toole, B. I., Shrimpton, S., Parkinson, P. N., & Oates, R. K. (2003). Nine years after child sexual abuse. *Child abuse & neglect*, 27(8), 967-984.
- Swenson, C. C., Schaeffer, C. M., Henggeler, S. W., Faldowski, R., & Mayhew, A. M. (2010). Multisystemic therapy for child abuse and neglect: A randomized effectiveness trial. *Journal of Family Psychology*, 24(4), 497.
- Taillieu, T. L., Brownridge, D. A., Sareen, J., & Afifi, T. O. (2016). Childhood emotional maltreatment and mental disorders: Results from a nationally representative adult sample from the United States. *Child abuse & neglect*, 59, 1-12.
- Theobald, D., Farrington, D. P., & Piquero, A. R. (2013). Childhood broken homes and adult violence: An analysis of moderators and mediators. *Journal of Criminal Justice*, 41(1), 44-52.

- Thornberry, T. P., Freeman-Gallant, A., & Lovegrove, P. J. (2009). Intergenerational linkages in antisocial behaviour. *Criminal Behaviour and Mental Health*, 19(2), 80-93.
- Thornton, D. (2002). Constructing and testing a framework for dynamic risk assessment. *Sexual Abuse: A Journal of Research and Treatment*, 14(2), 139-153.
- Teicher, M. H., & Vitaliano, G. D. (2011). Witnessing violence toward siblings: an understudied but potent form of early adversity. *PLoS One*, 6(12), e28852.
- Teicher, M. H., & Samson, J. A. (2016). Annual research review: enduring neurobiological effects of childhood abuse and neglect. *Journal of child psychology and psychiatry*, 57(3), 241-266.
- Tjaden, P., & Thoennes, N. (2000). Prevalence and consequences of male-to-female and female-to-male intimate partner violence as measured by the National Violence Against Women Survey. *Violence against women*, 6(2), 142-161.
- Turanovic, J. J., & Pratt, T. C. (2015). Longitudinal effects of violent victimization during adolescence on adverse outcomes in adulthood: A focus on prosocial attachments. *The Journal of pediatrics*, 166(4), 1062-1069.
- Ullman, S. E. (2007). Relationship to perpetrator, disclosure, social reactions, and PTSD symptoms in child sexual abuse survivors. *Journal of child sexual abuse*, 16(1), 19-36.
- Van der Kolk, B. A. (1989). The compulsion to repeat the trauma. *Psychiatric Clinics of North America*, 12(2), 389-411.
- Vu, N. L., Jouriles, E. N., McDonald, R., & Rosenfield, D. (2016). Children's exposure to intimate partner violence: A meta-analysis of longitudinal associations with child adjustment problems. *Clinical psychology review*, 46, 25-33.
- Vuchinich, S., Hetherington, E. M., Vuchinich, R. A., & Clingempeel, W. G. (1991). Parent-child interaction and gender differences in early adolescents' adaptation to stepfamilies. *Developmental Psychology*, 27(4), 618.
- Walker, E. A., Gelfand, A., Katon, W. J., Koss, M. P., Von Korff, M., Bernstein, D., & Russo, J. (1999). Adult health status of women with histories of childhood abuse and neglect. *The American journal of medicine*, 107(4), 332-339.
- West, C. D., & Zimmerman, D. H. (1977). Women's place in everyday talk: Reflections on parent-child interaction. *Social problems*, 24(5), 521-529.
- Whitfield, C. L., Anda, R. F., Dube, S. R., & Felitti, V. J. (2003). Violent childhood experiences and the risk of intimate partner violence in adults: Assessment in a large health maintenance organization. *Journal of interpersonal violence*, 18(2), 166-185.
- Widom, C. S. (1989). The cycle of violence. *Science*, 244(4901), 160-166.

- Widom, C. S., & Maxfield, M. G. (2001). An Update on the " Cycle of Violence." Research in Brief.
- Widom, C. S., & Wilson, H. W. (2015). Intergenerational transmission of violence. In *Violence and mental health* (pp. 27-45). Springer, Dordrecht.
- Wolock, I., & Horowitz, B. (1984). Child maltreatment as a social problem: the neglect of neglect. *American Journal of Orthopsychiatry*, 54(4), 530.
- Woodhouse, S. S., Dykas, M. J., & Cassidy, J. (2009). Perceptions of secure base provision within the family. *Attachment & human development*, 11(1), 47-67.
- Wright, E. M., & Fagan, A. A. (2013). The cycle of violence in context: Exploring the moderating roles of neighborhood disadvantage and cultural norms. *Criminology*, 51(2), 217-249.
- Zeanah, C. H., & Zeanah, P. D. (1989). Intergenerational transmission of maltreatment: Insights from attachment theory and research. *Psychiatry*, 52(2), 177-196.

BIOGRAPHICAL SKETCH

Roshni Trehan Ladny is a Ph.D. Candidate at Florida State University's College of Criminology and Criminal Justice. Her main research interests include family violence, aggressive behavior, animal cruelty, and offender rehabilitation. Roshni's educational background consists of a bachelor's degree in Chemistry with a concentration in Psychology, a master's degree in clinical psychology, and a master's degree in Criminology. She has worked extensively as a graduate research and teaching assistant as well as an instructor. Prior to pursuing her Ph.D., Roshni worked as a mental health therapist with victims of domestic violence, clients with substance abuse treatment needs, and youth involved in the juvenile justice court system. Her prior work has appeared in *Aggressive Behavior*, *Deviant Behavior*, and *Journal of Criminal Justice Education*. Roshni will graduate with her Ph.D. in Criminology and Criminal Justice in July 2018 and has accepted a job as an Assistant Professor at The University of Tampa beginning August, 2018.