

Exposure to Community Violence and  
Preschool Children's Behavioral and Social Functioning:  
The Mediating Role of Parental Depression and Children's Social Cognition

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## ABSTRACT

Jennifer M. Wojciechowski: Exposure to Community Violence and  
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(Under the direction of Barbara H. Wasik)

Past research has indicated that children exposed to violence have negative behavioral and social outcomes. However, few studies have investigated specifically how exposure to violence affects *young* children's functioning. Additionally, current violence research stresses the importance of identifying mechanisms through which violence exposure affects children; however, little research has been conducted to explore the pathways through which young children's exposure to violence leads to maladjustment. In this study, prevalence and types of violence (i.e., victimization and witnessed) exposure among preschool children residing outside of inner-cities as well as negative behavioral and social outcomes were explored. More specifically, the study had four purposes: (1) to determine if prevalence of young children's violence exposure differs as a function of children's race and gender, (2) to determine if violence exposure predicts problem behaviors, aggression, and deficits in social functioning, (3) to explore the potential mediating role of parental depression, and (4) to explore the possible mediating role of children's social cognition. Data collected during the *Preschool Behavior Project Revised (PBP-R)* conducted at the Frank Porter Graham Child Development Institute at the University of North Carolina Chapel Hill was utilized to

investigate these issues. Participants in the study included Head Start children, parents, and classroom teachers.

Results indicated that children's gender and race did not statistically significantly predict prevalence of violence exposure. Findings also suggested that exposure to violence through victimization significantly predicts aggression in preschool children. Specifically, children exposed to violence as victims had a higher likelihood of exhibiting aggressive behavior than children with no violence exposure or who witnessed violence exposure. However, violence exposure did not significantly predict problem behaviors or social skills deficits in children. Results indicated that parental depression mediated the relationship between children's exposure to violence and children's problem behaviors and social functioning. Furthermore, path analyses indicated indirect effects between exposure to violence (i.e., total exposure and witnessing) and children's social skills and problem behaviors via parental depression. Children's social cognition did not mediate the relationship between children's exposure to violence and negative outcomes. Limitations of the study and implications for future research are discussed.

## TABLE OF CONTENTS

LIST OF TABLES.....	vi
LIST OF FIGURES.....	vii
Chapter	
I. INTRODUCTION .....	1
II. REVIEW OF THE LITERATURE.....	4
Definition of Community Violence.....	4
Prevalence of Community Violence.....	6
Methodological Considerations In Measurement of Children’s ETV	8
Specific Populations At Risk for Exposure to Violence.....	10
Consequences of Children’s Exposure to Community Violence.....	12
Externalizing Behaviors.....	12
Internalizing Behaviors.....	13
Social Functioning.....	13
Outcomes of Witnessing and Victimization of Community Violence.....	14
Young Children’s Exposure to Violence.....	15
Protective Factors of Children’s Exposure to Violence.....	17
Individual Child Characteristics.....	17
Characteristics of the Family.....	18
Characteristics of the Violence Exposure.....	18
Developmental Considerations.....	18

Research on Social Cognition in Young Children with ETV.....	20
Encoding Social Cues: Emotion Recognition.....	21
Interpretation of Social Cues: Hostile Attribution Bias.....	22
Potential Mediators of Negative Outcomes in Children with ETV.....	23
Social Cognition .....	24
Parental Depression.....	25
ETV and Attachment Theory.....	25
ETV and Social Learning Theory.....	26
Gaps in the Exposure to Violence Research.....	27
Research Questions and Hypotheses.....	28
<b>III. METHOD .....</b>	<b>34</b>
Participants.....	34
Procedures.....	35
Assessment of Predictor Constructs.....	36
Exposure to Violence.....	36
Assessment of Mediator Constructs.....	38
Encoding Social Cues: Emotion Recognition.....	38
Interpretation of Social Cues: Hostile Attribution Bias.....	39
Child Cognitive Functioning.....	40
Parental Depression.....	41
Assessment of Outcome Constructs.....	42
Problem Behaviors and Social Skills.....	44
Aggression.....	44
Data Analysis.....	44
Figure Interpretation.....	45
<b>IV. RESULTS.....</b>	<b>47</b>
Descriptive Statistics.....	47

Hypothesis 1: ETV, Race, and Gender.....	49
Hypothesis 2: ETV and Children’s Behavioral and Social Functioning	54
Total ETV and Negative Outcomes.....	55
Witnessing/Victimization by Violence and Negative Outcomes.....	58
Rationale for Mediation Analyses.....	60
Mediating Role of Parental Depression and Social Cognition.....	62
Results for Total ETV Mediation Path Model.....	63
Results for Witness/Victim Mediation Path Model.....	69
V. DISCUSSION.....	72
Description of Children’s Exposure to Violence.....	73
Findings.....	73
Hypothesis 1: ETV, Race, and Gender.....	74
Previous Empirical Support.....	74
Findings and Interpretation.....	75
Hypothesis 2: ETV and Children’s Behavioral and Social	76
Functioning.....	
Previous Empirical Support.....	76
Findings and Interpretation.....	77
Hypothesis 3: Mediating Role of Parental Depression.....	79
Previous Empirical Support.....	79
Findings and Interpretation.....	81
Hypothesis 4: Mediating Role of Social Cognition.....	84
Previous Empirical Support.....	84

Findings and Interpretation.....	88
Relationship Between Demographics and Mediating Variables.....	89
Considerations.....	89
Limitations.....	92
Conclusions.....	94
APPENDICES	
A. My Child’s Exposure to Violence.....	96
B. Hypothetical Attribution Task (modified).....	97
C. Preschool Behavior Project-12 (PBP-12).....	98
REFERENCES .....	99

## LIST OF TABLES

Table		
1.	Characteristics of Children in the Study.....	35
2.	Descriptive Statistics for ETV Measure and Variables in the Path Model.....	48
3.	Standardized Path Coefficients for Figures 1 and 2.....	54
4.	Bivariate Correlations for Predictor, Mediating, and Outcome Variables in the Path Model.....	55
5.	Standardized Path Coefficients for Figures 3 and 4.....	60
6.	Standardized Path Coefficients for Figures 4 and 5.....	67
7.	Total Indirect Effects and Specific Indirect Effects for Mediation Path Models.....	68



## LIST OF FIGURES

Figure		
1.	Path Model for Research Question 1a.....	52
2.	Path Model for Research Question 1b.....	53
3.	Path Model for Research Question 2a.....	57
4.	Path Model for Research Question 2b.....	59
5.	Mediation Path Model for Research Questions 3a and 4a.....	66
6.	Mediation Path Model for Research Questions 3b and 4b.....	71

## CHAPTER 1

### INTRODUCTION

Chronic community violence is viewed as a public health epidemic (Osofsky, 1995) in the United States and is sadly becoming a way of life. Children are particularly vulnerable to community violence, as they are 4 to 5 times more likely to become victims in serious crimes than adults (CDC, 1997). The majority of investigations examining exposure to violence (ETV) identified that children are experiencing disturbing levels of community violence as both victims and witnesses (Bell & Jenkins, 1993; Dyson, 1990; Richters & Martinez, 1993; Shakoor & Chalmers, 1989). Furthermore, young children are not spared from the presence of community violence (Aisenberg, 2001; Farver, Natera, & Frosch, 1999; Shahinfar, Nathan, & Leavitt, 2000) and its potentially deleterious effects.

In general, the current ETV literature identified several consequences of school-aged children's and adolescents' ETV, including internalizing and externalizing behavior problems (Cooley-Quille, Turner, & Beidel, 1995; Gorman-Smith & Tolan, 1998; Kliwer, Lepore, Oskin & Johnson, 1998; Lynch, 2003; Lynch & Cicchetti, 1998; Martinez & Richters, 1993; Osofsky, Wewers, Hann, Fick, & Richters, 1993; Schwab-Stone, Ayers, Kaspro, Voyce, Barone, Shriver, & Weissberg, 1995; Schwab-Stone, Chen, Greenberger, Silver, Lichtman, & Voyce, 1999) and aggression (Cooley-Quille, et al., 1995; Martinez & Richters, 1993; Osofsky, et al., 1993; Schwab-Stone, et al., 1995). The research identified a gap in the literature pertaining to the relationship between ETV and young children's social

functioning (Margolin & Gordis, 2000). The majority of ETV research has been correlational in nature and was conducted with school-aged children living in inner-cities. Preliminary research suggested that violence exposure may affect younger children differently than older children (Farver, Xu, Eppe, Fernandez, & Schwartz, 2005; Shahinfar, et al., 2000). This finding warrants future research investigating direct effects of young children's ETV which can be used to inform prevention and intervention efforts. Specifically, prior research suggested moving beyond correlational research to identify potential pathways to violence exposed children's maladjustment.

Given the overwhelming prevalence of violence in our society, this study investigated the negative impact of exposure to community violence on preschool children's functioning. Specifically, the modality (i.e., witnessing vs. victimization), severity (i.e., severe vs. mild), and frequency of children's violence exposure was documented. The following confounding variables were also explored in this study: race, gender, age, family income, and geographic location. Second, the study examined the relationship between ETV and children's behavioral and social functioning. Lastly, this study focused on identifying family characteristics and individual child characteristics that mediate the relationship between preschool children's ETV and negative outcomes. Specifically, the role of parental depression and social cognition (i.e., emotion recognition, hostile attribution bias, and cognitive ability) were explored as possible mediators.

In exploring these questions, the study utilized data from the Preschool Behavior Project Revised (PBP-R) conducted at the Frank Porter Graham Child Development Institute at the University of North Carolina Chapel Hill. The project took place from 2001 to 2006 in four counties of central North Carolina. Participants included Head Start teachers, parents of

children in Head Start, as well as preschool children enrolled in the Head Start classrooms. The PBP-R implemented a social emotional intervention in Head Start classrooms that aimed to improve preschool children's overall school readiness. Evaluation of the program was conducted through parent and teacher interviews as well as child observations and assessments.

As the definition of community violence is much disputed in the research, this paper begins by reviewing the proposed definitions of children's ETV. Precise definitions of witnessing and victimization as well as mild versus severe violence exposure were also explored further. Next, the paper reviewed the prevalence of community violence as measured by previous studies. Methodological considerations in the investigation of ETV were also discussed, as many studies differ on their reporting of ETV and instrumentation. Research has identified specific risk factors associated with children's ETV that were reviewed subsequently. Moreover, the negative outcomes of ETV on children are well documented in the literature and were discussed thoroughly. Children's protective factors in the development of ETV were also identified. Given the young age of participants in the study, research on developmental perspectives as they relate to ETV was explored. Additionally, social cognitive processes in young children were discussed through theoretical frameworks and relevant research. Finally, previous studies investigating the role of parental depression and social cognition as mediators in children with ETV was examined, as well as current gaps in the ETV research with young children.

## CHAPTER 2

### REVIEW OF THE LITERATURE

#### Definition of Community Violence

The definition of community violence exposure varies widely across researchers. Lynch (1993) emphasized the utility of viewing community violence in terms of Bronfenbrenner's ecological theory (1977), which integrated the interaction of multiple embedded systems within a child's life. According to Lynch, the definition of community violence should incorporate violent incidents which directly affect the child as well as violence that is present in the many environments to which the child is exposed (i.e., home, school, community) (Lynch, 1993). Since each child is significantly affected by interactions among overlapping ecosystems (Bronfenbrenner, 1977), it is important to investigate encounters of community violence that occur in children's direct (microsystem) as well as indirect (exosystem) environments. Consequently, it is imperative that researchers investigate the prevalence and effects of both witnessing and victimization of community violence, as both may shape children's development and functioning (Groves, 1997; Lynch, 2003).

A more precise definition of community violence has been proffered throughout the ETV literature in recent years. Shahinfar et al. (2000) defined community violence as "the presence of violence and violence related events within an individual's proximal environment, including home, school, and neighborhood; it may involve direct or threatened

harm, be witnessed or experienced and involve known and unknown perpetrators” (p. 115). Furthermore, Shahinfar and her colleagues defined two distinct levels of community violence exposure - mild violence exposure consisted of beating, chasing, pushing/shoving, or slapping, while severe violence included exposure to robbery, threats with a weapon, shootings, and stabbings. Alternatively, Buka, Stichick, Birdthistle and Earls (2001) avoided labeling ETV as “indirect” or “direct” and instead identified three levels of violence exposure: primary (victimization), secondary (violence seen or heard), and tertiary (i.e., learning of a violent death, serious harm, or threat of death or injury to another person).

Recent research efforts have attempted to disentangle the unique effects of victimization and witnessing community violence. The majority of the ETV research has defined victimization of violence as “intentional acts initiated by another person to cause one harm (e.g., being chased, threatened, beaten up, robbed, mugged, raped, shot, stabbed, or killed)” (Buka et al., 2001, p. 299). However, there is a greater amount of dissonance among researchers regarding the precise definition of witnessing violence (Buka et al., 2001). For example, Shakoor and Chalmers (1991) defined “witnessed” violence as incidents that involve death, injury, or a threat to the physical integrity of another person; other researchers include hearing the occurrence of violent events (e.g., gunshots, screams) as witnessed violence (Campbell & Schwartz, 1996); still others include lesser crimes such as property damage (Lai, 1999), viewing violence on television and movies (Bell & Jenkins, 1993), or hearing about violent events (Richters & Saltzman, 1990). Margolin and Gordis (2000) argued that unlike other forms of violence, community violence is widely discussed and children who do not directly witness these violent incidents may still experience its ripple effects. Children often hear repeated accounts of a specific incident, which in turn causes

them to form their own mental imagery of the event. In this study “witnessed” violence included (1) violent events that children directly witnessed (e.g. saw someone shot, saw someone punched) (2) violent events that children heard in the community (e.g. gunshots) (3) severe violent events that children were told about (e.g. told about someone being killed, told about someone committing suicide).

### Prevalence of Community Violence

The majority of investigations examining ETV have focused on minority school-aged children in economically disadvantaged urban communities (Fitzpatrick & Boldizar, 1993; Lynch, 2003). Early studies of children’s ETV indicated disturbing levels of witnessed community violence. Shakoor and Chalmers (1989) surveyed 1,000 middle and high school students in Chicago, finding that 23% witnessed someone murdered and 40% of the murders were of family, friends, neighbors, or peers. Dyson (1990) conducted a similar study with 530 Chicago elementary students, finding that 33% witnessed a shooting, 31% saw a stabbing, and 84% had seen someone beaten up. Bell and Jenkins (1993) examined the prevalence of violence exposure in African American elementary, middle, and high school students living in moderately violent locations in the south side of Chicago. The 536 elementary school students surveyed reported high levels of life-threatening community violence; 26% witnessed someone shot, 30% witnessed a robbery, and 78% witnessed a beating. Further analyses of ETV in this study indicated that children’s violence exposure was cumulative, such that those who witnessed more severe forms of violence (e.g., killing) had also witnessed less severe violence (e.g., robbery, shooting, stabbing).

Later studies examined the prevalence rates for both witnessing and victimization of community violence. Richters and Martinez (1993) conducted a study in a moderately

violent, inner-city Washington D.C. elementary school to assess the extent to which children were exposed directly (i.e., as victims) and indirectly (i.e., as witnesses) to various types of violence. The study confirmed that a concerning number of children were exposed to community violence, as 84% of the children had witnessed violence (e.g., shootings, stabbings, chases by gangs, drug use) while 21% had experienced direct victimization. Findings from a related study conducted in a housing development in New Orleans indicated that nearly all of the 9 to 12 year old children surveyed had heard about a violent incident, while 91% had witnessed community violence, and over half had experienced direct victimization (Osofsky et al., 1993).

Studies have illustrated that young children are not spared by community violence, as many children are exposed to violence before they are old enough to attend school. One study surveying parents of 115 children ages 1 to 5 at a pediatric primary care clinic found that 10% of the children witnessed a knifing or shooting, 18% witnessed shoving, kicking or punching, and 47% heard gunshots (Taylor, Zuckerman, Harik, & McAlister Groves, 1994). Over 80% of the 31 Latino children in a California Head Start classroom were exposed to at least one event of community violence (Aisenberg, 2001). Shahinfar's et al. (2000) study of 155 Head Start children and their parents found similarly disturbing rates of ETV in preschool children, with 78% of the children's self reports and 66% of parent reports indicating that the children were exposed to at least one incident of community violence. In another study with 64 Head Start children, mothers reported over half their families were victimized by forced entry, threats of physical harm, and muggings, while 60% witnessed drug deals, arrests, and individuals with guns, and over half heard about a violent incident occurring in the neighborhood (Farver et al., 1999). In a more recent study, Farver et al.



(2005) found similarly alarming rates of violence exposure in young children. Mother reports of 431 preschool children living in the Los Angeles area indicated that over half of the children were personally victimized and witnessed gang activity, drug deals, police pursuits, arrests, and individuals with weapons. Furthermore, findings from the two studies indicated that nearly all participants reported hearing gunshots in their communities (Farver et al., 1999; Farver et al., 2005).

#### Methodological Considerations in Measurement of Children's ETV

Despite the dramatic degree of children's violence exposure reported throughout the literature, prevalence rates should be examined with caution. Methodological considerations such as the reliability of parent/child report, specific definitions of violence exposure, and characteristics of instrumentation should first be considered. Researchers conducting early studies of children's ETV identified a need for more innovative assessment strategies and instrumentation that investigate the varying presentations of witnessed violence (Richters & Martinez, 1993). Furthermore, there are many different dimensions of witnessed violence; injuries may impose harm at different body locations with varying levels of severity; violence can be witnessed at close proximity or at a distance; witnessed violent events or perpetrators may involve strangers, family members or people who have previously established relationships with the child (Allen, Jones, Seidman, & Aber, 1999; Pynoos, Frederick & Nader, 1987; Richters & Martinez, 1993). Similarly, violent victimization in children should be examined in terms of the child's relationship with the perpetrator (i.e., family member, peer, or stranger), the location of the violent incident (i.e., home, school, community), as well as the severity of the injury. Researchers also suggested that future

investigations consider the classification of violence exposure by examining specific effects of non-severe versus severe violence exposure (Richters & Martinez, 1993).

Additional methodological concerns arise in examining the concordance rates between youth and parent reporting of children's ETV. Martinez and Richters (1993) found that parents from homes that were most violent showed statistically significant differences in agreement with their children when reporting ETV and levels of child distress symptoms. These findings suggest that parents may not be wholly aware of their school-aged children's ETV and associated distress. Additionally, parents may feel defensive or ashamed and repress their children's ETV as a passive or active coping strategy (Richters & Martinez, 1993). Older children may erroneously over report violence exposure because they have difficulty distinguishing between memories of actual incidents and violence-related fantasies (Allen et al., 1999). Similarly, researchers suggested that younger children may be unable to distinguish between fantasy and reality (Shahinfar et al., 2000) or between violent events that were witnessed or experienced firsthand and incidents that were only heard about (Richters & Martinez, 1993). Lastly, Shahinfar and her colleagues suggested that differences in child and parent perceptions of violence may create discrepancies in reporting. Even though inconsistencies exist throughout the methodology and measurement of young children's exposure to violence, the research has provided significant evidence that children are exposed to community violence at alarming levels and are living in a dangerous world where they are highly susceptible to the effects of witnessing and victimization of violence (Kupersmidt, Shahinfar, & Voegler-Lee, 2002).

## Specific Populations At-Risk for Exposure to Violence

Children are not uniformly susceptible to violence exposure. Researchers have identified several risk factors associated with a higher likelihood of ETV. Gender is well-documented in the research as a risk factor for ETV, with males being more likely than females to be exposed to violence as both victims and witnesses (Cooley-Quile et al., 1995; Farrell & Bruce, 1997; Fitzpatrick & Boldizar, 1993; Fitzpatrick, 1997; Schwab-Stone et al., 1999). The CDC (2005) stated that of the 5,560 homicides reported in 2003 among 10 to 24 year olds, 86% were male and 14% female. In Bell and Jenkins' (1993) study, males reported higher levels of victimization than females; however, gender did not account for differences in levels of witnessing violence. Nonetheless, other research has shown no relationship between violence exposure (i.e., witnessing and victimization) and gender (Martin, Gordon, & Kupersmidt, 1995; Martinez & Richters, 1993). Similarly, a study of younger children's ETV indicated no difference in gender, which may suggest that gender is not as strongly associated with risk of ETV in younger children (Shahinfar, et al. 2000).

The age of the child when exposed to violence has also been identified as a potential risk factor. The majority of studies indicate that ETV is positively correlated with the child's age, such that older children experience more violence (Kliewer, et al., 1998; Overstreet & Braun, 2000). Richter and Martinez (1993) found that fifth- and sixth-grade children were more likely to witness muggings and arrests than first- and second-grade children. Findings from another study indicated that older children reported higher levels of witnessed violence exposure than younger children (Selner-O'Hagan et al., 1998). However, some inconsistencies exist in the research as Bell and Jenkins' (1993) study of ETV indicated a positive correlation with age for victimization but not for witnessing violence. Furthermore,

Fitzpatrick and Boldizar (1993) and Martin et al. (1995) found no relationship between the age of children and their ETV as victims or witnesses.

In addition to gender and age, research has shown higher rates of ETV in children of racial and ethnic minorities. Among 10 to 24 year olds, homicide is the leading cause of death for African Americans and the second leading cause of death for Hispanics (CDC, 2006). In one study, school associated violent deaths were found to be three times higher for Hispanic and African American students than white students (Anderson, Kaufman, Simon, Barrios, Paulozzi, Ryan, et al., 2001). Several studies indicated that African American children had statistically significantly higher exposure to violence than Caucasian children (Fitzpatrick & Boldizar, 1993; Kuo, Mohler, Raudenbush & Earls, 2000; Fitzpatrick, 1997). Furthermore, studies have found that rates of victimization (Finkelhor & Dziuba-Leatherman, 1994) and witnessed violence (Schwab stone, et al., 1999) were greater among racial and ethnic minorities. Research conducted by Martin et al. (1995) with migrant farm workers indicated statistically significantly higher rates of ETV with African-American children than Hispanic children.

Children who grow up in families with lower levels of SES also report higher levels of ETV. Not surprisingly, several studies found that children who reported the most alarming levels of ETV lived in poorer neighborhoods (Fitzpatrick, 1997; Fitzpatrick & Boldizar, 1993). Additionally, urban children are more likely to witness or be victims of community violence (Campbell and Schwartz, 1996). Campbell and Schwartz (1996) examined ETV in sixth-grade students in urban and suburban schools in Pennsylvania, finding that the urban school children reported higher levels of ETV than students in the suburban school. Less is known about suburban and rural violence (Margolin & Gordis,

2000), however, some studies have found high levels of violence exposure in both urban and rural areas. Martin et al. (1995) found that 8-11-year-old children living in rural areas experienced comparable rates of violence exposure to children living in inner cities, with over half experiencing some type of violence exposure: 46% having witnessed violence and 19% having been victims of violence.

### Consequences of Children's Exposure to Community Violence

The harmful effects of children's ETV are well-documented throughout the literature. Exposure to violence as both a victim and witness has been linked to children's externalizing and internalizing behavior problems as well as physical and mental health, social development, and academic achievement (Fitzpatrick 1993; Garbarino et al., 1992; Richters & Martinez, 1993; Shakoor & Chalmers, 1989)

#### *Externalizing Behaviors.*

Numerous studies confirmed the association between children's ETV, as both victims and witnesses, and the increased probability of developing externalizing behaviors (Lynch, 2003). Several researchers have linked children's violence exposure to the development of aggressive behaviors (Cooley-Quille, et al., 1995; Martinez & Richters, 1993; Osofsky, et al., 1993; Schwab-Stone, et al., 1995). Likewise, violence exposure has been related to increased levels of fighting in young children and males (Bell & Jenkins, 1993). One study indicated that young children's ETV in an urban, low-income area was related to both teacher and peer nominated aggression (Attar, Guerra, & Tolan, 1994). A longitudinal study (Gorman-Smith & Tolan, 1998; Gorman-Smith, Henry & Tolan, 2004) conducted in an economically disadvantaged urban neighborhood of Chicago supported previous findings indicating significant relationships between community violence exposure and increased aggression as

well as violence perpetration in children (Bell & Jenkins, 1991; Shakoor & Chalmers, 1991). After controlling for previous symptoms of aggression, family relationship and parenting characteristics, Gorman-Smith and her colleagues discovered that the negative effects of exposure remained intact.

### *Internalizing Behaviors*

Research has indicated that ETV also places children at greater risk for increased anxiety and depressive symptoms (Kliewer et al., 1998, Lynch & Cicchetti 1998; Gorman-Smith & Tolan, 1998; Schwab-Stone et al., 1999). Lynch and Cicchetti (1998) found that children with high rates of ETV reported higher levels of depressive symptoms and traumatic stress as well as lowered self-esteem. Furthermore, children with increased levels of depressive symptoms also reported higher levels of victimization. Exposure to violence in elementary school-aged children and adolescents has also been associated with post traumatic stress disorder symptoms (Boney-McCoy & Finklehor, 1995; Fitzpatrick & Boldizar, 1993, Martinez & Richters, 1993; Osofsky et al., 1993). Martinez and Richters' (1993) previously mentioned study found that young children's ETV was related to distress symptoms characteristic of PTSD. Children who endorsed the highest level of distress symptoms were more prone to report being threatened with a knife, having witnessed a stabbing in the home, and having guns in the home. Other studies found that witnessing violence, hearing about, and knowing of traumatic events were also related to depression and PTSD symptoms (Freeman, Mokros, & Poznanski, 1993; Horowitz, Weine, & Jekel, 1995).

### *Social Functioning*

In comparison to other areas of functioning, relatively few studies have been conducted regarding the effect of community violence exposure on children's social

functioning (Kupersmidt et al., 2002; Margolin & Gordis, 2000). A few studies have identified a link between children's ETV and peer-nominated aggression (Attar et al., 1994, Schwartz & Proctor, 2000), while other studies have provided evidence suggesting that the modality of violence exposure leads to distinct differences when examining children's social functioning. Victimization was associated with aggression, bullying by peers, and peer rejection; while witnessing violence was only associated with aggression (Schwartz & Proctor, 2000). Dodge, Bates, and Pettit (1990) suggested ETV may also contribute to children's development of maladaptive social information processing abilities. More recent studies have also linked ETV with deficits in social information processing skills necessary for the development of social and emotional competence (Bradshaw & Garbarino, 2004; Schwartz & Proctor, 2000; Shahinfar, Kupersmidt, & Matza, 2001).

#### *Outcomes of Witnessing and Victimization of Community violence*

Recent studies have begun to focus on unique outcomes associated with the modality of children's violence exposure. One study linked modality of violence exposure to type of behavior problem (i.e., internalizing or externalizing) in rural children's ETV (Martin et al., 1995). In this study, witnessed violence was statistically significantly associated with internalizing behavior problems, while victimization was statistically significantly associated with externalizing behavior problems. Similarly, Shahinfar et al. (2000) conducted a study with 155 parents and preschool children that examined ETV, level of distress symptoms, and behavior problems. The results of the study supported the notion that resulting behavior problems related to ETV may differ with the modality of violence exposure. Furthermore, children and parents who reported witnessing mild violence (i.e., defined as beating, chasing, pushing/shoving, and slapping) exhibited significantly more internalizing symptoms (e.g.,

withdrawn, anxious, depressed) than non-witnessing peers. Additionally, externalizing behaviors (e.g., aggressive, disruptive) were more profound in children who reported to be victims of mild violence than their non-victimized peers (Shahinfar et al., 2000).

Shahinfar and her colleagues (2000) offered an explanation of their findings by postulating that children may utilize different types of defense processes in response to witnessing versus victimization of violence. Children who witness violence may feel helpless because they have less of an opportunity to intervene or effect change in the incident. Feelings of helplessness may in turn lead to the development of withdrawal and anxiety symptomatology common to internalizing behavior problems. In contrast, children who experience victimization of violence are forced to deal with the emotional or physical pain that the incident evokes. Ultimately, these children play an active role in dealing with their own exposure to violence. Victimized children are more likely to react aggressively and use externalizing behaviors as one option of protecting themselves.

#### Young Children's Exposure to Violence

The ETV research with young children is scarce as the majority of studies have focused on school aged children and adolescents. One study of preschool children in a high crime area found that exposure to community violence statistically significantly reduced positive peer interactions and cognitive performance (Farver et al., 1999). A recent study found that ETV was statistically significantly associated with increased internalizing and externalizing behavior problems in 3-5-year-old children residing in high crime neighborhoods of Boston (Linares, Heeren, Bronfman, Zuckerman, Augustyn & Tronick, 2001). These findings remained intact after controlling for maternal SES and family violence. Furthermore, the study indicated that the level of young children's ETV and the



presence of behavior problems were adversely affected by the level of maternal distress, suggesting that mothers' distress may be responsible for buffering or exacerbating the response in the child (Linares et al., 2001). A study conducted with 431 Head Start children by Farver et al. (2005), found that community violence exposure was related to parent reported child distress symptoms and teacher reported aggression. Similar to the previously mentioned study conducted by Linares et al. (2001), children's distress symptoms were mediated by mothers' depressive symptoms.

Other studies have focused on the frequency, modality, and severity of violence exposure when examining child outcomes. Stagg, Wills, and Howell's (1989) study investigating the effects of violence exposure on behavior problems among 61 African-American and Hispanic children between the ages of 2 and 5 indicated that the frequency of children's violence exposure significantly predicted behavior problems. Contrary to past studies, girls exhibited more externalizing behavior problems than boys. Additionally, Shahinfar et al. (2000) found Head Start children's victimization of mild violence and witnessing of severe violence was significantly associated with self reported distress symptoms. Furthermore, children who witnessed mild violence were statistically significantly more likely to exhibit internalizing behavior problems than non-witnessing peers. Also, the children who were victimized by mild violence exhibited statistically significantly higher rates of externalizing behavior than non-victimized peers. Despite a few recent studies of young children's ETV, a gap exists in the ETV research with preschool aged populations in comparison to school-aged children and adolescents.

## Protective Factors of Children's Exposure to Violence

Research has documented high prevalence rates of children's ETV as well as subsequent psychological distress. Current ETV studies are beginning to identify children's resiliency in the face of ETV by identifying mediating and moderating variables that mitigate the impact of negative outcomes in children with ETV. Osofsky (1995) drew upon clinical and research findings when suggesting that children exposed to violence have more favorable outcomes if they have a supportive person on whom to rely in their environment, have a safe haven from violence exposure, and have individual qualities (e.g., higher IQ, adaptable temperament) that equip them with alternative coping mechanisms (Osofsky, 1993; Richters & Martinez, 1993). Furthermore, Margolin and Gordis (2000) proposed that mediator factors fall into the following 3 categories: (a) individual child characteristics, (b) characteristics of the child's family, and (c) factors related to the frequency, severity and chronicity of the violence (Hughes, 1997).

### *Individual Child Characteristics*

Martinez and Richters (1993) conducted one of the earliest studies to examine mediating and moderating variables associated with children's ETV. Similar to other research studies, their conclusions identified gender as a moderator in regards to higher rates of exposure and the development of psychological distress symptoms in children with ETV, indicating that females experience less ETV than males (Cooley-Quile et al., 1995; Schwab-Stone et al., 1999). Additionally, Dodge et al. (1990) indicated that children's social information processing deficits (e.g., inability to attend to or recognize social cues, hostile attribution bias and the inability to identify appropriate problem solving strategies) mediated the relationship between exposure to physical victimization and later development of

aggressive behavior. Similarly, cognitive functioning has also been identified as a source of resiliency in children who are exposed to adversity.

#### *Characteristics of the Family*

Linares et al. (2001) found a direct relationship between preschool children's behavioral outcomes and co-witnessed community violence exposure which became nonsignificant when researchers controlled for maternal SES, family aggression, and factored in maternal distress as a mediator. Additionally, several studies have indicated that maternal distress and psychological functioning may mediate the relationship between children's ETV and behavior problems (Dyer Harnish, Dodge, & Valente, 1995; Linares et al., 2001).

#### *Characteristics of the Violence Exposure*

Lynch and Cicchetti (1998) argued that the severity of behavior problems that children with ETV exhibit is generally influenced by the type of violence exposure (e.g., witnessing versus being victimized), their relationship with the perpetrator or victim, and the proximity to witnessed violence. Some studies have linked more pervasive negative outcomes with severity of the violence exposure (i.e., severe or non-severe) (Shahinfar, 2001).

#### *Developmental Considerations*

While the current ETV research is focused on the identification of protective factors, there are limited studies that position these factors within a developmental framework (Kupersmidt et al., 2002; Margolin & Gordis, 2000). Lynch and Cicchetti (1998) suggest that children exposed to traumatic forms of violence may experience disruptions in developmental milestones. Exposure to violence can create varying challenges for children depending on the stage of development interrupted by violence exposure (Margolin &

Gordis, 2000). As a means to obtaining more comprehensive conclusions regarding the sequelae of children's violence exposure, researchers advise employing a developmental perspective informed by knowledge of typical adjustment across development phases (Cicchetti, 1993; Pynoos, 1993; Margolin & Gordis, 2000).

Previous research has erroneously proposed that young children are spared from psychological distress associated with ETV because they do not always remember or wholly comprehend violent incidents and the risk associated with violence (Osofsky, 1993). Several researchers have refuted this notion, suggesting that ETV affects children as early as infancy (Margolin & Gordis, 2000; Osofsky, 1995; Osofsky, 1993). Although infants are too young to verbally express what they perceive or think about violence, distress can be deduced from observed changes in behaviors such as irritability, sleep disturbances, emotional distress, somatic complaints, fears of being alone, regression in toileting behavior, and in language development (Drell, Siegel, & Gaensbauer, 1993; Osofsky, 1997; Zeanah & Scheeringa, 1997).

Similarly, preschool children exposed to violence are also prone to exhibiting regressive symptoms including bed wetting, decreased verbalization, dependence, and separation anxiety (Margolin & Gordis; 2000; Osofsky, 1997; Osofsky, 1995). Moreover, these regressive symptoms may in turn affect children's socialization or concentration in school (Margolin & Gordis, 2000). Children's ability to regulate their emotions may be disrupted by the intense emotions which accompany exposure to community violence (Osofsky, 1993). The disruptions in the typical course of development of emotion regulation may also affect children's development of empathy and other prosocial behaviors associated with social competence (Osofsky, 1995). Violence exposure in young children may also lead

to feelings of ineffectiveness, self attributions of shame, negative self-images and poor self-esteem. (Lynch & Cicchetti, 1998; Osofsky, 1995).

School-aged children may show increased levels of anxiety and sleep disturbances when exposed to violence (Pynoos, 1993). Difficulties with attentiveness and concentration are often seen in these children as a result of intrusive thoughts associated with their ETV (Osofsky, 1995). The anxiety associated with exposure to violence may disrupt the development of trust in young children and inhibit the subsequent emergence of autonomy which is typically developed through exploration (Osofsky & Fenichel, 1994). As a result, preschool children with ETV are less likely to explore and master their physical environment (Osofsky, 1995; Pynoos, 1993). Children exposed to violence may experience the additional developmental challenge of adjusting to the school environment and establishing peer networks. Children's social competence requires the ability to regulate emotions, show empathy, and attend to social-cognitive cues (Margolin & Gordis, 2000). Also, violence exposed children may also experience difficulty with establishing and maintaining interpersonal relationships because they tend to be both passive and inhibited but also more aggressive than peers unexposed to violence (Eth & Pynoos, 1994; Jenkins & Bell, 1997).

#### Research on Social Cognition in Young Children with ETV

The research with school-aged children identified social cognition as a key buffer against the negative effects of violence exposure (Dodge et al., 1994; Kupersmidt et al., 2002,). Kunda (1999) defined *social cognition* as the way individuals interpret and react to their social worlds. *General knowledge structures* are described as the way in which children view themselves, those around them, and their environments (Bradshaw & Garbarino, 2004). *Social-information processing* is another important social cognitive process that influences

the manner in which children comprehend social situations. The processes associated with social cognition are often unconscious behaviors that unfold automatically (Baldwin, 1992). Dodge et al. (1994) described a six stage *social information processing* (SIP) model: (1) encoding social cues (i.e., attending to relevant cues from environmental stimuli and remembering pertinent information), (2) mentally representing and interpreting social cues (i.e., attaching meaning to observed cues), (3) clarifying goals (i.e., choosing desired outcomes), (4) retrieving viable social responses (i.e., accessing responses from long term memory or formulating new response options), (5) making a response decision (i.e., evaluating the probable outcomes of each behavior and choosing an appropriate response), and (6) acting out the chosen behavioral response. This study looked specifically at the first two stages of the six–stage model of social information processing: (1) encoding social cues and (2) interpreting social cues.

#### *Encoding of Social Cues: Emotion Recognition*

Several studies have examined child deficits in the ‘encoding social cues’ stage of the SIP model. Previous research indicated that in general preschool children can accurately identify emotional expressions when presented with facial or contextual cues (Reichenbach & Masters, 1983; Walden & Field, 1982); however, maltreated children often exhibited deficits in emotion recognition when compared to children who were not victimized by violence, after controlling for cognitive ability (Camras, Grow, & Ribordy, 1983; During & McMahon, 1991). Several theorists have asserted that children acquire the ability to recognize emotions through direct experience, suggesting that children who are only exposed to hostile, aggressive environments will struggle to accurately encode cues. Moreover, Pollak, Cicchetti, Hornung, and Reed (2000) asserted that emotion recognition in early

childhood serves as an important foundation for children's subsequent development of social interpretations and behavioral responses.

Pollak et al. (2000) examined the impact of physical abuse and neglect on children's ability to recognize emotion in facial expressions. They postulated that preschool children exposed to physical abuse would be more likely to misinterpret emotional cues as angry emotions, given that they are most familiarized with the emotion of anger. Furthermore, they are more likely to overlook important environmental emotion cues as they are hypervigilant towards angry emotions. Conclusions from this study suggested children exposed to abuse are more accustomed to angry emotional cues given the hostile and violent nature of their environment. Given that these studies identified a link between children growing up in violent, abusive environments and ensuing emotion recognition deficits, research exploring the relationship between ETV and deficits in emotion recognition warrants further exploration. This study investigated the relationship between children's ETV and their subsequent ability to accurately recognize emotions, as this is an important element of the social information processing model (Dodge & Crick, 1994) and plays a vital role in the development of competent social behavior.

#### *Interpretation of Social Cues: Hostile Attribution Bias*

The culmination of negative experiences acquired through violence exposure may contribute to children's interpretation that the world is a dangerous place and cause them to view others as aggressive by nature and essentially "out to get them" (Bradshaw & Garbarino, 2004). Children identified as aggressive commonly exhibit persistent biases in their processing of social information. Dodge et al. (1990) defined *hostile attribution bias* as oversensitivity to cues of threat, selective attention to aggressive cues, and disregard of

relevant situational factors that may influence other's behavior. Crick and Dodge (1994) asserted that aggressive children tend to exhibit processing biases when presented with ambiguous social scenarios because they overemphasize hostile intentions in other's ambiguous behaviors. Future research is necessary in this area to determine if children's hostile attributions may provide further explanation about the link between ETV and young children's social and behavioral outcomes.

#### Potential Mediators of Negative Outcomes in Children with ETV

##### *Social Cognition*

Only a few studies to date have investigated the relationship between ETV and children's social cognitions. Schwartz and Proctor's (2000) study of inner city elementary aged children (4<sup>th</sup> to 6<sup>th</sup> grade) found that varying social cognitive factors mediated social outcomes depending on the modality of the child's ETV. Furthermore, the development of negative social outcomes (i.e., aggressive behaviors, peer rejection, and bullying by peers) in children *victimized* by violence was mediated by emotion dysregulation. However, negative social outcomes in children who *witnessed* violence were only mediated by deficits in social information processing.

Similar to Schwartz and Proctor's (2000) work, Shahinifar et al. (2001) also identified differing social cognitive mediating factors associated with the modality of violence exposure in their study of highly aggressive incarcerated adolescent males. Adolescents who were victims of severe violence were more likely to exhibit deficits in the beginning stages of the social information processing model (Crick & Dodge, 1994) (i.e., positive beliefs about aggression and misinterpretation of ambiguous social cues, as well as hostile social cues). On the contrary, witnesses of severe violence were more likely to exhibit deficits in the latter



social information processing model stages, as they perceived positive evaluations for aggressive responses.

Bradshaw and Garbarino's (2004) recent research with suburban adolescents linked ETV with a negative perceptual bias. Their results indicated that witnessing violence exposure was related to adolescents' bias towards negative processing of social information. Specifically, subjects exhibited hostile attribution biases, aggressive cognitions, and interpreted aggressive responses to threat with positive outcomes. They asserted that the relationship between witnessed violence exposure and aggressive beliefs is rooted in social learning theory. Furthermore, children interpret their world as dangerous and are consequently more likely to view others as hostile and select aggressive responses when faced with threatening encounters. Preliminary research investigating social cognition has neglected to examine its importance with younger populations and additional research in this area will be advantageous for clinicians and researchers who desire to design developmentally appropriate interventions and theories incorporating social cognitive processes that mediate the harmful effects of ETV.

#### *Parental Depression*

In addition to children's social cognitive processes, parental psychological functioning has been explored in the literature as a potential mediator or moderator of the harmful effects of children's ETV. Several studies have indicated that maternal distress and psychological functioning mediate the relationship between ETV and childhood behavior problems (Dyer Harnish et al., 1995; Linares et al., 2001). Parental distress is a particularly important issue for preschool aged children, as they are more likely to co-witness violence in the company of their parents than older children. Parents serve as role models and provide

children with an understanding of how to react to ambiguous and potentially harmful encounters (Farver et al., 2005). As a result, parents who exhibit stress reactions when exposed to violence will likely have children that exhibit distress as well (Linares et al. 2001; Farver et al. 2005). Frequently, ETV causes mothers to develop a sense of helplessness and frustration with their inability to shield their children from the violence in their communities (Garbarino et al., 2002). This pattern typically results in the development of maternal depression, which in turn leaves mothers less attentive to perform parenting responsibilities and more likely to have children who exhibit behavior problems (Downey & Coyne, 1990; Zahn-Waxler, Iannotti, Cummings, & Denham, 1990). These findings warrant further exploration of parental depression as a potential mediator between young children's ETV and resulting behavior and social problems.

Attachment Theory and Social Learning Theory provide theoretical support for the relationship between ETV, mediators of children's social cognition and parental depression, and behavioral and social deficits.

#### ETV and Attachment Theory

Research has connected children's ETV with the development of insecure attachments. Children with ETV may have emotionally unavailable caregivers that are numbed, frightened, or depressed as a result of the violence in their communities (Garbarino et al., 2002). As a result of having emotionally unavailable caregivers, children may withdraw and exhibit disorganized behaviors because they are unable to develop trust and security in the people who are supposed to meet their needs (Osofsky, 1995). Lynch and Cicchetti (1998) offered an alternative explanation for the development of insecure relationships with caregivers in children exposed to violence, suggesting that children raised

in chronically violent or stressful environments may experience feelings of learned helplessness or ineffectiveness. Internally, children develop negative perceptions of themselves that are outwardly communicated through low self-esteem. These negative self-perceptions may alter the manner in which children view themselves and others and trigger them to believe that their caregivers are incapable of keeping them safe from dangerous and threatening environments to which they are exposed. Furthermore, this process may lead children to believe they are unworthy of being kept safe and increase their development of insecure attachments (Lynch & Cicchetti, 1998).

Aber and Allen (1987) suggested that young children who have secure relationships with caregivers are more likely to explore the world, cautiously stray from their comfort zone, and begin to engage in new experiences (Ainsworth, Blehar, Waters, & Wall, 1978; Bowlby, 1969). Conversely, children who are preoccupied with safety and security concerns may be hypervigilant toward aggressive responses (Cicchetti & Toth, 1995). This tendency may contribute to biased social information processing, with an over interpretation toward hostile intent (Dodge et al., 1997). These flawed social cognitive processes may play a role in children's limited ability to acquire competent social responses and result in a tendency for them to react to ambiguous interactions in a negative manner (Margolin & Gordis, 2000).

#### ETV and Social Learning Theory

Albert Bandura (1974) asserted that children's behavior and social responses are largely a result of observational learning from role models in their social environment. Furthermore, Bandura proposed that children develop their social behavior by creating mental representations of observed social responses and later imitate behaviors of role models. These mental representations are stored in a child's memory and accessed when

they are selecting a strategy to utilize in social encounters. Moreover, Bandura's social learning theory (1973) suggested children exposed to aggressive role models have a higher probability of developing aggressive behaviors. Application of the social learning theory supports the notion that children with exposure to community violence learn that aggression or violence are acceptable responses to threat and in turn imitate the aggressive behaviors they witnessed or directly encountered.

Examining ETV from a social learning perspective suggests that children may be desensitized to the deleterious effects of violence and in turn, are at greater risk for adopting violence or aggression as a plausible method of expressing emotion or resolving conflicts (Bradshaw & Garbarino, 2004). Osofsky (1993) ascertained that children learn what they observe and unfortunately, children are exposed to violence in their homes, communities, the media, television and movies. Children are not learning that violence is bad, and instead view violence as a standard solution in resolving conflict. Furthermore, Nagin and Tremblay (1999) have indicated that physical aggression manifests itself most commonly at the age of two. They postulate that the process most responsible for mitigating the development of later aggression is not related to the learning of aggression in early childhood but instead the learning to *not* be aggressive. Their research sheds light on the notion that children mainly exposed to violent, aggressive role models in their homes and communities are deprived of the opportunity to acquire competent social strategies in regulating their emotions and resolving conflict.

#### Gaps in the Exposure to Violence Research

The overwhelming prevalence of community violence and resulting negative outcomes in children has been well-documented throughout the literature. However, in

comparison to school-aged children and adolescents, there is limited research investigating the effects of ETV during early childhood (Eiden, 1999; Linares et al., 2001). Research has shown that violence involvement has been linked to aggression, social impairments, and mental health problems in school aged children and adolescents, but has not identified whether early exposure to violence triggers more profound disruptions in development than later exposure. Feerick and Prinz (2003) stressed the need for future studies to investigate ETV from a developmental perspective in order to determine the effects of violence exposure throughout various stages of a child's development. Additionally, gaps in the ETV research exist in defining specific mechanisms explaining the connection between young children's ETV and maladjustment (Kliewer et al., 1998). Interestingly, some children appear unharmed or less affected by ETV than others. Consequently, the future direction of ETV research now needs to refocus on examining mediating and moderating variables, specifically in younger children, that better explain factors which buffer children against the harmful effects of violence.

### Research Questions and Hypotheses

This study investigated the prevalence, frequency, and modality of children's violence exposure. The first aim of this study was to document the role of race and gender in exposure to community violence among a preschool population from low SES families in rural/suburban geographic locations. Secondly, the contribution of violence exposure to child behavior problems and social competence was examined. Given prior research, an association was expected between violence exposure and children's behavioral and social functioning. Third, the role of parental depression and children's social cognition were

examined as potential mediating variables in the relationship between children's ETV and deficits in behavioral and social functioning.

### *Race and Gender Differences in Violence Exposure*

*Research Question 1: Does the rate of exposure to community violence (i.e., total exposure, victimization, and witnessing) in preschool children significantly differ as a function of race and gender?*

The ETV research has indicated that some children are at an increased risk for violence exposure. The role of gender in children's violence exposure is well-studied and generally indicates that males have a higher prevalence of violence exposure than females (Cooley-Quile et al., 1995; Farrell & Bruce, 1997; Fitzpatrick & Boldizar, 1993; Fitzpatrick, 1997; Schwab-Stone et al., 1999). However, there is some conflicting research that suggests there is no relationship between gender and violence exposure (Martin et al., 1995; Martinez & Richters, 1993; Shahinfar, et al., 2000). In addition to gender, higher rates of violence exposure have been found with children of racial and ethnic minorities, specifically African American and Hispanic populations (Anderson, et al., 2001; Fitzpatrick, 1997; Fitzpatrick & Boldizar, 1993; Kuo, et al., 2000). Given the lack of ETV research with preschool populations, further documentation of the rate and type of ETV with this population is warranted.

*Hypothesis 1: The rate of exposure to community violence (i.e., total exposure, victimization, and witnessing) in preschool children will be significantly higher for males and children from racial minorities.*

### *Social and Behavioral Functioning*

*Research Question 2: Is there a significant association between exposure to community violence (i.e., total exposure, victimization, witnessing) and reported problem behaviors, aggression, and social skills deficits in preschool children?*

The association between school-aged children and adolescents' ETV and negative behavioral outcomes, specifically externalizing behaviors (Cooley-Quille, et al., 1995; Lynch, 2003; Martinez & Richters, 1993; Osofsky, et al., 1993; Schwab-Stone, et al., 1995) and internalizing behaviors (Gorman-Smith & Tolan, 1998; Kliwer et al., 1998, Lynch & Cicchetti 1998; Schwab-Stone et al., 1999), has been well-documented. Given the nominal research with younger children's ETV and the need to acquire more information regarding the developmental sequelae of violence exposure, this study examined the association between violence exposure with early childhood behavior problems, aggression, and social skills deficits.

In comparison to other areas of functioning, research investigating the effects of community violence exposure on children's social functioning is sparse (Kupersmidt et al., 2002; Margolin & Gordis, 2000). The relationship between ETV and social skills is particularly important when investigating young children's violence exposure, given that social competence is an important developmental milestone which sets the precedent for future behavior and functioning (Kupersmidt & Coie, 1990). Some studies have identified a link between children's ETV and social skills deficits such as peer-nominated aggression (Attar et al., 1994, Schwartz & Proctor, 2000) bullying by peers and peer rejection (Schwartz & Proctor, 2000). Additionally, researchers postulate that ETV may also affect children's development of empathy and other prosocial behaviors associated with social competence

(Osofsky, 1995). Furthermore, few studies have investigated the relationship between modality of violence exposure and children's social functioning.

*Hypothesis 2: Children's exposure to community violence (i.e., total exposure, victimization, witnessing) will significantly predict problem behaviors, aggression, and social skills deficits in preschool children.*

#### *Mediator Variables*

##### *Parental Depression*

*Research Question 3: Will the relationship between preschool children's exposure to community violence (i.e., total exposure, victimization, witnessing) and problem behaviors/aggression/social skills deficits be mediated by parental depression?*

Several studies have indicated that parental distress and psychological functioning may impact the development of childhood behavior problems (Linares et al., 2001; Dyer Harnish et al., 1995). ETV often causes parents to develop a sense of helplessness and frustration with their inability to shield their children from violence (Garbarino et al., 2002), which often leads to the development of depression. When parents are depressed they are less likely to perform parenting responsibilities and more prone to having children who exhibit behavior problems (Downey & Coyne, 1990; Zahn-Waxler, et al., 1990). Given previous findings and young children's dependence on their parents during early childhood, further investigation of the role of parental depression and ETV is warranted.

*Hypothesis 3: The relationship between preschool children's exposure to community violence (i.e., total exposure, victimization, witnessing) and problem behaviors/aggression/social skills deficits will be mediated by parental depression.*



## *Social Cognition*

*Research Question 4: Will the relationship between preschool children's exposure to community violence (i.e., total exposure, victimization, witnessing) and problem behaviors/aggression/social skills deficits be mediated by children's social cognition (i.e., emotion recognition, hostile attribution biases, and cognitive ability)?*

*Emotion Recognition.* Deficits in encoding and interpretation of social cues may cause impairments in children's behavior and social skill development. Some studies of emotion recognition have correlated children's knowledge of facial expressions and ability to label these emotions with the development of empathy and prosocial behaviors necessary for developing social-emotional competence (Izard, et al., 2001). Pollak et al. (2000) asserted that emotion recognition in early childhood serves as an important foundation for children's subsequent development of social interpretations and behavioral responses. Researchers suggested that children acquire the ability to recognize emotions through direct experience. Furthermore, children exposed to violence through physical abuse tend to inaccurately encode emotions as angry, given that they are more accustomed to angry emotional cues while growing up in a hostile and violent environment. Given the impact of physical abuse on children's ability to accurately interpret emotions, further research is warranted to determine if a similar relationship exists between ETV, children's emotion recognition, and behavioral and social functioning.

*Hostile Attribution Bias.* Research supported the notion that maltreated children have difficulties encoding and interpreting emotional cues in their environment with tendencies to exhibit negatively biased perceptions. The culmination of negative experiences acquired through violence exposure may contribute to children's interpretation that the world

is a dangerous place and cause them to view others as aggressive by nature (Bradshaw & Garbarino, 2004). Dodge et al. (Crick & Dodge, 1994; Dodge et al., 1990) theorized that children exposed to violence are hypervigilant towards threat in their environment and in turn struggle with accurately perceiving their social environment and interpreting the behavior of others. Given these theories, it is important to further investigate the potential impact of violence exposed children's hostile attribution biases on behavioral and social functioning.

*Cognitive Ability.* Cognitive functioning has been identified as a source of resiliency in children who are exposed to adversity. Many studies have indicated a relationship between children's cognitive functioning and their behavioral and social outcomes. The role of cognitive functioning in children's exposure to violence is not well documented, especially with younger populations. Given the importance of identifying mediating mechanisms through which children's violence exposure affects behavioral and social outcomes, the role of children's cognitive functioning warrants further investigation.

*Hypothesis 4: The relationship between preschool children's exposure to community violence (i.e., total exposure, victimization, witnessing) and problem behaviors/aggression/social skills deficits will be mediated by children's social cognition (i.e., emotion recognition, hostile attribution biases, and cognitive ability).*

## CHAPTER 3

### METHOD

This analysis utilized data collected from the Preschool Behavior Project Revised (PBP-R), a study conducted at Frank Porter Graham Child Development Institute at the University of North Carolina at Chapel Hill from 2001 to 2006. The study is a continuation of The Preschool Behavior Project (1997 to 2001), which implemented an intensive parent and teacher intervention aimed at reducing problem behaviors in Head Start children. The PBP-R was designed to develop a less intensive, but effective, social emotional intervention which could be self-maintained by the Head Start community. The PBP and PBP-R were part of The Head Start Quality and Mental Health Consortium funded by The Head Start Bureau and the Administration for Children Youth and Families Commissioner's Office of Research and Evaluation. The consortium strived to promote preschooler's school readiness in the areas of literacy, social-emotional development, and other areas of school readiness through combined research efforts of intervention projects in various states. Improvement in child outcomes were targeted by enhancing elements of the Head Start program such as curriculum, teacher training, mentoring, parent involvement, and assessment practices.

#### Participants

Head Start programs in several counties of central North Carolina were recruited to participate in the PBP-R program for each year of the study. Head Start staff members (i.e., teachers, teacher assistants, and program director) were recruited to participate in the study. Teachers and assistant teachers within the individual Head Start sites who agreed to

participate in the study assisted research staff with recruiting parent participants. Table 1 depicts descriptive statistics of children in the PBP study. Participants in the study were from diverse racial backgrounds.

Table 1

*Characteristics of Children*

	N	%
Children (n=282)		
Gender		
Boys	131	46.5
Girls	151	53.5
Race/ethnicity		
African American	128	45.4
Latino	80	28.4
White/Biracial/other	74	26.2
race		
Age		
3 to 4 years	57	20.2
4.01 to 5 years	225	79.8

Procedures

The PBP-R intervention was evaluated with an extensive battery of child, parent, and teacher measures. For the interests of this study, analyses focused on pretest data to avoid intervention effects. Parent interviews were typically conducted in the parents' homes; however, they were sometimes conducted in alternative locations, such as the child's school or a restaurant. The interview required approximately 75 minutes for completion and was individually administered by trained interviewers. Spanish-speaking parents were offered a Spanish version of the parent interview which was administered and translated by a native Spanish speaking staff member on the research team. Parents were given a \$25 Walmart gift card for their participation in the study. Additionally, the children in the study were assessed and observed in several areas of functioning in the Head Start classrooms. Child assessments were conducted during the school day at Head Start sites and children were given a book and

stickers for their participation. Teachers and teacher assistants participated in an interview regarding classroom characteristics, teaching style, and children's behavior and each received a \$25 check for their participation in the study.

### *Assessment of Predictor Constructs*

#### *Exposure to Violence*

Children's exposure to violence was assessed with a modified version of My Child's Exposure to Violence (Buka, Selner-O'Hagan, Kindlon, & Earls, 1996), an individually-administered, highly-structured parent interview. My Child's ETV was originally developed to assess children's lifetime ETV as well as their exposure over the course of the past year. For the purposes of this study parents were only requested to report their children's ETV over the past year, given the young age of the children. Parents were also requested to provide the location (i.e., home, community, or both) of the child's ETV. The modified instrument assessed the rate of children's exposure to 19 violent events through personal victimization, witnessing, and being told about violent incidents. One item from the original measure was omitted (i.e., was the child at home during a break in) and five items pertaining to violent events that children were told about were added to the measure (i.e., been told about someone getting shot, someone dying or getting seriously injured, someone getting killed, someone killing himself or herself, someone having been raped or sexually assaulted). This study did not include being told about someone dying or getting seriously injured, as the event may not involve violence.

Previous research with young children has indicated that violence exposure does not need to be experienced directly through victimization or witnessing since many children who merely hear about violent events in their homes or communities will experience similar

negative outcomes. These children form mental representations of the violent events they are told about and have difficulty distinguishing between fantasy and reality (Margolin & Gordis, 2000). Comparable to witnessing community violence, children who hear about violent events occurring in the community are indirectly affected by the exposure. Consequently, this study will include ‘hearing about violent events’ in the witnessing violence exposure subscale since children are indirectly affected by the violence. There are 3 subscales in *My Child’s ETV*: (1) witnessing, (2) victimization, and (3) total exposure (i.e., witnessing and victimization). Total scores on each of the 3 subscales were computed and used for further analysis. Total violence exposure, witnessing and victimization were all continuous variables in this study.

In a pilot study, the authors found *My ETV* proved to have high internal consistency ( $r = .68$  to  $.93$ ), test-retest reliability ( $r = .75$  to  $.94$ ), and construct validity indicated by item analysis and bivariate associations. Results supported prior ETV research, indicating that violence exposure is more prevalent among males, older participants, and children residing in high crime neighborhoods. Consequently, it can be assumed *My ETV* adequately measures a child’s ETV and differentiates well between acute and chronic violence exposure (Selner O’Hagan, Kindlon, Buka, Raudenbush, & Earls, 1998). In this study, reliability estimates for the violence exposure subscales are as follows: total ETV (.61), witnessing (.65), and victimization (.63).

In addition to ETV, the following control variables were also explored in this study to determine their relationship with ETV: age of child (i.e. continuous variable), gender, ethnicity (i.e., African-American, Latino, and Caucasian/biracial/other), geographic region (i.e., rural or urban), and income (i.e., \$15,000 or less and above \$15,000).

## *Assessment of Mediator Constructs*

### *Encoding Social Cues: Emotion Recognition*

Head Start children's emotion knowledge was evaluated using a revised version of the Kusche Emotional Inventory (KEI; Kusche, 1984). The KEI was developed to assess the emotional knowledge of elementary-aged deaf children participating in a curriculum designed to teach emotional understanding. In the initial study, KEI pretest assessment scores were significantly associated with age, language skills, reading achievement, neuropsychological tests, impulsivity, and externalized behavior problems. The KEI also exhibited very good reliability and validity (Kusche, 1984). Reliability for the emotion recognition variable in this study was acceptable ( $r = .66$ ).

The KEI Revised required test administrators to present children with pages containing four drawings of children experiencing varying emotions. Subsequently, children were requested to point to the picture that depicts the child who "feels" the target emotion. Target emotions on the KEI-R included: love, sad, scared/afraid, mad/angry, surprised, and happy. Spanish-speaking students were assessed by a native Spanish speaker with a Spanish version of the KEI-R. Children were given 12 trials on the KEI-R and assigned 2 points for correctly identifying the target emotion and 1 point if they selected the distracter emotion which displays the correct emotional valence but incorrect category. The total score of the KEI-R was computed and used for further analyses. Furthermore, KEI-R scores was computed across the 4 years of the study and standardized to determine the overall means and standard deviation of children's emotion recognition.

### *Interpretation of Social Cues: Hostile Attribution Bias*

The *Dodge Hypothetical Attribution Task* (Brown & Lemerise, 1990) was used to evaluate children's interpretation of ambiguous social cues and retrieval of behavioral responses. This measure was modified from the *Child Home Interview* which was used as part of an evaluation tool in the *Child Development Project*, a longitudinal study investigating the development of conduct problems in children ages 5 to adolescence. The original measure was designed to evaluate social information processing skills in children ages 4 to 8. The measure was normed with a sample of 585 children in three locations: a medium sized southern urban community in Nashville, Tennessee, with 25% of participants residing in federally subsidized housing; an Appalachian rural and suburban area of Knoxville, Tennessee with participants of varying socioeconomic backgrounds; and a small semi-rural city of Bloomington, Indiana where the majority of the sample was from working class backgrounds. There are 2 subscales on the measure: hostile attribution biases and aggressive response generation. For the purposes of this study, only the hostile attribution bias subscale was utilized.

During the assessment, pictures of three separate social scenarios were presented to the child while the administrator read aloud stories about the pictures. The children depicted in the pictures presented to participants and names in the social scenarios were matched to the gender of the child being assessed. Spanish speaking children were assessed by a native Spanish speaker with a Spanish version of the Dodge. After each scenario was presented the assessor asked the children one open-ended question regarding the interpretation of other's behaviors (e.g., Why do you think Todd hit you in the back?) (see Appendix). Child responses were probed for further elaboration if initial responses did not provide a clear



indication of the interpretation of other's behavior (i.e., accidental/justifiable, hostile). If the child still failed to provide a clear indication of intent, an additional probe was provided to elicit a response (i.e., was he being mean or not mean?). The assessor then proceeded to ask another open-ended question regarding what the child would do in response to other's behavior (e.g., what would you do about Todd after he hit you?).

Responses for questions 1a, 2a, and 3a (see Appendix B) were scored as 0 if the child responded 'don't know' or provided no response, 1 if the child interpreted the behavior as accidental/justifiable, and 2 if the child interpreted the behavior as hostile. The percent hostile attribution score was calculated by identifying the number of times children interpreted ambiguous social scenarios as hostile and dividing by the number of social scenarios in the measure. The percent hostile attribution score was used as a continuous variable to analyze children's hostile attribution biases. Higher percentages indicated greater tendencies to interpret other's behavior with hostile intent. The Dodge scores were computed across the 4 years of the study and standardized to determine the overall means and standard deviations of children's hostile attribution biases. In this study, reliability for the hostile attribution subscale was .71.

#### *Child Cognitive Functioning*

The *Peabody Picture Vocabulary Test Revised* (PPVT-R) (Dunn & Dunn, 1981) was used to assess one facet of children's cognitive development in the area of receptive language. The *PPVT-R* is an untimed, individually administered receptive language measure for children and adults ages 2.5 to 40. The assessment typically requires 15 to 20 minutes to administer. On each item of the *PPVT-R*, the administrator presents four black and white illustrations in a multiple choice format. The child is required to identify (verbally or

nonverbally) an appropriate picture that corresponds to an orally read stimulus word presented by the administrator. The *PPVT-R* is designed for use with native English speakers who can hear and see reasonably well. When the test is used in this manner, scores can be used as an academic aptitude test, given that vocabulary is a strong predictor of educational success. Children's scores are computed by subtracting errors from the total ceiling score. Authors of the *PPVT-R* reported internal consistencies from .61 to .88, with split-half reliability ranging from .60s to the .80s, and test- retest reliability from .70s to the .90s. The *Test de Vocabulario en Imagenes Peabody (TVIP)* was used to assess Spanish speaking children's receptive language (Dunn, Lugo, Padilla, & Dunn, 1986). Reliability on this measure ranged from .91 to .93 for preschool children. The 125 stimulus words on the *TVIP* came directly from its English counterpart, the *PPVT-R*. Scores from the *PPVT-R and TVIP* were computed across the 4 years of the study and standardized to determine the overall means and standard deviations of children's receptive language. For the purposes of this study, *PPVT-R* and *TVIP* standard scores were utilized and treated as continuous variables for further analysis.

### *Parental Depression*

Parental depression was assessed with the *Brief Symptoms Inventory (BSI)* (Derogatis & Melisaratos, 1983). The *BSI* was developed to assess psychological symptoms in adolescents and adults, and contains 53 items which investigate 9 symptom dimensions (Somatization, Obsession-Compulsion, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid ideation, Psychoticism) and three global distress indices (Global Severity Index, Positive Symptom Distress Index, and Positive Symptom Total). For

the purposes of this study, only the Depression dimension was used (i.e., items 9, 16, 17, 18, 35 and 50).

The *BSI* was individually administered by trained parent interviewers. Spanish speaking parents were administered a translated version of the *BSI* by a native Spanish speaker. The interview required approximately 8 to 12 minutes for administration. Parents were required to provide responses to items using a 4 point scale (i.e., 0=not at all, 1=a little bit, 2= sometimes/somewhat, 3= pretty much, 4= very much) that reflected how much discomfort the problem caused them during the past 6 months. The scores for each symptom dimension are computed by summing the values of all the items in that dimension and dividing by the number of items that were endorsed in that dimension. The computed raw scores are then converted to T scores and interpreted using a comparison to age-appropriate norms. The measure provides normative data for four different groups (i.e., nonpatient adults, adolescents 13-17, adult psychiatric outpatients, adult psychiatric inpatients). The adult nonpatient norms were based on 974 individuals (494 males and 480 females), 85% of the sample was Caucasian, and 60% were married. The mean age was 46. The authors found that the *BSI* had good internal consistency (.85 on the Depression dimension), test-retest reliability ( $r = .75$  to  $.94$ ), as well as construct validity. T scores from the depression subscale were computed and utilized for further analysis in this study. Parental depression was treated as a continuous variable in this study and reliability was .81.

### *Assessment of Outcome Constructs*

#### *Problem Behaviors and Social Skills*

Children's problem behaviors and social skills were assessed using the *Social Skills Rating System* (SSRS) (Gresham & Elliott, 1990), a widely used, empirically validated

instrument measuring social skills, problem behaviors and academic competence of children ages three to eighteen. The instrument is a multi-rater assessment used to identify social behavior problems that can later be targeted through interventions. There are preschool (from age 3-0), elementary (grades kindergarten to age 6), and secondary (grades 7 to 12) rating forms available for child, parent, and teacher reporting. The assessment can be administered individually or in a group setting and requires approximately 15 to 25 minutes for completion. The person administering the *SSRS* or respondent are required to read each of the 49 questions and circle the corresponding rating on a three-point scale according to how often a behavior occurs, 0 (Never), 1 (sometimes), 2 (very often). In the present study, scores from parent ratings on the *SSRS* subscales of Problem Behaviors and Social Skills Competence will be calculated. Scores will be combined across the 4 years of the study and standardized to determine the overall means and standard deviations of the children's behaviors. The standard scores from the *SSRS* social skills and problem behaviors subscales were used for further analyses.

The *SSRS* is supported by extensive research suggesting the instrument possesses adequate validity and reliability (Gresham & Elliott, 1990). The instrument was normed with 4,170 children, 1,027 parents and 259 teachers in the spring of 1988. Normative groups of males and females at the preschool, elementary and secondary grade levels are provided. The normative sample controlled for age, gender, race, geographic region, SES/parent education, and community size to match the U.S. Census Data in the year 1988. Findings support the reliability of the measure, with internal consistency as follows: Social Skills: teacher (.93 to .94), parent (.87 to .90); student (.83); Problem Behaviors: teacher (.82 to .86), parent (.73 to .87) and Academic Competence: teacher (.95). Test retest reliability is as

follows for Social Skills: teacher (.85), parent (.87), student (.68); Problem Behaviors: teacher (.84), parent (.65); Academic Competence, teacher (.93). Statistical analyses have also supported the measure's construct, criterion, and concurrent validity. In this study, reliability was as follows: problem behaviors (.68) and Social Skills (.88).

### *Aggression*

The *PBP-12* was used to assess children's aggression. The *PBP-12* was created by the principal investigators of the *Preschool Behavior Project* for use in this study (Kupersmidt & Bryant, 2001). The *PBP-12* contains 12 items that explore children's aggressive behaviors and was included in the Head Start teacher interview (see appendix). Teachers were requested to provide information regarding each child in the study's behavior in the classroom. Furthermore, teachers were asked to rate how often the child does each behavior (i.e., 1 = once a month or less, 2 = once a week, 3 = 2 to 4 times a week, 4 = once a day, 5 = many times a day). Teacher ratings were used to compute total scores. The PBP score is a summary score of the teacher's ratings divided by the 12 items on the measure. The PBP score was used for further analysis in the study and treated as a continuous variable. In this study, reliability for the *PBP-12* was .90.

### Data Analysis

Preliminary analyses were conducted to provide a description of the sample. Factors such as gender, race, and age were investigated. Means and standard deviations were computed from the *PBP-12* aggression, *SSRS* problem behaviors and social skills scales. ETV percentages of victimization, witnessing, exposure to severe violence, and exposure to mild violence were also computed. Severe violence exposure included items associated with fatality (i.e., attacked with a weapon, shot, shot at, seen a dead body, heard gunfire, seen

someone killed, sexual assault); while mild violence exposure included items not associated with fatality (i.e., chased, hit/slapped/punched, or threatened,.). All data were entered into SPSS 15.0 (SPSS Inc., 2005). Relevant variables were examined using a standardized process detailed in Tabachnick and Fidell (2001) prior to analysis for accuracy and all identification of potential outliers that could impact proceeding statistical analyses. Missing data were handled using a full information maximum likelihood approach (FIML) (Collins, Schafer, & Kan, 2001; Enders & Peugh, 2004). FIML uses the available data to generate the parameter estimates. In FIML, the missing data points are not replaced with actual values, instead, the observed portion of the data and different patterns of missingness are accounted for in the estimation process.

The research questions in this study were investigated by using path analysis models. Path analysis advanced statistical analyses were performed using the statistical software program Mplus Version 5.0. Path analysis is a method of testing several sets of multiple regressions in a single simultaneous analysis (Schumacker & Lomax, 1996). Rather than evaluating these effects in isolation, modern path analysis allows a researcher to examine the effect size and significance of each path coefficient (i.e., regression coefficient) as well as the overall fit of the way people responded to the theoretical model (i.e., model-data fit). The term modern path analysis is used to differentiate earlier version of path analyses that were simply combinations of independent multiple regression tests.

#### Figure Interpretation

The results from all the models are provided in a path diagram. A basic description for interpreting this type of graphical model is described below. Generally, rectangles represent information directly measured (manifest). Although not included in this model, it

is customary for circles to represent latent variables or unobserved variables that are not directly measured. All dependent variables are expected to have some level of measurement error; however, for the sake of simplicity, error terms were not included in the path diagrams. The relationships or paths between the variables and their corresponding error terms are specified through a series of directional lines. These lines indicate that there is a direct relationship between two variables. Path coefficients are typically assigned to each line corresponding to the strength of effect and standardized estimates are provided next to each line. Finally, correlations are represented through double-headed arrows between two variables.

## CHAPTER 4

### RESULTS

#### Descriptive Statistics

Descriptive statistics for all of the variables examined in this study are provided in Table 2. A majority of the children in the sample were between the ages of 4 and 5 ( $n = 225$ ). A little over half of the children were female and there were a large (74%) proportion of African-American and Latino children in the sample. Over half of the children resided in a rural area and most had an annual family income of less than \$15,000. The majority of the children did not have any exposure to violence ( $n = 163$ ).

The first aim of this study was to document the rates and types of violence exposure among a preschool population in central North Carolina. Descriptive statistics for types (i.e., severe and non-severe) and modality (i.e., victim, witness) of children's violence exposure are listed in Table 2. Parent reports of children's violence exposure indicated that 42% ( $n=119$ ) of the sample was exposed to at least one incident of community violence. Children were mainly exposed to violence as witnesses, as only 16 children in the study were victims of violence. Furthermore, 12 of those 16 children were also witnesses of violence, indicating that children who are victimized by violence also witness violence. Examination of the severity of children's violence exposure indicated there were no children who were victims of severe violence. However, children who witnessed violence were exposed to both severe and mild violence. Specifically, 1 in 5 children in the study heard gunfire, 11% of the



children witnessed someone being threatened, 13% saw some hit, slapped, or punched, while 9% of the children witnessed a parent being hit/slapped/or punched. Furthermore, 7% of the children were told about someone getting shot and 11% were told about someone getting killed. Examination of the frequency of children’s ETV indicated that 22% of the children were exposed to one form of violence, while 20% had two or more exposures to violence.

Table 2

*Descriptive Statistics for ETV Measure and Variables in the Path Models (n=282)*

Summary of ETV Items	Victim		Witness	
	n	%	n	%
Severe Violence	0	0	81	29
Weapon Attack	0	0	4	1
Shot at	0	0	1	<1
Shooting	0	0	2	<1
Told about a shooting	-	-	19	7
Sexual Assault	0	0	-	-
Told about Sex Assault	-	-	5	2
Heard Gunfire	-	-	53	19
Committing suicide	-	-	-	-
Told about a suicide	-	-	4	1
Someone getting killed	-	-	1	<1
Told about a killing	-	-	30	11
Mild Violence	16	6	57	20
Chases	3	1	10	4
Threats	4	2	30	11
Hit/slapped/punched	13	5	36	13
Parent hit/slapped/punched	-	-	25	9
Found dead body	-	-	1	<1
Frequency of ETV	n	%		
1 exposure	62	22		
2 exposures	21	8		
3 exposures	15	5		
4 or more exposures	21	8		

Variables in Path Models	Children in Study n = 282		Total ETV (≥ 1 exposure) n = 119		Witness (≥ 1 exposure) n = 113		Victim (≥ 1 exposure) n = 16	
	n	%	n	%	n	%	n	%
<i>Categorical Variables</i>								
Gender								
Male	131	46	50	42	47	42	9	56
Female	151	54	69	58	66	58	7	44
Ethnicity								
Cauc/Other	74	26	41	35	40	35	5	31
Latino	80	28	12	10	12	11	1	6
Afr Amer	128	45	66	56	61	54	10	63
Geog Reg								
Urban	120	43	50	42	47	42	6	37
Rural	162	57	69	58	66	58	10	63
Income								
< \$15,000	150	53	72	61	68	60	7	47
<i>Continuous Variables</i>								
	<i>Freq</i>	<i>%</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>Min</i>	<i>Max</i>	
<i>Control</i>								
Age			282	4.33	.49	2.95	5.13	
<i>Predictor</i>								
Total ETV	119	42	282	.85	1.34	0	7	
Victimization	16	6	282	.07	.31	0	2	
Witnessed	113	40	282	.78	1.25	0	7	
<i>Mediating</i>								
Par Depress			281	49.75	8.75	42	76	
Hostile			216	0.49	0.38	0	1	
Emotion			216	17.29	3.94	7	24	
Cognitive			272	86.02	13.86	40	120	
<i>Outcome</i>								
Aggression			282	1.66	.71	1	4.42	
Prob Beh			282	97.28	11.52	85	137	
Social Skills			279	100.56	15.63	57	130	

### *Hypotheses 1: ETV, Race, and Gender*

*The rate of exposure to community violence (i.e., total exposure, victimization, witnessing) in preschool children will be significantly higher for males and children of racial minorities.*

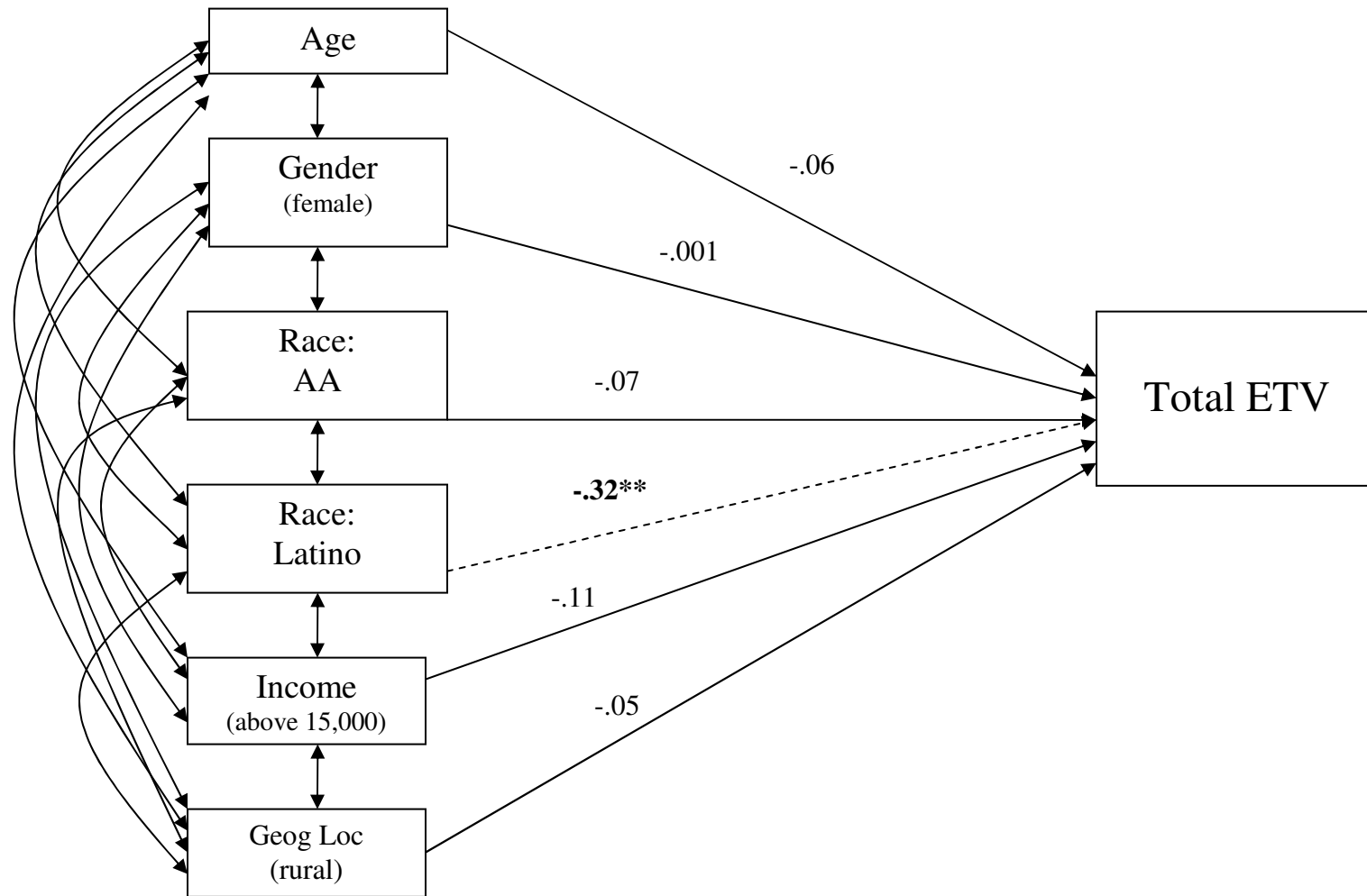
The first research question examined how rates of community violence exposure (i.e., total exposure, victimization, and witnessing) differed as a function of preschool children's race and gender. The rate of preschool children's community violence exposure was

hypothesized to be higher in males and children of racial minorities. This research question was analyzed with a path analytic technique. In the first path model (see Figure 1), race, gender and other demographics (i.e., annual family income, age, and geographic location) were the predictor variables. The continuous outcome variable in the model was total violence exposure. The total violence exposure variable is a summary score which includes all ETV items. The second model explored different demographic factors associated with victimization and witnessing of violence. In the second path model (see Figure 2), race, gender and other demographics (i.e., annual family income, age, and geographic location) were the predictor variables.

Results from the first path model (see Table 3) indicated that the relationship between children's total exposure to violence and gender was statistically non-significant ( $\beta = -.001, p > .05$ ). Therefore, there is no evidence that suggests children's total exposure to violence differs by gender. However, there was a statistically significant relationship between race (Latino) and children's total ETV ( $\beta = -.32, p < .01$ ), but not in the hypothesized positive direction. Furthermore, parent reports of total ETV indicated that Latino children had statistically significantly less total violence exposure than children in the reference group (i.e., Caucasian, Biracial, and other races). Results from the second path model (see Table 3) did not indicate statistically significant relationships between children's gender and their exposure to violence as witnesses ( $\beta = .02, p > .05$ ) or victims ( $\beta = -.04, p > .05$ ). This finding indicates that there is no evidence suggesting children's victimization or witnessing of community violence differs as a function of gender. Yet, again, there was a statistically significant relationship between race (Latino) and children's witnessing of violence, but not in the hypothesized positive direction ( $\beta = -.30, p < .01$ ). Beta coefficients

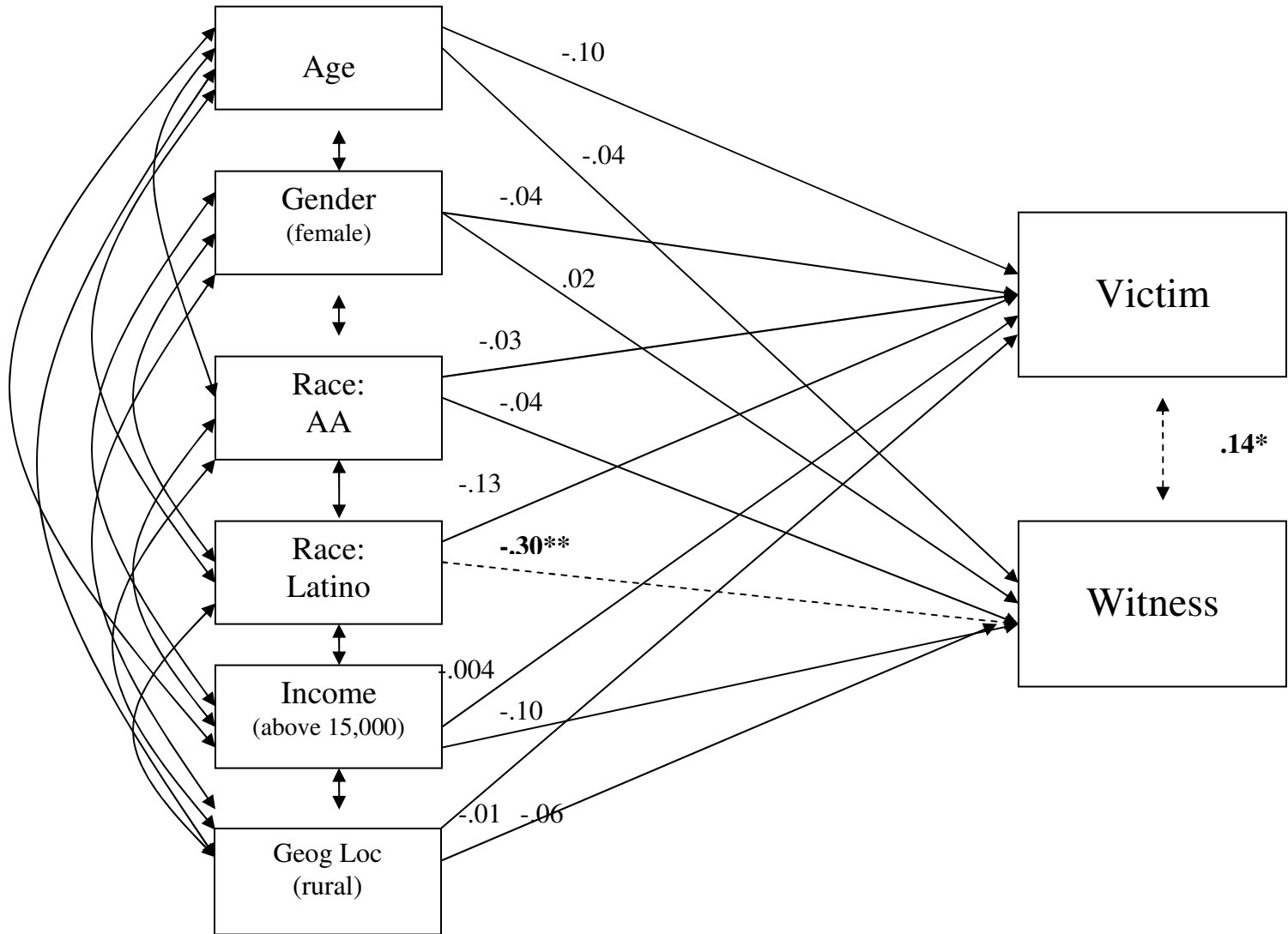
for all predictor and demographic variables included in the first and second path models are listed in Table 3. Overall, findings from these path models do not support the hypothesis that males or children of racial minorities experience exposure to violence (i.e., total, victimization, or witnessing) at statistically significantly higher rates than females or Caucasian children.

Figure 1 Path Model for Research Question 1a



Note. Statistically significant paths are designated by dashed lines.

Figure 2 Path Model for Research Question 1b



Note. Statistically significant paths are designated by dashed lines.

Table 3

*Standardized Path Coefficients for Figures 1 and 2*

<i>Path Model</i>	<i>Outcome Variables</i>		
	<i>Total ETV</i>	<i>Witness</i>	<i>Victim</i>
	$\beta$	$\beta$	$\beta$
<i>Total ETV</i>			
Age	-.06		
Gen (fem)	-.001		
Race Latino	-.32**		
Race AA	-.07		
Inc (>15,000)	-.11		
Geog (rural)	-.05		
<i>Vic/Wit Model</i>			
Age		-.04	-.10
Gen (fem)		.02	-.04
Race Latino		-.30**	-.13
Race (AA)		-.04	-.03
Inc (>15,000)		-.10	-.004
Geog (rural)		-.06	-.01

*Hypothesis 2: ETV and Children's Behavioral and Social Functioning*

*Children's exposure to community violence (i.e., total exposure, victimization, witnessing) will significantly predict aggression, problem behaviors, and social skills deficits in preschool children.*

Hypothesis 2 explored suggested that children's violence exposure (i.e., total violence exposure, victimization, witnessing) would predict aggression, problem behaviors, and social skills in children. Bivariate correlations for predictor, mediating, and outcome variables in the path models are provided in Table 4. Total ETV was positively correlated with victimization, witnessing, parental depression, problem behaviors, and aggression. Victimization was positively correlated with witnessing, parental depression, and aggression.

Witnessing violence was positively correlated with parental depression and problem behaviors. Parental depression was positively correlated with problem behaviors and negatively correlated with social skills. Children’s emotion recognition was strongly correlated with cognitive ability. Additionally, problem behaviors were negatively correlated with social skills.

Table 4

*Bivariate Correlations for Predictor, Mediating, and Outcome Variables in the Path Models*

	ETV	Vic	Wit	Dep	Emot	Host	Cog	Prob	Social
Tot ETV	----								
Victim	<b>.390**</b>	----							
Witness	<b>.974**</b>	<b>.171**</b>	----						
Par Dep	<b>.252**</b>	<b>.157**</b>	<b>.229**</b>	----					
Emotion	.130	.059	.124	.102	----				
Hostile	.000	-.007	.001	.12	.063	----			
Cog Ab	.104	.107	.085	.125*	<b>.399**</b>	-.058	----		
Problem	<b>.131*</b>	.058	<b>.126*</b>	<b>.234**</b>	-.007	-.037	.077	----	
Social	.054	-.003	-.057	<b>-.199**</b>	.081	-.106	.080	<b>-.310**</b>	----
Aggress	<b>.124*</b>	<b>.230**</b>	.076	-.007	-.005	-.070	.079	.110	.035

Note. \* $p < .05$  \*\* $p < .01$

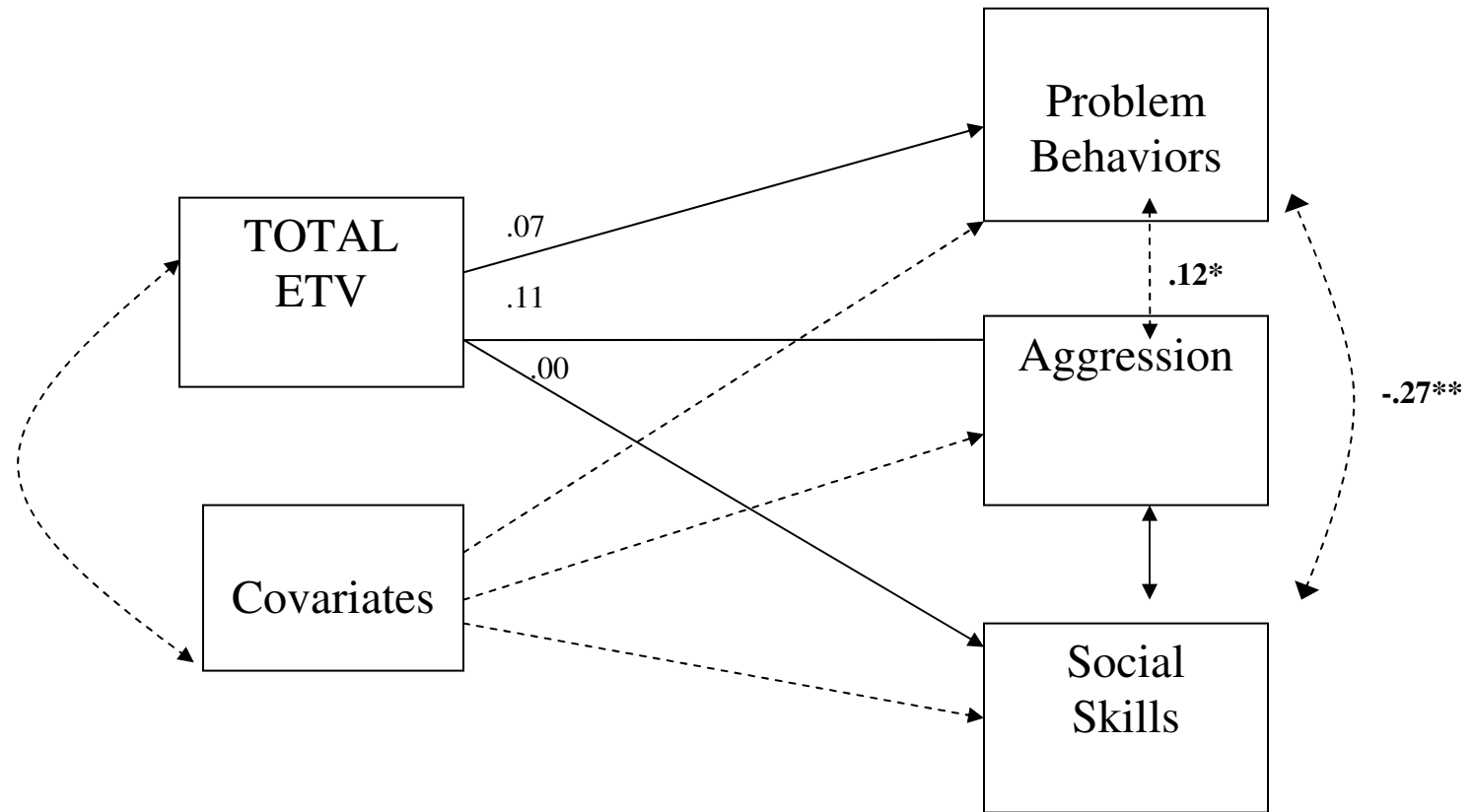
*Total ETV and Negative Outcomes*

In the third Path Model (see Figure 3) total violence exposure was the predictor variable and children’s aggression, problem behaviors, and social skills were the outcome variables. Covariates were also entered into the model for outcome variables. Results did not indicate a statistically significant relationship between total ETV and children’s aggression ( $\beta = .11, p > .05$ ), problem behaviors ( $\beta = .07, p > .05$ ), or social skills deficits ( $\beta = .00, p > .05$ ). Investigation of  $R^2$  indicated that the total ETV direct effect model explained 9% of the variance for children’s problem behaviors, 6% of the variance in aggression, and 12% of the variance in social skills. In this model,  $R^2$  cannot be attributed to ETV and was due to covariates mainly, given that none of the paths between ETV and outcomes were statistically



significant. Overall, findings from this model *did not support* hypothesis 2, given that there was not a statistically significant relationship between total ETV and children's outcomes.

Figure 3 Path Model for Research Question 2a

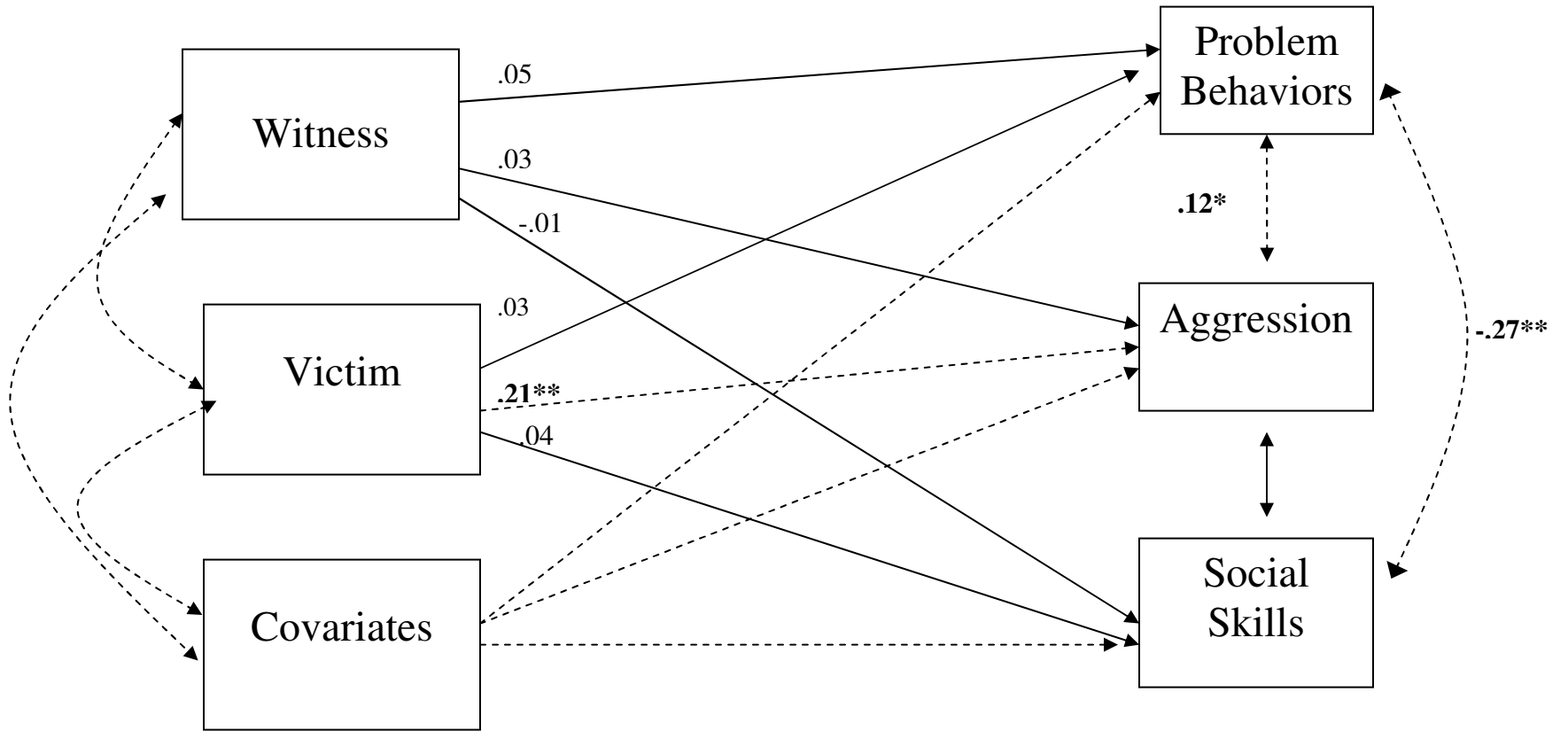


Note. Statistically significant paths are designated by dashed lines. For simplicity, only paths between predictor and outcome variables are provided in the figure. Statistically significant paths between covariates and outcome variables, as well as all other statistically nonsignificant path coefficients are listed in Table 5

### *Witnessing/Victimization by Violence and Negative Outcomes*

In the fourth path model (see Figure 4) victimization and witnessing were the predictor variables and children's aggression, problem behaviors, and social skills were the outcome variables. Standardized path coefficients for demographic and predictor variables are provided in Table 5. Results of the path analysis indicated that there was not a statistically significant relationship between victimization and children's problem behaviors ( $\beta = .03, p > .05$ ) or social skills deficits ( $\beta = .04, p > .05$ ), above and beyond other demographic variables. The relationship between victimization and aggression in children was statistically significant ( $\beta = .21, p < .001$ ). Furthermore, children who were victimized by violence were more likely to be rated by their teachers as having aggressive behaviors than children who were not victimized by violence. However, there was not a statistically significant relationship between witnessing community violence and children's aggression ( $\beta = .03, p > .05$ ), problem behaviors ( $\beta = .05, p > .05$ ), or social skills deficits ( $\beta = -.01, p > .05$ ). Investigation of  $R^2$  indicated that victimization/witnessing direct effects model, explained 9% of the variance for children's problem behaviors, 9% of the variance in aggression, and 12% of the variance in social skills. Overall, these findings *partially* support hypothesis 2, given the statistically significant relationship between victimization and children's aggression, over and above other outcome and demographic variables.

Figure 4 Path Model for Research Question 2b



Note. Statistically significant paths are designated by dashed lines. For simplicity, only paths between predictors and outcome variables are provided in the figure. Statistically significant paths between covariates and outcome variables, as well as all other statistically nonsignificant path coefficients are listed in Table 5

Table 5

*Standardized Path Coefficients for Figures 3 and 4*

Predictors	Outcomes		
	<i>Prob Beh</i> $\beta$	<i>Aggression</i> $\beta$	<i>Social Skills</i> $\beta$
Total ETV Model			
Total ETV	.07	.11	.002
Age	.08	-.03	.08
Gender (fem)	.11*	-.17**	-.07
Race (Latino)	-.23**	-.02	.21**
Race (AA)	-.01	.08	.04
Income >15,000	-.11	.01	-.01
Geog Loc-rural	.09	-.06	-.23**
Vic/Wit Model			
Victimization	.03	.21**	.04
Witnessing	.05	.03	-.01
Age	.08	-.02	.08
Gender (fem)	.11*	-.16**	-.07
Race (Latino)	-.23**	-.02	.22**
Race (AA)	-.02	.08	.04
Income >15,000	-.11	.00	-.01
Geog Loc-rural	.09	-.07	-.23**
$R^2$			
	<i>Prob Beh</i>	<i>Aggression</i>	<i>Social Skills</i>
Total ETV Model	.09*	.06*	.12**
Vic/Wit Model	.09*	.09*	.12**

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

### Rationale for Mediation Analyses

Baron and Kenny's (1986) *causal steps strategy* is the most commonly used approach for determining the presence of mediation in psychological studies. Their definition of mediation initially requires that the predictor variable be statistically significantly related to the outcome variable in order to test for mediation. Subsequently, the predictor variable must be statistically significantly related to the mediators; the mediators must be statistically significantly related to the outcomes; and the overall relationship between the predictor and

outcome variable must be statistically significantly decreased by the inclusion of the mediating variable, for mediation to occur (Baron & Kenny, 1986). Despite the popularity of this approach in the literature, many researchers dispute the necessity for the presence of direct effects between predictor and outcome variables when testing for mediation (Collins, Graham, & Flaherty, 1998; Judd & Kenny, 1981; MacKinnon, 1994, 2000; MacKinnon, Krull, & Lockwood, 2000; Shrout & Bolger, 2002). Preacher and Hayes (in press) proposed that the investigation of multiple mediation (i.e., models with more than one mediating variable) does not require direct effects between predictor and outcome variables and should instead involve an (1) investigation of the total indirect effect and (2) testing specific indirect effects associated with each proposed mediator. However, they do not require the presence of a significant total indirect effect in order to investigate specific indirect effects, and assert that it is entirely possible to identify specific indirect effects in the absence of a statistically nonsignificant total indirect effect.

Researchers investigating the role of intervening variables provide theoretical support for testing mediation in the absence of direct effects. Collins et al. (1998) presented an alternative to the traditional approach to mediation and asserted that mediation involves a chain reaction between variables. They referred to this as a “domino approach” in which the predictor variable causes a change in a mediator which, in turn, causes a change in the outcome variable. The mediation process is triggered by the independent variable; however, the proximal cause of the outcome variable is triggered by the mediator variable as opposed to the predictor variable. Shrout and Bolger (2002) discussed proximal versus distal mediation processes as additional support for investigating indirect effects even if a causal relationship between the predictor and outcome variable is not first established. They

asserted that when an independent variable is a strong predictor of a dependent variable, one would expect that a change in the predictor would lead to changes in the value of outcome variables as well. However, when the causal process becomes more distal, the size of the effect typically decreases and is more likely to be (a) transmitted through links in causal chain, (b) affected by competing causes, or (c) affected by random factors (Shrout & Bolger, 2002). Consequently, they suggested a plausible mediational model may be more powerful than simple bivariate associations in determining the impact of predictors on outcomes variables. Shrout and Bolger suggested it is ill-advised to defer testing mediation until a bivariate association is established between the predictor and outcome variables. Ultimately, they recommended that mediational tests should be conducted under the strength of theoretical arguments as opposed to the statistical test of predictor on outcome variables.

For the reasons discussed above and the theoretical support presented in the literature review, mediational analyses were conducted to determine the role of exposure to violence on children's social and behavior outcomes via the mediating variables of parental depression and social cognition, despite the absence of direct effects.

#### Mediating Role of Parental Depression and Social Cognition

##### *Hypothesis 3: Parental Depression*

*The relationship between preschool children's exposure to community violence (i.e., total exposure, victimization, witnessing) and problem behaviors/aggression/social skills deficits will be mediated by parental depression.*

##### *Hypothesis 4: Children's Social Cognition*

*The relationship between preschool children's exposure to community violence (i.e., total exposure, victimization, witnessing) and problem behaviors/aggression/social skills deficits*

*will be mediated by children's social cognition (i.e., emotion recognition, hostile attribution biases, and cognitive ability).*

Mediating variables of children's violence exposure and negative outcomes were explored in Research Questions 3 and 4. The fifth path model of this study (see Figure 5) included predictor, mediating, outcome variables, and covariates. Total exposure to violence was the predictor variable; parental depression, emotion recognition, hostile attribution biases, and cognitive ability were the mediating variables; and children's aggression, problem behaviors, and social skills were the outcome variables. Covariates were entered into the model for all mediating and outcome variables. The sixth path model investigated the role of mediating factors between different modalities of violence exposure (i.e., victimization and witnessing) and children's negative outcomes. In this model (see Figure 6), witnessing and victimization were the predictor variables; parental depression, emotion recognition, hostile attribution bias, and cognitive ability were the mediating variables; and children's aggression, problem behaviors, and social skills were the outcome variables. All covariates were entered into the model for mediating and outcome variables. Table 2 provides the means and standard deviations for the control, independent, and dependent variables used in the path models.

#### Results for Total ETV Mediation Path Model

The mediation model for total violence exposure attempted to examine the mediating roles of parental depression and children's social cognition on child outcomes. Results from this path model did not indicate any significant direct effects between ETV and child outcomes of problem behaviors ( $\beta = .02, p > .05$ ), social skills ( $\beta = .03, p > .05$ ), or aggression ( $\beta = .11, p > .05$ ). However, total ETV was statistically significantly predicted



higher levels of parent reported depression ( $\beta = .22, p < .01$ ). Analysis of the mediator variables indicated that the relationships between parental depression and children's problem behaviors ( $\beta = .20, p < .01$ ) and social skills ( $\beta = -.18, p < .01$ ) were statistically significant. Specifically, parents with higher levels of depression had children with statistically significantly lower social competence and statistically significantly more problem behaviors than children of parents who did not report depression. Path coefficients for all control variables included in Figures 5 and 6 are provided in Table 6.

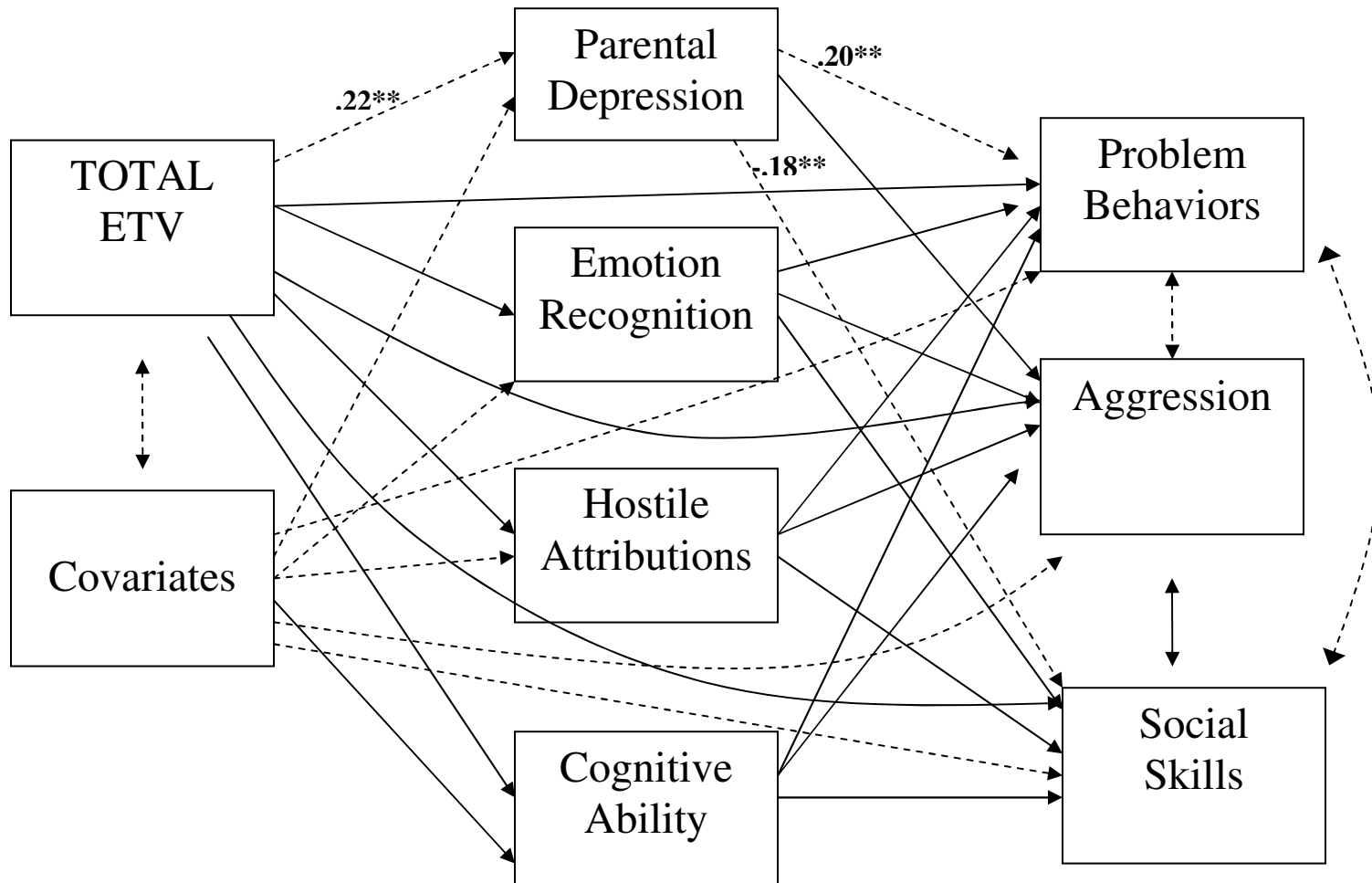
Based on the suggestions of Preacher and Hayes (in press), tests of total indirect effects and specific indirect effects were conducted to determine the influence of proposed mediators. Total indirect effects is the sum of all the indirect paths between ETV and outcome; whereas, specific indirect effects are the specific indirect paths from ETV to outcome for an individual mediating variable. The sum of the indirect effects for the total ETV mediation model ( $.05, p < .05$ ) was statistically significant for the problem behaviors outcome. However, the total indirect effects for social skills and aggression were statistically nonsignificant (see Table 7). Given Preacher and Hayes suggestion that total indirect effects do not need to be present in order to investigate the presence of mediation with specific indirect effects, further analyses were conducted. The indirect effect of total ETV on child social skills through parental depression ( $-.04$ ) was statistically significant ( $p < .05$ ), albeit small. Therefore, parental depression mediated the relationship between children's ETV and their social skills. Similarly, the indirect effect of total ETV on children's problem behaviors via parental depression ( $.05$ ) was statistically significant ( $p < .05$ ), indicating that parental depression mediated the relationship between total ETV and children's problem behaviors.

However, parental depression did not mediate the relationship between total ETV and aggression, given that the indirect effect (-.004) was not statistically significant ( $p > .05$ ).

The specific indirect effects of total ETV on the outcome variables via the three social cognition mediating variables were all statistically nonsignificant. Indirect effects are provided in Table 7. These findings suggest that children's emotion recognition, hostile attribution biases, and cognitive ability did not mediate the relationship between total ETV and child outcomes. Results from the fifth path model indicated that hypothesis 4 was not supported, given that none of the specific indirect effects between total ETV and child outcomes via the social cognitive mediators were statistically significant.

Investigation of  $R^2$  indicated that the total ETV indirect effects model, explained 14% of the variance for children's problem behaviors, 7% of the variance in aggression, and 16% of the variance in social skills. Overall, results from the Total ETV mediation model partially support hypothesis 3, given the statistically significant specific indirect effects between total ETV, parental depression, and social skills/problems behaviors.

Figure 5 Mediation Path Model for Research Question 3a and 4a



Note. Statistically significant paths are designated by dashed lines. For simplicity, only statistically significant paths between predictors and outcomes, predictors and mediators, and mediators and outcomes are provided in the figure. Statistically significant paths between covariates, mediators, and outcome variables, as well as all other statistically nonsignificant path coefficients are listed in Table 6

Table 6

*Standardized Path Coefficients for Figures 5 and 6*

<i>Mediation Model</i>	Outcomes						
	Dep	Emot	Hostile	Cog	Prob	Aggres	Social
	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$	$\beta$
<b>Total ETV Model</b>							
Total ETV	-.22**	-.05	.10	.05	.02	.11	.03
Age	-.04	-.06	.20**	.11	.10	-.02	.05
Gender (fem)	.042	.00	.05	-.01	-.11	-.17**	-.07
Race (Latino)	-.17*	-.18**	-.23**	-.30**	-.22**	-.02	-.20**
Race (AA)	-.17*	-.14	-.06	-.23**	.02	.08	.02
Income (>15,000)	-.12	.15	.07	-.05	-.07	.02	-.04
Geog Loc	.00	-.05	.14	-.12	.10	-.05	-.22**
Par					.20**	-.02	-.18**
<b>Depression</b>							
Emot Recog					-.05	-.04	.05
Host Bias					-.10	-.07	-.04
Cog Ability					.03	.08	.07
<b>Victim/Wit Model</b>							
Victimization	.12*	.05	-.02	.09	.00	.21**	.05
Witnessing	.17**	.09	-.04	.02	.02	.03	.02
Age	-.04	.20**	.06	.11	.10	-.02	.06
Gender (fem)	.05	.05	.00	-.01	.11	-.16*	-.06
Race (Latino)	-.18*	-.18*	-.23**	-.30**	-.22**	-.03	.20**
Race (AA)	-.17*	-.14	-.06	-.23**	.02	.08	.02
Income (>15,000)	-.12*	.15*	.07	-.05	-.07	.01	-.04
Geog Loc	.00	-.06	.14	-.12	.10	-.05	-.22**
Par Depress					.21**	-.03	-.18**
Emot Recog					-.05	-.04	.04
Hostile Bias					-.10	-.07	-.04
Cog Ability					.03	.06	.07
<b>R<sup>2</sup></b>							
	Dep	Emot	Hostile	Cog	Prob	Aggres	Social
Total ETV Model	.11**	.13**	.06	.12**	.14**	.07*	.16**
Vic/Wit Model	.11**	.13**	.06	.12**	.14**	.10**	.16**

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

Table 7

*Total Indirect Effects and Specific Indirect Effects for Mediation Path Models*

Indirect Paths	Outcomes					
	<u>Problem Behaviors</u>		<u>Aggression</u>		<u>Social Skills</u>	
	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>	<i>Estimate</i>	<i>SE</i>
Total ETV Model						
<i>Total Indirect</i>	.05*	.02	-.001	.02	-.03	.02
<i>Specific Indirect Effects</i>						
ETV → Par Depress	.05*	.02	.00	.01	-.04*	.02
ETV → Emotion	-.01	.01	.00	.01	.00	.01
ETV → Hostile	.00	.01	.00	.01	.00	.00
ETV → Cognitive	.00	.00	.00	.01	.00	.01
Vic/Wit Model						
<i>Total Indirect</i>						
VIC	.03	.02	.001	.01	-.01	.02
WIT	.04	.02	-.01	.01	-.03	.02
<i>Specific Indirect Effects</i>						
VIC → Par Depress	.03	.01	.00	.01	-.02	.01
VIC → Emot Recog	.00	.00	.00	.01	.00	.00
VIC → Host Bias	.00	.01	.00	.00	.00	.00
VIC → Cognitive	.00	.01	.01	.01	.01	.01
WIT → Par Depress	.04*	.02	-.01	.01	-.03*	.02
WIT → Emotion	.00	.01	.00	.01	.00	.01
WIT → Host Bias	.00	.01	.00	.01	.00	.00
WIT → Cognitive	.00	.00	.00	.00	.00	.00

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

### Results for Witness/Victim Mediation Path Model

Results from this path model indicated a statistically significant direct effect between victimization and aggression in preschool children ( $\beta = .21, p < .001$ ). There were no statistically significant direct effects between victimization or witnessing violence and children's problem behaviors or social skills. However, children's ETV through witnessing ( $\beta = .17, p < .01$ ) and victimization ( $\beta = .12, p > .05$ ) was statistically significantly associated with higher levels of parent reported depression ( $\beta = .22, p < .01$ ). Analysis of the mediator variables indicated that parental depression was statistically significantly related to problem behaviors ( $\beta = .21, p < .01$ ) and social skills ( $\beta = -.18, p < .01$ ). Specifically, parents with higher levels of depression were more likely to have children with statistically significantly lower social competence and statistically significant more problem behaviors than children whose parents did not report depression.

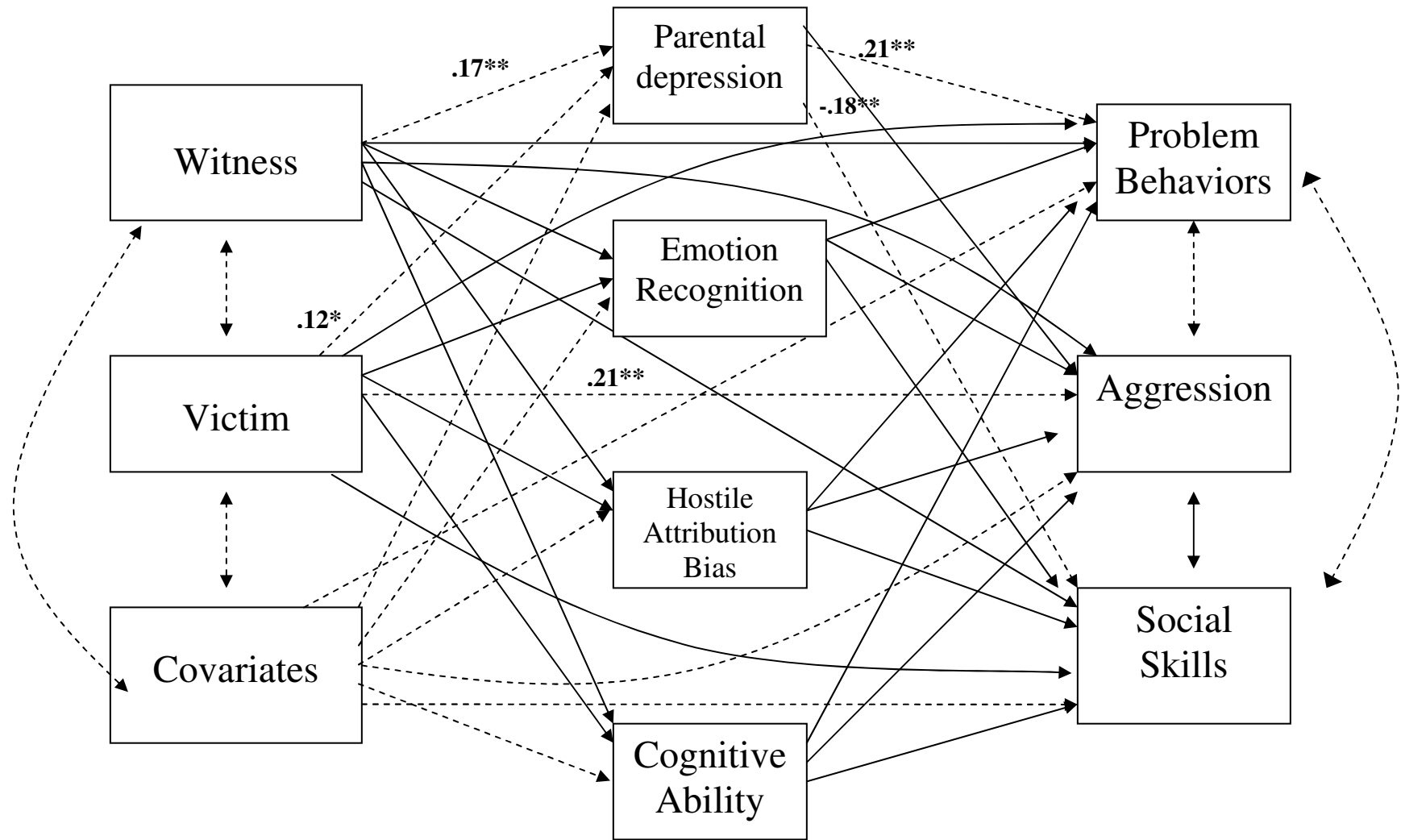
Tests of total indirect effects and specific indirect effects were conducted to determine the influence of proposed mediators. Total indirect effects is the sum of all the indirect paths between ETV and outcome; whereas, specific indirect effects are the specific indirect paths from ETV to outcome for an individual mediating variable. All of the total indirect effects for the victim/witnessing mediation model were statistically non-significant. Further tests of specific indirect effects were again conducted to determine the influence of proposed mediators. Results indicated an indirect effect of witnessing violence on child behavior problems and social skills via parental depression. Both the indirect effect of witnessing violence on child social skills via parental depression ( $-.03$ ) and the indirect effect of witnessing violence on children's problem behaviors via parental depression ( $.04$ ) were statistically significant ( $p < .05$ ). The indirect effect between witnessing and child aggression

via parental depression (-.006) was not statistically significant ( $p > .05$ ). In contrast to witnessed violence, none of the indirect effects between victimization and child outcomes via parental depression were significant ( $p > .05$ ), indicating that parental depression did not mediate the relationship between victimization and children's problem behaviors, social skills, or aggression.

The specific indirect effects of victimization/witnessing on the outcome variables via the three social cognitive mediating variables were all statistically non-significant. Indirect effects are provided in Table 7. These findings suggest that children's emotion recognition, hostile attribution biases, and cognitive ability did not mediate the relationship between victimization/witnessing and child outcomes. Results from the sixth path model indicated that hypothesis 4 was not supported, given that none of the specific indirect effects between victimization/witnessing and child outcomes via the social cognitive mediators were statistically significant.

Investigation of  $R^2$  indicated that the victimization/witnessing indirect effects model, explained 14% of the variance for children's problem behaviors, 10% of the variance in aggression, and 16% of the variance in social skills. Overall, results from the victimization/witnessing mediation model partially support hypothesis 3, given that there were statistically significant specific indirect effects between witnessing, parental depression, and social skills/problems behaviors.

Figure 6 Mediation Path Model for Research Question 3b and 4b



Note. Statistically significant paths are designated by dashed lines. For simplicity, only statistically significant paths between predictors and outcomes, predictors and mediators, and mediators and outcomes are provided in the figure. Statistically significant paths between covariates, mediators, and outcome variables, as well as all other statistically nonsignificant path coefficients are listed in Table 6



## CHAPTER V

### DISCUSSION

Given the minimal research exploring young children's ETV, this study attempted to document the rate and types of preschool children's community violence exposure. The study was conducted to achieve four main objectives. First, the study attempted to explore the relationship between individual child demographics and preschool children's ETV. Specifically, it examined whether rates of violence exposure differed as a function of preschool children's race and gender. Second, the study explored the association of exposure to violence with preschool children's early behavior problems, aggression, and social skills. Additionally, the study explored the role of potential mediators that explain the relationship between violence exposure and preschool children's functioning. Specifically, this study investigated the role of parental depression and children's social cognition as potential mediators of negative social and behavioral outcomes in young children with ETV.

The current study explored these questions by analyzing data from the *Preschool Behavior Project*, a social and emotional early intervention project which strived to reduce problem behaviors of Head Start children residing in central North Carolina. The project was conducted at the Frank Porter Graham Child Development Institute from 2001 to 2006 and was part of *The Head Start Quality and Mental Health Consortium* which was funded by The Head Start Bureau and the Administration for Children Youth and Families Commissioner's Office of Research and Evaluation. In recent years, more funding and attention has been

allocated to early intervention research and intervention programs. This study utilized data from an early intervention program in an attempt to provide a better understanding of preschool children's risk factors and to identify possible mechanisms through which children's ETV produces negative outcomes.

#### Description of Children's Exposure to Violence

The majority of community violence research has focused on children living in inner-city locations. Despite having lower rates of violence exposure, findings from this study suggest that children living outside of inner cities are not spared from exposure to community violence, as 42% of children were exposed to at least one incident of violence and 22% were exposed to 2 or more incidents of violence. Preschool children were mainly exposed to violence as witnesses. Only a small proportion of the children experienced victimization by mild violence (6%) and no children were victims of severe violence. Children in this study witnessed severe (e.g., hearing gunshots) and less severe violence (e.g., seeing someone threatened, seeing someone hit, slapped or punched) in their communities. Notably, parents reported that their children 'heard gunfire' more than any other incident of violence exposure, with 1 in 5 children hearing gunshots in their communities. This finding indicates that children are burdened by growing up in dangerous and violent communities that expose them to risk of developing negative outcomes associated with ETV.

#### Findings

Findings from this study provided partial support for the hypotheses. Rates of children's total ETV, witnessing, and victimization of violence did not differ as a function of children's race and gender. Children's total exposure to violence and witnessing did not statistically significantly predict problem behaviors, aggression, or social skills, after

accounting for other demographic variables. However, victimization by violence predicted aggression in preschool children. Furthermore, path analyses supported the hypothesis that violence exposure indirectly affects children's social competence and problem behaviors via parental depression. Specifically, ETV was associated with greater depression in parents, and depressed parents were more likely to have children with lower levels of social competence and higher levels of problem behaviors. Children's social cognition did not mediate the relationship between children's ETV and negative outcomes. Findings from each of the four research questions are discussed in detail below.

#### *Hypothesis 1: ETV, Race, and Gender*

The first research question examined whether rates of community violence exposure differed as a function of preschool children's race and gender. The rate of preschool children's community violence exposure was hypothesized to be significantly higher in males and children from ethnic and racial minorities.

#### *Previous Empirical Support*

The majority of current literature investigating children's ETV has examined individual child characteristics that increase the risk of violence exposure. Despite some discrepancies in the literature, most research indicated that males are at heightened risk for violence exposure when compared to females (Cooley-Quile et al., 1995; Farrell & Bruce, 1997; Fitzpatrick & Boldizar, 1993; Fitzpatrick, 1997; Schwab-Stone et al., 1999). However, there are some studies that negated these findings and suggested that there is no relationship between gender and violence exposure (Martin et al., 1995; Martinez & Richters, 1993; Shahinfar, et al., 2000). Given that the majority of ETV research focused on school aged

children and adolescents, it is unclear if the relationship between gender and ETV remain consistent when investigating young children's ETV.

Similar to children's gender, research has indicated that race often increases a child's risk for violence exposure. Furthermore, the literature indicated that children of racial and ethnic minorities experienced higher rates of violence exposure, especially African American and Hispanic children (Anderson, et al., 2001; Boldizar, 1993; Fitzpatrick, 1997; Fitzpatrick & Boldizar, 1993; Kuo, et al., 2000). While there is ample research on ETV with older children residing in inner-city locales, there is limited information regarding the role of race and gender with younger, preschool populations who reside outside of inner cities. Given the lack of research with younger populations, additional research examining the role of gender and race in preschool children's ETV was warranted.

#### *Findings and Interpretation*

The hypothesis that children's violence exposure significantly differs as a function of children's race and gender was not fully supported by this study. Boys and girls were equally susceptible to violence exposure (i.e., total ETV, witnessing, and victimization). This finding supported previous research suggesting that younger children's gender does not play as crucial of a role in their risk for violence exposure as it does with older children (Shahinfar, et al., 2000). Given the lack of research exploring young children's ETV, additional studies should explore the role of gender with younger populations to confirm this finding.

Unlike gender, children's exposure to community violence differed as a function of race; however, these differences were not in the hypothesized direction. The majority of ETV studies have indicated an association between children of racial minorities and

increased violence exposure. Despite this research, Latino children in this study were less likely to be exposed to violence (i.e., total exposure and witnessing) than Caucasian/biracial/other children. The reasons for this finding are not clear from this study.

*Hypothesis 2: ETV and Children's Behavioral and Social Functioning*

The second research question examined negative consequences of preschool children's ETV. Specifically, it was hypothesized that children with exposure to violence would exhibit aggression and deficits in behavior and social skills. Despite the numerous ETV studies, few researchers have focused on younger children's negative outcomes, especially social competence.

*Previous Empirical Support*

In general, the current ETV literature identified several consequences of school-aged children and adolescents ETV, including externalizing behavior problems (Cooley-Quille, et al., 1995; Lynch, 2003; Osofsky, et al., 1993; Martinez & Richters, 1993; Schwab-Stone, et al., 1995) internalizing behaviors (Gorman-Smith & Tolan, 1998; Kliewer et al., 1998, Lynch & Cicchetti 1998; Schwab-Stone et al., 1999), and aggressive behaviors (Cooley-Quille, et al., 1995; Martinez & Richters, 1993; Osofsky, et al., 1993; Schwab-Stone et al., 1995). In comparison to studies with older children, few studies have researched the consequences of violence exposure in preschool children. Preliminary studies in high crime areas indicated that preschool children with ETV exhibited externalizing and internalizing behaviors (Linares, et al., 2001), as well as fewer positive social interactions with peers, aggression, and declined cognitive performance (Farver et al., 1999; Farver et al., 2005). In comparison to other areas of young children's functioning, social competence in children with ETV has rarely been studied (Kupersmidt et al., 2002; Margolin & Gordis, 2000). Research

investigating the social deficits of young children with ETV is particularly relevant, given that the development of social competence is an important developmental milestone that impacts children's future behavior and functioning (Kupersmidt & Coie, 1990).

Bandura's (1974) social learning theory suggested that children's behavior and social reactions are rooted in observational learning they acquire from role models in their social environment. Bandura asserted that children's social behavior is rooted in their own mental representations of observed social responses which are later accessed and imitated.

Furthermore, when children are exposed to violent and aggressive role models, they are likely to develop aggressive and socially deviant behaviors as well. Children with ETV may view violence as an acceptable way of reacting to perceived threat, given that they observe role models displaying these behaviors.

#### *Findings and Interpretation*

This study supported the hypothesis that ETV predicts aggression in preschool children who are victimized by violence. Specifically, children who experienced victimization were rated by their teachers as being more aggressive than children with no victimization, when controlling for age, gender, race, family income, and geographic location. This finding is consistent with past research and indicated that young children who are exposed to violence are at an increased risk for developing aggressive behavior. Children with aggressive behaviors are at greater risk for delinquency and low academic achievement. Thus, children's victimization by violence may have long lasting effects that follow them throughout their development. Analyses of children's aggressive behavior also indicated that girls were statistically significantly less likely to be aggressive than boys, according to teacher's ratings. Interestingly, girls were also rated by teachers as having statistically

significantly more problem behaviors than boys. In contrast to aggression, children's problem behaviors and level of social competence was not statistically significantly affected by their violence exposure, when controlling for other variables in the model. This finding is surprising given past research linking violence exposure with problem behaviors, and social deficits. Overall, these results suggest that victimization by violence as opposed to witnessing violence leads to the development of aggressive behavior in young children.

One possible explanation for these findings is that the effects of children's ETV may not have affected social skills or problem behaviors at this stage in the child's development. It is possible that the effects of exposure to violence are not immediately apparent in children's problem behaviors and social functioning. Future longitudinal studies would be helpful to determine the impact of early ETV with problem behaviors and social deficits that occur later in children's development. Another possible explanation for the lack of impact of ETV on problem behaviors and social skills is that behavior ratings in these areas were completed by a single informant (i.e., parents). Parent observations only take into account children's behavior outside of the school environment during unstructured times. Furthermore, children may exhibit more problem behaviors in a structured school environment and parents' ratings may not have reflected these behaviors. Likewise, only parents completed ratings of children's social skills and they may not have had adequate opportunity to observe how their child interacts socially with other children their age.

Girls in this study were rated by teachers as being statistically significantly less aggressive than boys. Also, Latino parents rated their children as having statistically significantly higher social skills and less problem behaviors than African American and Caucasian/biracial/other children. Additionally, children residing in rural locations were

rated by their mothers as being less socially competent than children living in urban areas. One possible explanation for this finding is that children who live in rural areas are less likely to live in neighborhoods and more likely to live further away from neighbors. Consequently, children's social interactions with other children may be more limited than children residing in urban areas.

### *Hypothesis 3: Mediating Role of Parental Depression*

The third research question of this study examined characteristics of the child's family that may mitigate negative outcomes associated with ETV. Specifically, this study built upon current research to determine if parental depression mediated the relationship between ETV and preschool children's aggression, behavior problems, and social skills deficits. This line of research attempted to define characteristics of a child's family that may mediate negative outcomes in children with ETV.

### *Previous Empirical Support*

Current literature has investigated the role of family characteristics as potential mediators of young children's response to exposure to violence. Several studies have identified maternal depression as a mediator of negative outcomes in children exposed to violence (Dyer Harnish et al., 1995; Linares et al., 2001). Unsurprisingly, parents who are unable to protect their children from the presence of violence in their communities often develop a sense of helplessness and frustration (Garbarino et al., 2002). This sense of helplessness often manifests in the development of depressive symptoms among parents. When parents are depressed they are less present in their children's lives and are often emotionally incapable of providing adequate support and parental responsibilities, and more



susceptible to having children who exhibit problem behaviors (Downey & Coyne, 1990; Zahn-Waxler et al., 1990).

Studies have indicated parental support as a key factor of resiliency among children exposed to violence (Hill & Madhere, 1996; O'Donnell et al., 2002). When investigating young children's ETV, maternal psychological functioning is a particularly salient factor. Furthermore, O'Donnell et al. (2002) found that parental support was a stronger predictor of resilience in violence exposed children during earlier grades as opposed to later adolescence. Given this research, it can be assumed that parental support and availability would be particularly important for young children since there is a stronger likelihood that young children will co-witness violence with their parents than older children. Preschool children are likely to turn to their parents to identify and select coping strategies for dealing with stressful life events (Farver et al., 2005). Younger children are more likely to view their parents as role models since social groups become more influential when children are of school age. Consequently, children are more likely to exhibit distress and psychological dysfunction if they have parents who exhibit stress reactions when exposed to community violence. Support for this theory is rooted in Bandura's social learning theory (1974), which suggested that children's behavior and social responses are formed, in large part, by observational learning from role models in their environment.

Additional theoretical support for parental depression as a mediator of children's ETV is rooted in Attachment Theory (Ainsworth et al., 1978; Bowlby, 1969). As previously mentioned, community violence often leaves children with emotionally unavailable parents who become numbed, frightened, or depressed as a result of violence exposure in their communities (Garbarino et al., 2002). The development of depression often makes it

difficult for parents to adequately perform parenting responsibilities for their children. Because parent's become emotionally unavailable, children may withdraw from social interactions and exhibit disorganized behaviors. This may occur because children are unable to develop trust and security with their primary caregivers, and are in turn unlikely to trust others they encounter (Osofsky, 1995). Some researchers (Aber & Allen, 1987) suggested that young children who are given the opportunity to develop secure relationships with caregivers are more likely to explore their world, cautiously stray from their comfort zone, and begin to engage in new experiences. On the contrary, children who have concerns about safety and security may be overly concerned with threat in their environment which may create problem behaviors and difficulty with social interaction. Theoretical support and findings from previous research studies warranted further exploration of parental depression as a potential mediator between children's ETV and resulting aggression, behavior and social problems.

#### *Findings and Interpretation*

Findings from this study partially supported the hypothesis that parental depression mediates the relationship between preschool children's ETV and their social functioning and problem behaviors. Specifically, findings suggested that children's ETV indirectly affected their social skills and problem behaviors via parental depression. Furthermore, children who were exposed to violence (i.e., total exposure and witnessing) were more likely to have depressed parents than children who were not exposed to violence or who were victims of violence. Additionally, depressed parents were more likely to have children with social skills deficits and problem behaviors than parents without depression. On the contrary, parental depression did not mediate the relationship between children's total ETV and aggression or

the relationship between children's witnessing of violence and aggression. There was also no statistically significant relationship between victimization and child outcomes of social skills, problem behaviors, or aggression via parental depression.

There are several ways to interpret the relationship between parental depression with ETV and children's social functioning. Unsurprisingly, the results suggested that community violence exposure is associated with depression in parents. Parents who live in violent communities are likely to be more depressed than parents who live in safer communities. Farver et al. (2005) suggested that parents become depressed because they believe they are incapable of providing a safe environment for their children to grow up in. Parental depression may leave caregivers emotionally incapable of performing parenting responsibilities and providing support for their young children. Findings from this study added to previous research linking parental depression with children who exhibit behavior problems (Downey & Coyne, 1990; Zahn-Waxler et al., 1990) by identifying an additional link to children's social skills functioning.

Attachment theory provides theoretical support for the relationship between parental depression and children's social skills and problem behaviors. When parents are detached and depressed as a result of violence exposure it often affects their parenting ability. Parental depression may inhibit parents from forming normal attachment to their children. When children do not form typical attachments with caregivers they have difficulty trusting others because the people who they are supposed to trust the most to care for their needs are unable to do so (Osofsky, 1995). Furthermore, children who do not develop secure relationships with caregivers are unlikely to explore their worlds and engage in new experiences (Aber & Allen, 1987) which, in turn, may affect their ability to engage in appropriate social

interactions. Furthermore, depressed parents are less likely to provide adequate supervision and guidance for their young children, which may in turn lead to the development of behavior problems.

In contrast to social skills, parental depression did not mediate the relationship between ETV with children's aggression. This finding contrasts the literature, which suggested that parental depression mediates the relationships between life stressors and children's aggression (Dyer Harnish et al., 1995; Farver et al., 2005; Linares et al., 2001). It is unclear why parental depression did not have similar effects in this study. One explanation might be that children's aggressive behaviors have not manifested yet, given the young age of the children in the study. Future longitudinal analyses should be conducted to determine whether parental depression during early childhood affects children's aggression at a later age.

Findings from this study provided preliminary support for addressing parental psychological functioning in order to improve the behavior and social functioning of children with violence exposure. However, many other factors that were not explored in this study may also be impacting parental depression and children's negative social and behavioral outcomes. Factors such as child disability, parental unemployment, domestic violence, life stressors, trauma, or parenting disciplinary styles may also be impacting parent and child functioning. These factors should also be explored in future studies to determine the role of parental depression over and above these variables. Although there was a statistically significant correlation between parents' depression and child outcomes, it is impossible to determine the directionality due to the correlational nature of this study. It is possible that parental depression may be a result of distress related to the problem behaviors or social

deficits of their children. A longitudinal study which explores multiple variables would be required to establish a causal linkage between parental depression and negative outcomes in children.

#### *Hypothesis 4: Mediating Role of Social Cognition*

The final research question in this study explored individual characteristics of the child that could potentially impact the relationship between ETV and negative child outcomes. Furthermore, this study attempted to better understand the processes through which children exposed to violence develop behavioral and social deficits by investigating the role of social cognition as a possible mediator. The role of children's hostile attribution biases, emotion recognition and cognitive ability (i.e., receptive language) was explored to determine its relationship with ETV and children's aggression, behavior problems, and social skills deficits. This investigation attempted to define characteristics of young children that may reduce negative outcomes in children with ETV.

#### *Previous Empirical Support*

The current body of literature has identified social cognition as an important mediating factor for negative outcomes in children with ETV (Kupersmidt et al., 2002, Dodge et al., 1994). However, initial research examining social cognition has neglected to explore its importance with younger populations. Additional research in this area will be advantageous in providing clinicians and researchers with a better understanding of violence exposure from a developmental perspective.

*Social cognition* refers to the way in which children interpret and react to their social environment (Kunda, 1999). Furthermore, *social-information processing* explains the manner in which children comprehend social situations and interpret the world around them.

Baldwin (1992) suggested that these social cognitive processes are often unconscious behaviors that unfold instinctively. Dodge and his colleagues (1994) introduced a *social information processing* (SIP) model consisting of 6 stages: (1) encoding social cues (i.e., attending to relevant cues from environmental stimuli and remembering pertinent information), (2) mentally representing and interpreting social cues (i.e., attaching meaning to observed cues), (3) clarifying goals, (4) retrieving viable social responses, (5) making a response decision and (6) acting out the chosen behavioral response. For the purposes of this study, the investigation focused on the first two stages of the SIP model: (1) encoding social cues and (2) interpreting social cues.

Schwartz and Proctor's (2000) research investigating elementary children's ETV indicated that deficits in the SIP model mediated negative social outcomes in children who witnessed violence. Similarly, Shahinfar et al. (2001) indicated that aggressive adolescent males who were exposed to severe violence as victims exhibited deficits in earlier stages of the SIP model, whereas, adolescents who were exposed to severe violence as witnesses exhibited deficits in later stages of the SIP model. Additionally, Dodge et al. (1990) asserted that social information processing deficits (i.e., inability to attend to or recognize social cues, hostile attribution bias and the inability to identify appropriate problem solving strategies) mediated the relationship between exposure to physical victimization and later development of aggressive behavior. Furthermore, Bradshaw and Garbarino's (2004) study indicated that adolescents exposed to violence as witnesses displayed negative perceptual biases. Their findings suggested that children with violence exposure tend to process social information with a negative bias and interpret their environment as threatening. Bradshaw and Garbarino's suggested that the association between witnessed violence and aggressive beliefs

can be attributed to social learning theory. Specifically, children who grow up in violent communities are likely to interpret their world as dangerous, are more prone to view others as hostile, and select aggressive responses to perceived threat in their environment.

Children who have difficulty encoding and interpreting social cues from their environment may develop impairments in behavior and social functioning. Research has linked children's ability to accurately identify facial expressions with the emergence of empathy and other prosocial behaviors associated with social-emotional competence (Izard, et al., 2001). Additionally, Pollak et al. (2000) suggested that children's ability to accurately recognize emotions during early childhood creates a foundation for the later development of appropriate social interpretations and behavioral responses. Literature investigating child deficits in encoding social cues suggested that maltreated preschool children exhibit deficits in accurately identifying emotional expressions when they are presented with context or facial cues (Camras et al. 1983; During & McMahon, 1991); however, nonmaltreated children were able to correctly recognize emotions (Reichenbach & Masters, 1983; Walden & Field, 1982). Pollak et al. (2000) investigated the impact of physical abuse and neglect on children's ability to accurately identify emotions associated with facial expressions. They suggested that physically abused children exhibit a negative bias when interpreting emotional cues because they are most accustomed to angry expressions, given that they grow up in violent environments. One might assume that children exposed to violence in their communities might have similar deficits in identifying emotions accurately. Additional research on emotion recognition in young children exposed to violence will provide useful information regarding possible mechanisms that contribute to the development of behavioral and social impairments.

In addition to deficits in emotion recognition, children may also have difficulty interpreting social cues in their environment. Furthermore, children exposed to danger and violence in their communities are likely to view the world as a dangerous place, to become hypervigilant for threat in their environment, and to view others as aggressive by nature (Bradshaw & Garbarino, 2004). Dodge et al. (1990) described this phenomenon as *hostile attribution bias* and asserted that children who have this propensity are hypervigilant for cues of threat in their environment and overlook important environmental factors that may influence the behavior of others. When presented with ambiguous social situations, children with hostile attribution biases overemphasize hostile intent in other's behavior (Crick & Dodge, 1994). Further investigation examining the role of hostile attribution biases in young children will provide a better understanding about the link between ETV and deficits in children's social and behavioral functioning.

Similar to social information processing deficits, decreased cognitive functioning has also been identified as a consequence of children's ETV. Additionally, cognitive functioning has been identified as a source of resiliency in children who are exposed to adversity. Many research studies have indicated an inverse relationship between ETV and children's academic and cognitive functioning (Farver et al., 2005; Margolin & Gordis, 2004; Schwab-Stone et al. 2005). The role of cognitive functioning in children's exposure to violence is not well documented, especially with younger populations. Research studies have investigated various facets of cognitive functioning when examining its relationship with ETV and negative outcomes. This study focused on young children's receptive language abilities as a measure of their cognitive functioning. Receptive language pertains to information in a child's environment that they see, hear, and take in. Ultimately, receptive language is the



comprehension of information and is specifically important when investigating social cognition, as children are likely to misinterpret social cues if they cannot comprehend language. The role of children's cognitive ability in the relationship between young children's ETV and resulting negative outcomes warranted additional research.

### *Findings and Interpretations*

A path analysis model attempted to determine if social cognition, specifically emotion recognition, hostile attribution bias, and cognitive ability, mediated the relationship between exposure to violence and children's problem behaviors, aggression, and social skills. The path analysis models did not support this hypothesis, indicating children's social cognition did not mediate the relationship between ETV (i.e., total, witnessing, and victimization) and negative child outcomes.

There are several explanations that may account for this finding. First, it is frequently difficult to assess young children, given that they are distractible, have short attention spans, and varying levels of language development. For these reasons, child assessments in the area of social cognition may not have been wholly accurate measures of children's ability in each of the three areas. Additionally, children in this study had relatively low frequency of violence exposure compared with children in other research studies. This situation might suggest that lower frequency of violence exposure does not affect children's social cognition in the same manner that it impacts children who are exposed to violence at a higher frequency and on a consistent basis. Also, this study only investigated some aspects of children's social information processing and cognitive ability, suggesting that research with additional areas of children's ability might have different outcomes. Furthermore, the literature linking social cognition, ETV, and negative outcomes has been conducted mainly

with older, school-aged children and adolescents. Consequently, results from this study suggested that ETV may not impact children's social cognitions in the same manner in which they affect older children.

#### *Relationship between Demographics and Mediating Variables*

Several statistically significant associations between demographic and mediating variables were found in this study. Both Latino and African American parents reported statistically significantly less depression than parents of Caucasian, Biracial, or other races. Furthermore, parents from families with higher annual family incomes (i.e., above \$15,000) also reported statistically significantly less depression than parents from families with annual family incomes below \$15,000. Child assessments of emotion recognition were statistically significantly associated with age, Race (Latino), and income, such that older children and children from families with higher annual incomes scored higher on the emotion recognition measure. However, Latino children scored statistically significantly lower on measures of emotion recognition when compared to children of other races. Also, Latino children were statistically significantly less likely to exhibit hostile attribution biases than children of other races. Race was also a strong predictor of children's cognitive functioning, with Latino and African American children scoring statistically significantly lower than Caucasian, Biracial, or children of other races.

#### Considerations

Investigation of children's violence exposure poses several challenges. First, past research has revealed substantial discrepancies in the way in which violence exposure is defined. Differences in definitions of violence exposure make it difficult to compare the prevalence of ETV across studies. Additionally, several measures of children's violence

exposure which investigate varying incidents of exposure exist in the literature. As a result of differences in methodology throughout ETV research, it is challenging to draw assumptions regarding the prevalence and outcomes of ETV.

Furthermore, this study did not attempt to disentangle the effects of community violence exposure and family violence. Additionally, parents' depression may also be associated with other life stressors such as unemployment, poverty, domestic abuse, or other traumatic events. Similarly, children's deficits in behavioral and social functioning may also be affected by these confounding variables, and other variables such as child temperament or various disabilities. Future studies should attempt to disentangle these effects by investigating other factors that might be associated with parental depression and children's aggression and deficits in behavior and social functioning.

Unfortunately, violence exposure in this study was based solely on parent reports. Confirming children's violence exposure becomes difficult when it is based entirely on parents' recollection. As previously mentioned, parents may underreport their children's violence exposure because they are harboring guilty feelings associated with living in dangerous and violent communities and exposing their children to the deleterious effects of violence. Additionally parent reports of children's violence exposure were not confirmed with crime rates from police departments. Also, this study did not take into account violence that children may have experienced outside the home or in the community without parents' knowledge. Due to the young age of the children in the study, they were not directly questioned about their community violence exposure.

Although there is no evidence from this study to conclude that Latino mothers exhibited reporter bias, it is unusual that Latino mothers reported that their children had less

violence exposure, problem behaviors, and rated their children as having significantly higher social competence than children of other races. However, many of the research studies investigating Latino children's ETV has been conducted in major U.S. cities such as Los Angeles, New York, or Chicago, where the immigrant population has been in place for years. Latino children in these studies may be second or third generation. The Latino population in North Carolina is relatively new and children are likely to be first generation or were born in other countries. Furthermore, newly immigrated parents may have different parenting practices that protect their children from violence existing in the environment. Additionally, many of the newly immigrated families come to America with intact families. This tendency may also serve as a protective factor for children, given that there is an additional parent in the household available to shield them from the violence in their communities. Future studies may opt to inquire about when parents immigrated to this country and the number of parents in the household as a means to meaningfully compare Latino children's ETV across studies.

Another consideration is that single informants (i.e., teacher or parent) provided information regarding children's behavior and social functioning. Children's aggressive behavior was only assessed by their classroom teachers, who may not have an accurate view of children's aggressive behavior outside the classroom; therefore, the aggression variable in this study may only represent children's aggressive behavior within the school environment. Similarly, children's social competence and problem behaviors were only assessed through parent report. In the same way, parents may be unaware of problem behaviors or children's social skills that manifest outside of the home environment. For this reason, future studies

should use multi-informants to assess ETV and each area of children's social and behavioral functioning.

Lastly, several of the measures (i.e., Kusche Emotion Inventory and the Dodge Hypothetical Attribution Task) designed to assess children's social cognition were adapted for use in this study and were not psychometrically validated through prior research. The development of psychometrically validated measures of children's social cognition should be used in future studies to further investigate the relationship between social cognition, ETV, and young children's behavioral and social functioning.

#### Limitations

Several limitations of this study should be considered. Given that this study was conducted with a Head Start population, it was difficult to separate the effects of community violence and poverty. Head Start programs primarily serve economically disadvantaged families, with 10% of enrollment reserved for children with disabilities. As a result, most children in the study were living in poverty; thereby making it difficult to ascertain that exposure to community violence as opposed to poverty is predicting more aggression in preschool children victimized by violence. However, children in this study were still exposed to violence at alarming rates and susceptible to the negative outcomes associated with violence.

The finding that ETV indirectly affects children's social skills deficits through parental depression should be interpreted with caution. The nature of this study was cross-sectional and was limited by correlational analysis, which makes it possible to identify other potential pathways between parental depression and decreased social competence in children. For example, other research (Farver et al., 2005) has suggested that parents may utilize

strategies for protecting their children from violence exposure that may in turn affect their social competence. Furthermore, they suggest that families often respond to community violence by trying to shield their children from the dangerous communities in which they live. Parents who are afraid for their children's safety may be more likely to keep children indoors, which may limit their social interactions with other children, and in turn affect their social competence. Consequently, these children may have limited opportunities to engage in new social experiences and develop age appropriate social competence.

Additionally, method variance may be responsible for the presence of indirect effects in this study. In the mediation models, single informants (i.e., parents) provided information regarding children's behavioral and social functioning. It is possible that parents who reported higher levels of depression may have over reported behavior and social problems in their children. When people are depressed they often have a negative view of the world and tend to over identify problems in their lives. In the future, studies can avoid this issue by having multi informants provide information regarding children's functioning.

In addition to issues regarding single informants, it is interesting that there was no link between victimization and problem behaviors in the study when a link was found between victimization and aggression. One possible explanation for this finding is that the problem behaviors subscale includes both externalizing and internalizing behaviors. It is possible that children's problem behaviors may not have shown up when these behaviors were combined. For example, if a child exhibited externalizing behavior problems but no internalizing behavior problems there problem behaviors score may not accurately reflect their functioning in this area. It would be helpful if future studies addressed this issue by

assessing children's externalizing and internalizing behaviors with separate subscales to avoid effects being drowned out by the inclusion of the other.

Lastly, many researchers suggest that measures of children's problem behaviors and social skills may not necessarily point to maladjustment (Farver, et al., 2005; Richters & Martinez, 1993). Martinez and Richters suggested that frequently children's maladaptive behaviors can be advantageous in dangerous situations they may encounter within their communities. These behaviors may be viewed as survival behaviors for children who grow up in violent neighborhoods. Children may have to act out aggressively in order to protect themselves from potentially dangerous encounters in their environment. Additionally, socially avoidant behaviors may be advantageous for children who are concerned with dangerous individuals in their community. In this situation, avoiding dangerous people in the environment may be adaptive for children and ultimately can protect them from harmful experiences.

### Conclusions

This study provided additional support for the finding that exposure to community violence predicts aggression in children who are victimized by violence. Specifically, the study added to the literature by confirming that young children who live outside of inner-cities are still susceptible to violence exposure. Findings suggested that young children who are victimized by violence are more aggressive than children who witness violence or have no violence exposure. Findings also indicated an indirect relationship between exposure to violence (i.e., total exposure and witnessing) and children's social competence and problem behaviors via parental depression. While social cognition did not mediate children's ETV and deficits in aggression, behavioral, or social functioning, more work is needed to

understand the causal pathways of ETV and maladjustment in young children. It is imperative that research on children's exposure to violence goes beyond identifying outcomes of the exposure and examines potential mechanisms for negative child outcomes. Future research can build upon this study by addressing the limitations of the methodology and by exploring other factors that may be associated with parental depression, children's violence exposure, and deficits in behavioral and social functioning. Specifically, in future research on children's exposure to violence the focus may move beyond parental depression to examine how parenting practices may contribute to children's social competence and problem behaviors.

The findings of this study are relevant to current practice in the field of early intervention because it begins to demystify the mechanisms through which violence exposure creates negative outcomes in children. Although, more comprehensive studies are necessary to fully understand the pathways from violence exposure to negative outcomes in children, this study provides a starting point for understanding these processes. In order to provide more comprehensive services for both violence exposed children and their families, a better understanding of the various factors that lead to maladjustment for parents and children with ETV is needed. By scientifically exploring various factors that may contribute to maladjustment, researchers and clinicians can begin to identify the most salient factors that should be addressed when designing interventions. Ultimately, work needs to be done to make communities safer places for children to grow up in. In the meantime, teachers and clinicians need to be more aware of the dangers existing in young children's communities and how it may affect their development and functioning.



## APPENDIX A

### My Child's Exposure to Violence

“For the next set of questions, we will just use “yes” or “no” for answers. These questions are about different violent things that may have happened to (CHILD) or that s/he may have seen, either at home or in the community. This might be difficult for you to think about. We appreciate you answering the questions as best you can. I want to remind you that I am not allowed to discuss your answers with anyone else. When I ask about different things that (CHILD) might have seen DO NOT include in your answers things that s/he might have seen or heard about only on TV, radio, the news, or in the movies.

*Interviewer: For those events answered “yes” follow up with questions about where this took place. “Home” includes the immediate area inside and outside the child’s home. “Community” refers to any place other than the home. “Both” should be circled was exposed to an event both at home and in the community.*

In the LAST YEAR, has (CHILD)....

113. Been in some kind of natural disaster?
114. Seen a serious accident
115. Been involved in a serious accident?
116. Seen someone get threatened by someone else?
117. Been threatened by someone?
118. Seen someone chased by another person?
119. Been chased by someone?
120. Seen someone get hit, slapped, or punched?
121. Seen you get hit, kicked, or punched or otherwise hit by your spouse or partner?
122. Been hit, slapped, or punched by someone?
123. Seen someone get attacked with a weapon?
124. Been attacked by someone with a weapon?
125. Heard gunfire?
126. Seen someone shot at?
127. Been shot at by someone?
128. Been told about someone getting shot?
129. Seen someone actually get shot?
130. Been shot?
131. Been told about someone dying or getting seriously injured?
132. Been told about someone getting killed?
133. Seen someone get killed?
134. Found a dead body?
135. Been told about someone killing himself or herself?
136. Been sexually assaulted by someone?
137. Been told about someone being raped or sexually assaulted?
138. Experienced or seen and other kind of violent act? Specify: \_\_\_\_\_

## APPENDIX B

### Hypothetical Attribution Task (modified)

#### Introduction

“I have some picture with me and I’m going to show them to you and tell you some stories about the pictures. We’re going to pretend that you’re on these stories. Then I’m going to ask you some questions because I want to know what ideas you have about the stories.”

1. Pretend that you are on the playground playing catch with a kid named Todd/Jessica. You throw the ball to Todd/Jessica and he/she catches it. You turn around, and the next thing you know, Todd/Jessica has thrown the ball and hit you in the middle of your back. The ball hits you hard, and it hurts a lot.
  - a. Why do you think Todd/Jessica hit you in the back?
  - b. What would you do about Todd/Jessica after he/she hit you?
  
2. Pretend that you are walking at Head Start and you’re wearing brand new sneakers. You really like your new sneakers and this is the first day you have worn them. Suddenly, you are bumped from behind by a kid named John/Lisa. You are bumped into a mud puddle and your new sneakers get muddy.
  - a. Why do you think John/Lisa bumped into you?
  - b. What would you do about John/Lisa after he/she bumped into you?
  
3. Pretend that you are in a cafeteria. You don’t like your milk so you walk over to throw it away. Suddenly, a kid named David/Allison bumps your arm and spills your milk all over your shirt. The milk is cold, and your shirt is all wet.
  - a. Why do you think David/Allison bumped into you?
  - b. What would you do about David/Allison after he/she bumped into you?

## APPENDIX C

### Preschool Behavior Project-12 (PBP-12)

(Kupersmidt and Bryant, 2000)

#### **In your opinion how often does the child...**

1. Hit or kick other kids?
2. Argue or disagree with other kids?
3. Do sneaky things when others aren't looking?
4. Tell other kids not to play with someone who isn't around to hear it?
5. Push, shove or grab other kids?
6. Call names or tease other kids?
7. Take things from others when they are not looking?
8. Tell lies about kids when they're not around?
9. Pinch or Bite other kids?
10. Threaten or "boss around" other kids?
11. Play mean tricks?
12. Say mean things about kids behind their back?

#### Key:

- 1 = Once a month or less
- 2 = Once a week
- 3 = 2 to 4 times a week
- 4 = Once a day
- 5 = Many times a day

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