NEIGHBORHOOD VIOLENCE AND PEER ANTISOCIAL BEHAVIOR AS PREDICTORS OF FAMILY RELATIONSHIPS: AN EXAMINATION OF MEDIATION EFFECTS

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CHAPTER I

INTRODUCTION

The importance of socialization contexts outside of the family has been well documented. In particular, neighborhood (e.g., violence, collective efficacy) and peer relationship (e.g., relationship quality, peer deviancy) factors both have been linked to a number of adolescent outcomes, such as self-esteem, academic competence, prosocial behavior, and antisocial behavior (for reviews see Ingoldsby & Shaw, 2002; Levanthal & Brooks-Gunn, 2000; Rubin, Bukowski, & Parker, 2006). In addition to links to child and adolescent adjustment, there is some preliminary evidence that these socialization experiences outside of the family may shape what goes on inside of the family (Dishion, 1990; Kramer & Kowal, 2005; Laird, Criss, Pettit, Bates, & Dodge, 2009). That is, peer and neighborhood characteristics may be related to parenting and family relationships. For example, disadvantaged and dangerous neighborhood quality has been linked to poor parenting in families (Capaldi, DeGarmo, Patterson, & Forgatch, 2002; Simons, Johnson, Beaman, Conger, & Whitbeck, 1996).

While the importance of neighborhoods and peer relationships as socialization contexts has been established, there are several gaps and limitations in the literature. For instance, as shown in Figure 1, while there is an extensive body of literature examining

whether family factors predict peer relationships, few studies have investigated whether peer relationships predict later family factors (Ladd & Pettit, 2002). In fact, most of the previous studies investigating the peer-family link are centered around the idea that youth learn certain skills and behaviors within the family context that are then carried into peer relationships (Criss, Shaw, Moilanen, Hitchings, & Ingoldsby, 2009; Ladd & Pettit, 2002). However, it is also possible that some skills and behaviors are learned within peer experiences and spillover into the family. In addition, possible reasons for why extrafamilial socialization experiences influence family factors (i.e., mediation effects, see Figure 2 for gaps in neighborhood literature) is less clear. In other words, what sorts of skills and behaviors do children bring home from their experiences outside of the home? Finally, the previous literature has been based on cross-sectional or short-term longitudinal studies, with few long-term longitudinal studies.

The current thesis aims to address these limitations by answering three major research questions. The first is to examine whether neighborhood danger/violence at ages 8 and 10 is associated with parenting, parent-child relationships, or sibling relationships at age 15. The second research question focuses on whether peer relationships at ages 8 and 10 predict these age 15 family factors. Finally, the last research question involves investigating whether adolescent antisocial behavior mediates these associations.

CHAPTER II

LITERATURE REVIEW

Neighborhood Influences

According to Bronfenbrenner's Ecological Theory (1979), child and adolescent development depends on many levels of context, including neighborhood, family, and school characteristics. Neighborhood qualities, which are located on the mesosystem in Bronfenbrenner's model, are hypothesized to influence children both directly and indirectly, though the direct influences are thought to increase with age (Ingoldsby & Shaw, 2002). Neighborhoods are thought to *directly* influence children through their exposure to the behavior and attitudes of adults and peers in the surrounding community (Ingoldsby & Shaw, 2002). For instance, children may witness shootings or physical violence in the streets while walking to school. *Indirect effects* are thought to exist through the influence that neighborhoods have on parents (Capaldi et al., 2002). For example, living in dangerous and violent neighborhoods may increase parental daily stressors and, in turn, influence the quality of parenting in the home. The Ecological Framework does not only focus on the direct associations between these extrafamilial factors and individual development. The individual, family, and many other contexts are thought to influence each other. For example, a family's financial situation may lead them to live in less affluent neighborhoods, and the violence in the neighborhood may shape a child's behavior in a negative manner.

Researchers examining the impact of neighborhood characteristics on family and parenting factors typically have assessed individual- and community-level variables using participant reports and/or census data (e.g., violence, drug use, collective efficacy; Leventhal, Dupéré, & Brooks-Gunn, 2009). This research has demonstrated that parents in dangerous and violent neighborhoods may have fewer resources and social support (Ingoldsby & Shaw, 2002; Lochman, 2004), more distress and depression (Ingoldsby & Shaw, 2002; Linares, Heeren, Bronfman, Zuckerman, Augustyn, & Tronick, 2001; Lochman, 2004; Sampson, Morenoff, & Gannon-Rowley, 2002), and more marital conflict (Lochman, 2004), which can inhibit their ability to positively socialize their children and may disrupt specific dyadic relationships and overall family functioning. The literature seems to support these conclusions. For instance, Laird and associates (2009) found that neighborhood safety at age 10 was positively related to monitoring knowledge scores at ages 12, 14, 15, and 16. Another study found a positive association between negative social climate (e.g., physical and social disorder and fear in the neighborhood) and harsh discipline (O'Brien Caughy, Murray Nettles, & O'Campo, 2008). These findings are consistent with those of Shaw and colleagues (Shaw, Criss, Schonberg, & Beck, 2004) who reported a positive relationship between ecological disadvantage at age 18 and 24 months and mother-child conflict at 60 and 72 months. Although no studies were found that have examined the association between neighborhood or any other contextual factor and sibling relationships, Barnes and associates (2006) speculated that family conflict (including in the sibling dyad) likely will be elevated in economically deprived neighborhoods. Overall, the previous literature

suggests that parenting and parent-child relationship quality may be influenced by neighborhoods quality.

Peer Influences

While there have been several investigations focusing on neighborhood characteristics, research examining the impact of peer relationships on family functioning is more scarce. Indeed, most studies examining the peer-family link are based on the assertion that the family serves as a training ground where children can learn important skills that can be carried over to peer relationships (Criss et al., 2009; Ladd & Pettit, 2002). However, given that peer relationships serve as important and *unique* socialization contexts during childhood and adolescence (Criss, Pettit, Bates, Dodge, & Lapp, 2002; Ladd, 1999; Lansford, Criss, Pettit, Dodge, & Bates, 2003), it is equally possible that children may learn specific interaction skills (positive and negative) in their affiliations with peers that may spill over to family relationships. Snyder (2002) speculated that the process whereby children learn specific positive or negative skills and behaviors during peer interactions may occur in three ways. First, peers may serve as role models, so that youth may imitate their friends' behaviors, such as aggression or substance use. In addition, peers may reinforce certain behaviors or skills using positive or negative reactions (e.g., laughing, getting angry). Dishion, Spracklen, Andrews, & Patterson (1996) called the negative form of this phenomenon deviancy training, in which antisocial behaviors are positively reinforced by peers. Last, through a coercive cycle, analogous to the social coercion processes that occur in high-risk families (Patterson, 2002), youth and their peers may engage in interactions in which there is an escalation of

negative affect (e.g., anger) and intensity of violence that is contingent on each others' actions and reactions.

While the exact process of peer socialization may vary from person to person, there is some very preliminary evidence from the literature that suggests that experiences in peer relationships may influence what goes on in the family. In a cross-sectional study of nine- and 10-year-old boys' peer and family relations, poor peer relationships were found to be significantly related to negative parenting (Dishion, 1990). Laird and colleagues reported that high levels of peer antisocial behavior at ages 12-15 were significantly related to low levels of monitoring knowledge at ages 13-16 (Laird, Criss, Pettit, Bates, Dodge, 2008; Laird et al., 2009). In another longitudinal study examining sibling relationships of first-born children, Kramer and Kowal (2005) found that more positive play with a friend during the last trimester of mother's pregnancy was associated with higher levels of positive sibling interaction in adolescence. In conclusion, preliminary evidence supports the idea that peer relationships may influence both parenting and family relationships.

Mediating Effects of Adolescent Antisocial Behavior

Adolescent antisocial behavior may be a "skill" or behavior that is learned in extrafamilial socialization experiences and carried over into the home (Ladd & Pettit, 2002). In other words, adolescent antisocial behavior may mediate or explain the link between neighborhood danger and peer antisocial behavior and positive parenting and family relationships (see Figure 1). Although no published studies have explicitly examined whether adolescent antisocial behavior mediates the link between extrafamilial experiences (i.e., neighborhood quality, peer relationships) and parenting and family

relationships, examination of potential mediators is critical as it helps explain the underlying processes involved in the association between two variables. In order words, it would help describe *why* socialization experiences outside of the family influence what goes on inside the family. Thus, understanding potential mediation pathways may provide important information for researchers, especially those conducting interventions with high-risk youth.

There is some preliminary evidence in the literature that adolescent antisocial behavior may serve as a mediator in the links between peer and neighborhood factors and parenting and family relationships. For example, studies have demonstrated a positive link between neighborhood violence and adolescent deviant behavior (Pathway A in Figure 1). Because violence tends to be more prominent in economically disadvantaged neighborhoods, adolescents in these areas tend to have fewer positive role models, be exposed to more criminal activity, become desensitized to violent behavior, learn negative coping strategies, and have fewer resources to aid in their healthy development (Ingoldsby & Shaw, 2002). Research has supported this idea. For example, Haynie, Silver, and Teasdale (2006) conducted a study using a sample of adolescents in grades seven through 12 and found that neighborhood disadvantage was positively related to adolescent violent behavior. Another study focusing on the influence of community violence on behavior problems concluded that exposure to violence in the community was positively related to early behavior problems (e.g., externalizing behaviors such as aggression and destruction and internalizing behaviors such as anxiety and social withdrawal; Linares, et al., 2001). In sum, the literature suggests that neighborhood violence and dangerousness is positively related with antisocial behavior in adolescence.

Significant positive associations between peer antisocial behavior and later adolescent antisocial behavior have been found in previous studies (also Pathway A in Figure 1). For instance, Fergusson, Swain-Campbell, and Horwood (2002) found that deviant peer affiliation was positively related to violent crime and property crime in boys ages 14 to 21. Friends' antisociality (individual scores at ages 13, 14, 15, and 16) also was revealed to be positively related to later delinquent behavior (individual scores at ages 14, 15, and 16) in a study conducted by Laird, et al. (2008). These results are consistent with Chapple (2005) and Simons and colleagues (1991) who found that affiliation with antisocial peers was related to delinquent behavior among adolescents. It is possible that these findings could be attributed to what Dishion (e.g., Dishion, McCord, & Poulin, 1999) has called deviancy training which was discussed earlier. Thus, over time, hanging out with deviant peers may lead to increases in adolescent antisocial behavior.

The behavior of adolescents is not only influenced by these outside factors, but has an impact on what goes on inside the family (Pathway B in Figure 1). In particular, high levels of adolescent antisocial behavior have been linked to low levels of positive parenting and parent-child and sibling relationship quality in the literature. As adolescents' antisocial behavior increases, their willingness to share information with their parents decreases, affecting the ability of parents to monitor and discipline their children (Stattin & Kerr, 2001). The adolescent's rebellion and independence gained from their parents' inability to monitor them may create a sense of power over all family members, including siblings, influencing their relationships with their parents and siblings (East & Khoo, 2005). Results of a study of 650 adolescents between ages 12 and

15 found that delinquent behavior was negatively related to parental knowledge one and two years later (Reitz et al., 2007). In another study using an African American female sample of 135 adolescents ages 13 to 19, findings revealed that delinquency was negatively related to maternal monitoring (Bowman, Prelow, & Weaver, 2007). Laird and colleagues (2008) reported that antisocial behavior among adolescents (ages 13, 14, and 15) was negatively related to later monitoring knowledge (ages 14, 15, and 16). Finally, East and Khoo (2005) found that adolescents' drug and alcohol use was positively associated with sibling conflict with younger siblings. In sum, adolescent antisocial behavior has been shown to be negatively related to positive parenting and parent-child and sibling relationship quality in prior studies.

Conclusions and Research Goals

In general, the previous literature has shown that parenting and parent-child relationship quality both are negatively influenced by neighborhood violence and peer deviancy. Prior research also suggests that adolescent antisocial behavior may mediate or explain the relation between extrafamilial socialization factors and interactions within the family. However, there are several limitations to this literature. First, many researchers have examined the link between neighborhoods and peers and family relationships, but very few used long-term longitudinal designs. Additionally, while a number of studies have examined whether families influence children's peer relationships, the examination of how peer relationships shape family relationships is rare in the literature. Furthermore, no published studies have tested whether adolescent antisocial behavior mediates the relation between these factors outside the family and what happens inside the family.

These limitations were addressed in the current study. Specifically, the first research goal involved investigating whether neighborhood violence (assessed at ages 8 and 10) influenced positive parenting, parent-child relationship quality, and sibling relationship quality. Next, the link between peer antisocial behavior and these family factors was examined. It was hypothesized that neighborhood violence and peer antisocial behavior would both be negatively correlated to positive parenting and positively related to negative parent-child relationship quality and negative sibling relationship quality. The last research question addressed whether adolescent antisocial behavior mediates the relations between the extrafamilial variables (i.e.; neighborhood violence and peer antisocial behavior) and the family relationship factors (i.e.; parenting, parent-child relationship quality, and sibling relationship quality). It was expected that adolescent antisocial behavior would mediate most of these associations.

CHAPTER III

METHODS

Sample

The sample consisted of mothers and sons from the Pitt Mother & Child Project (PMCP), an ongoing longitudinal study investigating factors that predict antisocial behavior in boys from high-risk, low-income families (e.g., Criss et al., 2009). Low-income families with sons participating in the Women, Infants, and Children (WIC) Nutritional Supplement Program in Pittsburgh, Pennsylvania were recruited. The WIC program assists income-eligible families with children from the prenatal stage to five years of age by providing monetary supplements to buy food. Initially, 310 families with sons aged 1½ years made up the sample (51.3 percent European American, 39.2 percent African-American, .3 percent Hispanic, 9.2 percent other; 33 percent single-parent-headed families; mothers' *M* age = 27.82, *SD* = 5.3; *M* family yearly income = $12 567, *SD* = 7689.02; *M* family SES = 23.32, *SD* = 9.29). Subsequent assessments were conducted at ages 2, 3½, 5, 5½, 6, 8, 10, 11, 12, and 15 years.

Due to the focus on the associations between factors outside of the family and relationships inside the family, only those families with data on either peer antisocial behavior or neighborhood dangerousness/violence (ages 8 and 10 years) and at least one

of the family variables (assessed at age 15) were used. In the present study, the sample consisted of 239 families (77.1% of original sample; age 1½ family characteristics: *M* monthly family income assessment = $1,066.33, *SD* = 639.74; *M* family SES = 23.54, *SD* = 9.21; 51.9 percent European American, 48.1 percent ethnic minorities; 32.6 percent single-parent-headed families). Participating (*n* = 239) and nonparticipating (i.e., those who did not provide data during the relevant years) families (*n* = 76) were compared on indicators of family SES, family income, ethnicity, and marital status. No significant differences were found.

Overview

Neighborhood danger (mother reports) and peer antisocial behavior (child reports) were measured at ages 8 and 10 years. These ages were used because data on both neighborhood violence and peer relationships both were available and both factors were assessed before the mediator and family factors. Also, these ages were selected based on the assumption that experiences in middle childhood influence outcomes in adolescence. The mediator, adolescent antisocial behavior, was a composite of youth, mother, and teacher reports assessed at ages 11 and 12. These ages are consistent with the idea that most engagement in antisocial behaviors will have begun by age 12, even for late-starters (Patterson & Yoerger, 2002). Parenting variables were based on mother and adolescent reports at age 15. Parent-child relationship quality, measured when the target child was 15, was based on mother, youth, and interviewer ratings. Sibling relationship quality was assessed using target child reports at age 15. Assessing the family variables at age 15 years was critical as it occurred during the transition to high school and just before most

teens got their driver's license. Moreover, these factors have been used in numerous previous studies using adolescent samples.

Measures: Predictors

Neighborhood violence/dangerousness. The neighborhood factor was a composite score of a measure of neighborhood dangerousness at age eight and neighborhood violence at age 10. At the age eight assessment ($\alpha = .93$), mothers were asked to use a 3-point Likert scale (1 = "not a problem," 2 = "somewhat a problem," 3 = "big problem") to rate whether they thought activities such as vandalism, gambling, prostitution, and illicit drug use were a problem in their neighborhood (Pittsburgh Youth Study, 1991). During the age 10 assessment, mothers used a 4-point Likert scale (0 = "never," 1 = "once," 2 = "a few times," 3 = "often") to rate 19 items taken from the City Stress Inventory ($\alpha = .93$; e.g., "a family member was stabbed or shot", "a friend was robbed or mugged"; Ewart & Suchday, 2002). The age 8 and 10 neighborhood factors were standardized and then averaged ($r = .31$, $p < .001$) to create the final measure.

Peer antisocial behavior. Children, at ages 8 and 10, were asked to identify their friends within the neighborhood. Using a 3-point rating scale (ranging from 0 = "never" to 2 = "always") at age eight and a 4-point rating scale (ranging from 0 = "never" to 3 = "a lot/always") at age 10, they rated their friends' involvement in antisocial behavior (e.g., threatened people, got into fights, drank alcohol). Items for the child-reported peer antisocial behavior measure were chosen from appropriate existing measures, including the Self-report of Delinquency questionnaire (Elliott, Huizinga, & Ageton, 1985) and the Child Behavior Checklist (Achenbach, 1991). The friend antisocial behavior measure exhibited sufficient internal consistency at both ages (αs = .83 and .85 for ages 8 and 10,

respectively). The age 8 and 10 peer antisocial behavior factors were standardized and then averaged (r = .28, p < .001) to create the final measure.

Measures: Mediator

Adolescent antisocial behavior was based on mother, teacher, and child reports. Mother and teacher reports were assessed using the delinquent behavior subscale on the Child Behavior Checklist and Teacher Report Form (Achenbach, 1991), respectively. Items on the delinquent behavior subscales (11 and nine in the CBC and TRF) were rated on a 3-point scale (0 = "not true," 1 = "somewhat true,"' 2 = "very true"). CBC scores at the ages of 11 (α = .71; M = 2.08, SD = 2.26) and 12 (α = .75; M = 2.00, SD = 2.45) were averaged (r = .76, p < .001) to create the mother-reported delinquent behavior factor (M = 2.00, SD = 2.29). The TRF delinquent behavior composite (M = 4.25, SD = 3.74) was based on the mean (r = .53, p < .001) of scores from the ages of 11 (α = .85; M = 4.34, SD = 4.16) and 12 (α = .80; M = 3.84, SD = 3.43). Child report of antisocial behavior was based on 10 items using an abbreviated version of the self-report of delinquency questionnaire (SRD; Elliott, Huizinga, & Ageton, 1985). Using a 3-point rating scale (1 = "never," 2 = "once/twice," 3 = "more often"), children rated the extent to which they engaged in different types of antisocial behaviors (e.g., throwing rocks at people; stealing). The child reported composite (M = 1.81, SD = 1.94) was based on the mean (r = .57, p < .001) of scores at the ages of 11 (α = .69; M = 1.85, SD = 2.25) and 12 (α = .71; M = 1.85, SD = 2.23). Scores for mother, teacher, and child reports were standardized and averaged (α = .70) to create the final adolescent antisocial behavior factor.

Measures: Outcomes

Sibling relationship quality. At the age 15 assessment, the target child was asked to complete the 32-item Sibling Relationship Questionnaire (SRQ), which was adapted from a measure developed by Furman and Buhrmester (1985). The SRQ measures psychologically significant qualities of the sibling relationship as they occur in different situations. There were two sibling relationship quality factors. *Sibling warmth/closeness* ($\alpha = .92$) was defined as the level of affection, intimacy, and prosocial behavior within the sibling relationship. The target child used a 5-point scale (with responses ranging from 1 = "hardly at all" to 5 = "extremely much") to rate their relationship with their sibling closest to their own age living in their home on 12 items (e.g., "How much do you and this sibling tell each other everything?" and "How much do you and this sibling go places and do things together?"). *Sibling conflict* ($\alpha = .80$) was defined as the level of quarreling, antagonism, and overall negativity in the sibling relationship. The adolescents used a 5-point scale (ranging from 1 = "hardly at all" to 5 = "extremely much") on four items and a seven-point scale (ranging from 1 = "not at all in the last month" to 7 = "more than once a day") on the remaining eight items. For the conflict factor, the scores were standardized and averaged to create the final sibling conflict factor.

Monitoring. Parental monitoring (parental solicitation, child disclosure, and parental knowledge) was based on parent and child reports at age 15. This measure was developed for the PMCP but was similar to instruments used in Stattin and Kerr (2000). *Parental solicitation* ($\alpha = .82$ and .82 for youth and mother reports, respectively) is a measure of how often the mother actively requested information regarding the target child's whereabouts and activities and was based on four items (e.g., "How often did

your parents begin or start a conversation with you about who your friends are and what you do together?"). *Child disclosure* (α = .78 and .90 for youth and mother reports, respectively) assesses how often the adolescent initiates conversations with the parents about his whereabouts or activities and also was based on four items (e.g., "How often did you start or begin a conversation with your parents about what you do during nights and weekends?"). *Parental knowledge* (α = .72 and .76 for adolescent and mother reports, respectively) is defined as the extent to which the parent is aware of the adolescents' whereabouts and activities and was assessed using four items (e.g., "To what extent did your parents really know what you did during your free time?"). The final child disclosure and parental knowledge factors were created by averaging mother and adolescent reports (*rs* = .25 and .20, $p < .001$ respectively). Because parent and youth reports of parental solicitation were not significantly related ($r = .10$, *ns*), these factors were not combined and were examined separately.

Parent-child negative relationship quality. Parent-child negative relationship quality at age 15 was created by standardizing and averaging (α = .64) mother, target child, and interviewer ratings. Each target child and mother was asked to complete the Adult-Child Relationship Scale (adapted from the Teacher-Child Relationship Scale; Pianta & Steinberg, 1991), assessing two indicators of relationship quality, *openness/warmth* or how positive the relationship is in regard to the child's emotional needs (e.g., "This child likes telling me about himself") and *conflict/negativity* or the frequency of conflict within the relationship (e.g., "This child stays angry or resists me after being punished"). Participants rated 15 items about their relationship using a 5-point Likert scale (with responses ranging from 1 [definitely not] to 5 [definitely]). The five

warmth/closeness items were reverse scored before summing all items for each mother and target child to create the mother-reported (α = .89) and child-reported (α = .82) components of parent-child negative relationship quality. The source for the third component used in the parent-child relationship factor consisted of interviewer post-assessment impressions on 9 items (e.g., “Did the parent express overt hostility or annoyance towards the child?” “This child was aloof, distant, or unattached to parents”). Interviewers used a 5-point Likert scale (six items with responses ranging from 1 [never or almost never] to 5 [always or almost always] and three items with responses ranging from 1 [very inaccurate] to 5 [very accurate]) to rate behavior of the parent and target child towards each other. After reverse scoring the five positive items, responses were averaged (α = .83) to create the final indicator of the parent-child negative relationship quality variable.

CHAPTER IV

RESULTS

Analysis Overview

First, descriptive statistics were computed. Next, bivariate correlations were used to investigate the first two research questions, focused on the direct links between neighborhood and peer factors and the family variables. Third, following the recommendations of Baron and Kenny (1986), multiple regressions were used to examine pathways A, B, and C (see Figure 1). If all three pathways were significant, Sobel's Test Statistic of Indirect Effects (Sobel, 1982) was computed and multiple regressions were calculated to determine if the independent variable (peer antisocial behavior or neighborhood violence) was related to the dependent variable (family factors) controlling for the mediator, adolescent antisocial behavior. This last set of regressions provided information on how much variance in the link between the IV and DV was being explained by the mediator. If these associations remained significant after controlling for adolescent antisocial behavior, this would be evidence of partial mediation. However, there would be evidence for full mediation if the relations became nonsignificant when controlling for the mediator.

Descriptive Statistics

The descriptive statistics for the sample are listed in Table 1. The means are close to zero for some of the factors because standardization was required in the computation.

Research Question 1

The first research question posed in this study examined the links between neighborhood dangerousness and family factors. As indicated in Table 2, high levels of neighborhood dangerousness were significantly associated with high levels of negative parent-child relationship quality and low levels of parental knowledge. The neighborhood factor was not significantly related to parental solicitation, child disclosure, sibling warmth/closeness, or sibling conflict. Thus, some evidence was found to support the hypothesis that neighborhood violence is directly related to parenting and family relationships.

*Re*search *Question 2*

Next, the links between peer antisocial behavior and parenting and family relationships were investigated. Findings indicated that high levels of affiliation with deviant peers were positively related to negative parent-child relationship quality and sibling conflict and negatively associated with parental knowledge. Significant links were not found between peer antisocial behavior and parental solicitation, child disclosure, or sibling warmth/closeness. Therefore, some support was found that peer antisocial behavior is related to parenting and family relationships.

Research Question 3

The last research question focused on whether adolescent antisocial behavior mediated the links between the extrafamilial (i.e., neighborhood violence, peer antisocial behavior), and intrafamilial (i.e., parenting, family relationships) factors. As indicated in Tables 3 and 4, evidence for mediation was found in five of the fourteen possible mediation pathways tested.

Neighborhood violence. Adolescent antisocial behavior served as a significant mediator for the links between neighborhood violence and two family factors: negative parent-child relationship quality and parental knowledge. The Sobel's indirect effects coefficients were significant for both pathways (see column 5 in Table 3). Also, evidence for full mediation was found for both pathways because the relation between neighborhood dangerousness and the dependent variable became nonsignificant after controlling for adolescent antisocial behavior (see column 4 in Table 3), and the mediator explained nearly 100% of the variance.

Peer antisocial behavior. Significant mediation by adolescent antisocial behavior also was found in the associations between peer antisocial behavior and three family factors: negative parent-child relationship quality, parental knowledge, and sibling conflict (see Table 4). Significant Sobel's indirect effects coefficient was significant for all three pathways (see column 5 in Table 4). For the links between peer antisocial behavior and negative parent-child relations and sibling conflict, evidence for full mediation was found because the link between the independent variable and dependent variable was nonsignificant for all pathways after controlling for adolescent antisocial behavior (see column 4 in Table 4). Evidence for partial mediation was found for the association between peer antisocial behavior and parental knowledge, because the link remained significant after controlling for the mediator as seen in column 4 of Table 4. Adolescent antisocial behavior explained nearly 100% of the variance in the relation between the peer factor and negative parent-child relationship quality and over two-thirds of the variance in the links between peer antisocial behavior and parental knowledge and sibling conflict.

CHAPTER V

DISCUSSION

The purpose of the current study was to investigate the association between neighborhood and peer variables and family factors, and whether adolescent antisocial behavior mediated these links. Results indicated that high levels of neighborhood dangerousness and peer antisocial behavior were associated with high levels of negative parent-child relations and low levels of parental knowledge. Peer antisocial behavior also was found to be positively correlated with sibling conflict. Findings also revealed that the adolescent's involvement in antisocial behavior served as a full mediator for four of these links and as a partial mediator in one of the pathways. Overall, the results suggest that there is evidence that adolescent experiences outside the family influence parenting and relationships within the family. Furthermore, this study supports Bronfenbrenner's idea that contexts outside of the family may influence parenting, family relationships, and individual development.

The first research question involved examining the direct associations between neighborhood dangerousness and negative parent-child relationship quality, monitoring, and sibling relationship quality. Due to the extensive body of research supporting the idea that negative neighborhood quality may influence the socialization processes within the family (Ingoldsby & Shaw, 2002; Lochman, 2004; Sampson, Morenoff, & Gannon-Rowley, 2002), it was expected that neighborhood danger would be directly related to

each of the family variables. The findings supported this hypothesis in that neighborhood violence was positively related to negative parent-child relationship quality and was inversely associated with parental knowledge. Overall, these results are consistent with previous research suggesting that violent and dangerous neighborhoods may increase distress within a family and negatively influence daily interactions among family members (e.g., Linares et al., 2001). Specifically, it is possible that parents in these neighborhoods may be less involved with their children because they are dealing with other stressors common in low-SES communities, such as economic hardship (Deng et al., 2006).

The second research question investigated the links between peer antisocial behavior and negative parent-child relations, monitoring, and sibling relations. Although there has been a lack of studies examining this research question, it was expected that relationships with peers may influence what goes on in families with adolescents. Support for this hypothesis was found in that adolescents who affiliated with highly deviant and antisocial peers tended to have poorer relationships with their parents and siblings. Moreover, peer antisocial behavior was inversely related to parental knowledge. Given that peer relationships may serve as unique and critical socialization contexts (Criss et al., 2002; Ladd, 1999; Lansford et al., 2003), it is possible that the youth learned certain behaviors during their daily interactions with age-mages that carried over to the home. Overall, these finding are consistent with preliminary research (Dishion, 1990; Laird et al., 2008, 2009) which suggests that that peer relationships may influence what goes on in the family.

It should be noted that out of the twelve direct links tested, only five of these were significant. One reason may be the age at which the independent variables were assessed. The amount of unsupervised time that youth are in direct contact with the neighborhood and peers increases significantly through middle childhood and adolescence (Rubin, Bukowski, & Parker, 2006; Dishion & McMahon, 1998). In addition, the influence of peers on adolescent behaviors tends to peak around ninth grade (Smetana, Campione-Barr, & Metzger, 2006). These phenomena suggest that more robust results may have been found if the neighborhood and peer factors had been assessed later when their influence is typically more prominent. Also, given that research has shown differences in friendship quality and its impact on child adjustment in different social contexts (e.g., schools, neighborhoods, churches; Fletcher, Hunter, & Eanes, 2006), it is possible that relationships with peers at school may be more strongly linked to family dynamics compared to neighborhood friendships.

For the last research question, adolescent antisocial behavior was examined as a potential mediator in the links between neighborhood and peer variables and the family factors. As discussed earlier, testing mediation models are important because they help to clarify the underlying mechanisms linking two variables (Baron & Kenny, 1986). In other words, mediators explain *why* two variables are related. Very few studies have examined mediators in the links between these extrafamilial and intrafamilial factors and processes. It was expected that adolescent antisocial behavior would mediate these associations. Some evidence for this hypothesis was found. In particular, evidence for full mediation was found in four of the pathways. Adolescent behavior fully explained the links between neighborhood dangerousness and negative parent-child relationship quality and parental

knowledge and the relations between peer antisocial behavior and negative parent-child relations and sibling conflict. These results are in accordance with previous empirical and theoretical evidence that neighborhoods and peer relationships may serve as contexts for deviancy training (Ingoldsby & Shaw, 2002; Criss et al., 2009; Ladd & Pettit, 2002) and that such deviant and antisocial behavior may influence both parenting and family relationships (Bell, 1968; Lytton, 1990; Patterson et al., 1992; Shaw et al., 2004). A partial mediation effect was found for the link between peer antisocial behavior and parental knowledge. This suggests that peer antisocial behavior may have both direct and indirect effects on parental knowledge. It is possible that parents may disengage from and completely give up on their socialization responsibilities (i.e., parental supervision and tracking) in response to child and peer antisocial behavior (Laird, Pettit, Bates, & Dodge, 2003). It should be noted that mediation effects were not found for seven pathways probably due to the lack of direct effects between the independent and dependent variables. In sum, some evidence was found that adolescent antisocial behavior may explain why neighborhood and peer factors influence the family.

Conclusions, Limitations, and Future Directions

It is important to note that there were several limitations in this study. First, while the use of the low-income, high-risk sample was a strength of the current investigation, the findings need to be replicated in other samples using girls and middle-class families. Second, the neighborhood and peer factors were assessed at ages 8 and 10, ages which may predate the developmental period when both socialization contexts are thought to be most influential in the lives of children and adolescents (Rubin et al., 2006; Dishion & McMahon, 1998; Smetana et al., 2006). Future studies should consider assessing these

factors at later ages. In addition, peer antisocial behavior and sibling relationship quality were based only on target reports. It would have been preferable to have gotten peer and sibling reports, respectively, for each factor. Finally, it is important to note that the selection of variables used in the investigation was not meant to be an exhaustive overview of all possible factors and processes. Indeed, future studies would benefit from the examination of other neighborhood (e.g., collective efficacy), peer (e.g., intimacy), family (e.g., cohesion, harsh discipline), and mediating (e.g., social skills, internalizing behavior) factors.

Despite these limitations, there were several strengths of this study. First, the longitudinal design provided unique opportunities for examining directions in the linkages between these variables. In addition, an attempt was made to use measures that included multi-informant and multi-method approaches. Also, the sample in this study provides a unique feature to the literature. Whereas many researchers use middle-class samples, this study's sample consisted of high-risk families with adolescents. Lastly, this study fills many gaps within the literature by exploring links between neighborhood and peer factors and family relations and investigating why these associations exist.

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APPPENDICES

.

Table 1

Descriptive statistics

	n	*M*	*SD*
1. Neighborhood Violence	235	-.01	.85
2. Peer Antisocial Behavior	230	-.01	.79
3. Adolescent Antisocial Behavior	231	-.02	.76
4. Negative P-C Relations	239	-.00	.76
5. Parental Solicitation (adolescent)	250	3.09	.95
6. Parental Solicitation (mother)	256	3.89	.69
7. Child Disclosure	239	3.12	.75
8. Parental Knowledge	257	4.08	.54
9. Sibling Warmth/Closeness	229	3.07	.79
10. Sibling Conflict	229	-.01	.56

Table 2

Bivariate correlations

	2	3	4	5	6	7	8	9	10
External Factors									
1. Neighborhood Violence	.20**	.31**	.15*	-.07	.05	-.03	-.13*	.03	.05
2. Peer Antisocial Behavior		.32**	.15*	.01	-.09	-.04	-.26**	-.01	.15*
Adolescent Behavior									
3. Adolescent Antisocial Behavior			.44**	-.16*	-.05	-.18**	-.41**	-.08	.19**
Family Factors									
4. Negative P-C Relations				-.28**	-.22**	-.41**	-.51**	-.27**	.29**
5. Parental Solicitation					.15*	.65**	.34**	.34**	-.13
6. Parental Solicitation (mother)						.54**	.29**	.16*	-.12
7. Child Disclosure							.49**	.38**	-.14*
8. Parental Knowledge								.12	-.21**
9. Sibling Warmth/Closeness									-.23**
10. Sibling Conflict									

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

Table 3

Adolescent antisocial behavior as a mediator in the link between neighborhood violence and family factors

IV	DV	IV → AAB Std. β	AAB → DV Std. β	IV → DV Std. β	IV → DV_a Std. β	% of variance explained by AAB	Sobel Test Statistic
Neighborhood Violence	Negative P-C Relations	.31***	.44***	.15*	.02	97.9	4.08***
Neighborhood Violence	Parental Solicitation (A)	.31***	-.16*	-.07	N/A	N/A	N/A
Neighborhood Violence	Parental Solicitation (M)	.31***	-.05	.05	N/A	N/A	N/A
Neighborhood Violence	Child Disclosure	.31***	-.18*	-.03	N/A	N/A	N/A
Neighborhood Violence	Parental Knowledge	.31***	-.41***	-.13*	-.01	99.9	-3.96***
Neighborhood Violence	Sibling Warmth/Closeness	.31***	-.08	.03	N/A	N/A	N/A
Neighborhood Violence	Sibling Conflict	.31***	.19**	.05	N/A	N/A	N/A

Note: $_a$ = controlling for Adolescent Antisocial Behavior (AAB); A = adolescent report, M = mother report; *** $p < .001$, ** $p < .01$, * $p < .05$.

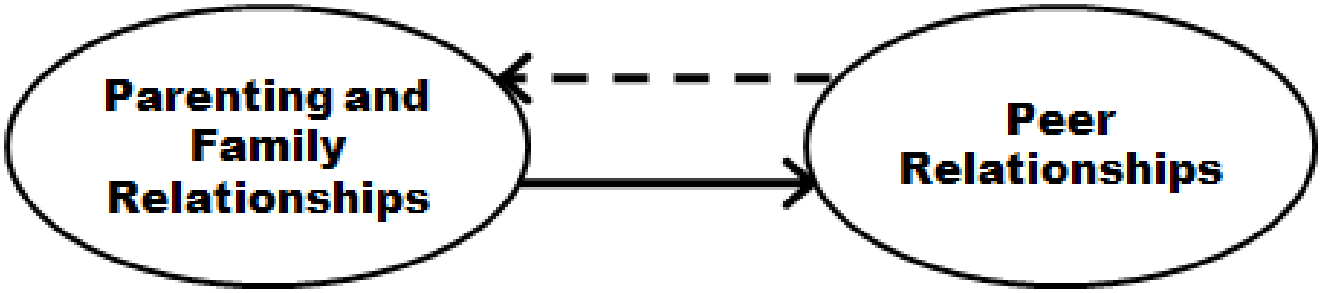
Table 4

Adolescent antisocial behavior as a mediator in the link between peer antisocial behavior and family factors

IV	DV	IV → AAB Std. β	AAB → DV Std. β	IV → DV Std. β	IV → DV_a Std. β	% of variance explained by AAB	Sobel Test Statistic
Peer Antisocial Behavior	Negative P-C Relations	.32***	.44***	.15*	.01	99.4	4.13***
Peer Antisocial Behavior	Parental Solicitation (A)	.32***	-.16*	.01	N/A	N/A	N/A
Peer Antisocial Behavior	Parental Solicitation (M)	.32***	-.05	-.09	N/A	N/A	N/A
Peer Antisocial Behavior	Child Disclosure	.32***	-.18*	-.04	N/A	N/A	N/A
Peer Antisocial Behavior	Parental Knowledge	.32***	-.41***	-.26***	-.16*	68.0	-4.01***
Peer Antisocial Behavior	Sibling Warmth/Closeness	.32***	-.08	-.01	N/A	N/A	N/A
Peer Antisocial Behavior	Sibling Conflict	.32***	.19**	.15*	.09	68.4	2.46*

Note: $_a$ = controlling for Adolescent Antisocial Behavior (AAB); A = adolescent report, M = mother report; *** $p < .001$, ** $p < .01$, * $p < .05$.

Figure 1. Previous focus and gap in the empirical literature on family and peer factors.



Abundant in the literature.

Gap in the empirical literature.

Figure 2. Gap in the empirical literature on neighborhood influences on the family.

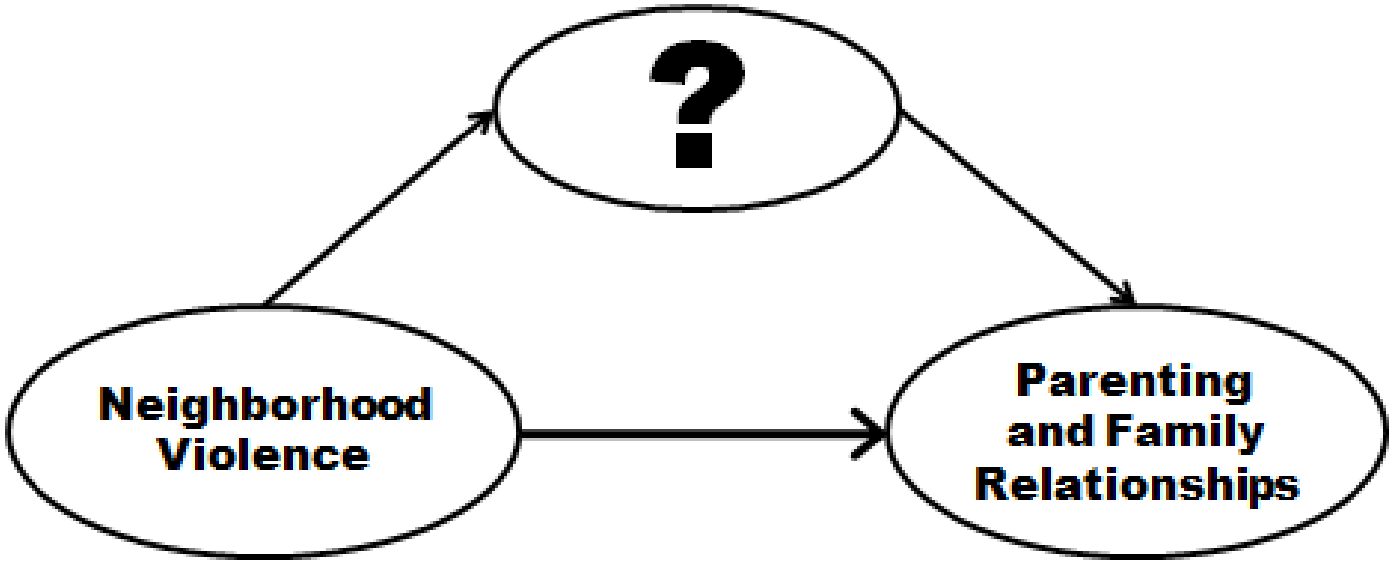
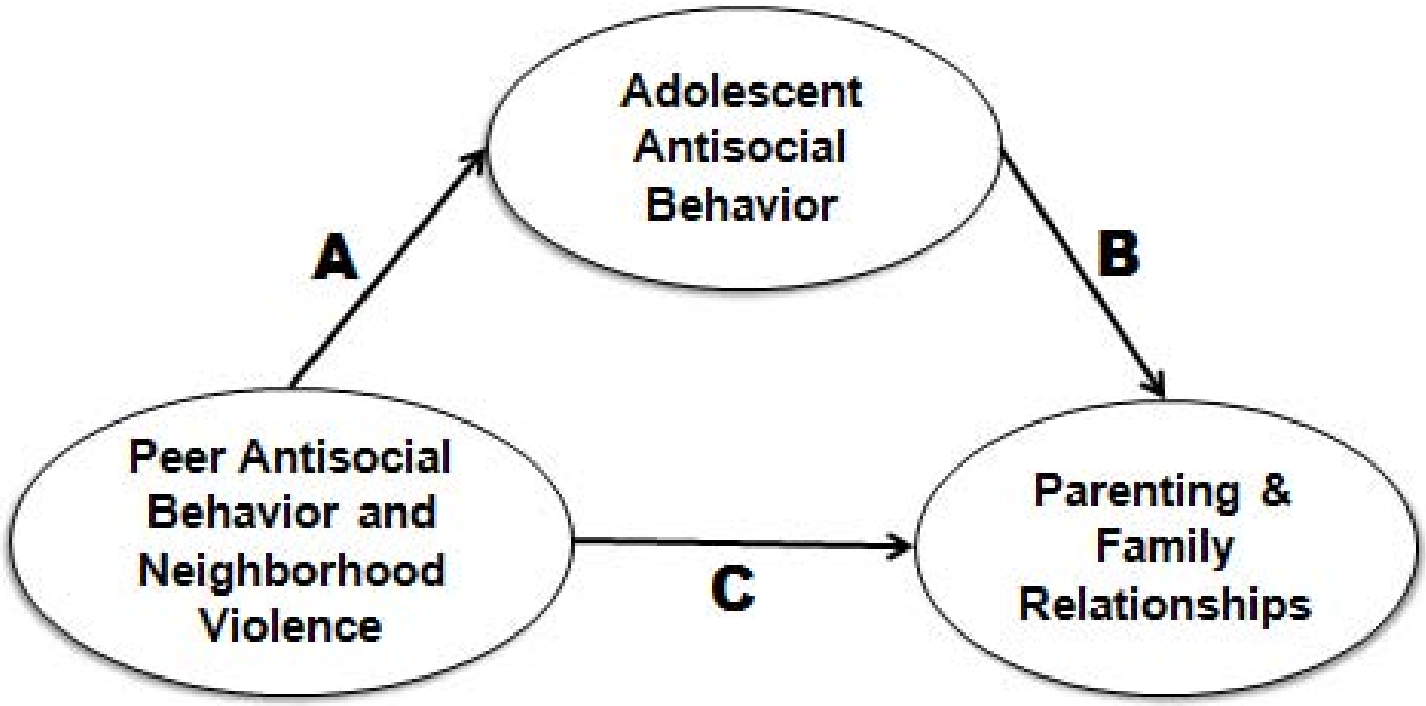


Figure 3. Mediation Model.



VITA

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Master of Science

Thesis: NEIGHBORHOOD VIOLENCE AND PEER ANTISOCIAL BEHAVIOR AS PREDICTORS OF FAMILY RELATIONSHIPS: AN EXAMINATION OF MEDIATION EFFECTS

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Title of Study: NEIGHBORHOOD VIOLENCE AND PEER ANTISOCIAL BEHAVIOR AS PREDICTORS OF FAMILY RELATIONSHIPS: AN EXAMINATION OF MEDIATION EFFECTS

Pages in Study: 40 Candidate for the Degree of Master of Science

Major Field: Human Development and Family Science

Scope and Method of Study:

The purpose of this longitudinal study was to examine the links between neighborhood violence and peer antisocial behavior measured at ages 8 and 10 and family relationships measured at age 15 (i.e., parenting, parent-child relationships, sibling relationships). In addition, the mediating effects of adolescent antisocial behavior measured at ages 11 and 12 on these direct links. The sample consisted of 239 families with sons from the Pitt Mother & Child Project.

Findings and Conclusions:

Results indicated that high levels of neighborhood violence and peer antisocial behavior were associated with high levels of negative parent-child relationship quality and low levels of parental knowledge. Peer antisocial behavior was positively related to sibling conflict. Following the criteria established by Baron and Kenny (1986), next the mediating effect of adolescent antisocial behavior was tested. Some evidence for mediation was found. In general, this longitudinal study provides important information on how adolescents' experiences *outside* of the home may influence what goes on *inside* of the home.

ADVISER'S APPROVAL: Dr. Michael Criss