

Children's Exposure to Intimate Partner Violence and Early Delinquency: Do Parental Involvement, Child Neglect, and Child Assault Mediate its Effects?

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Children who experience trauma due to exposure to intimate partner violence (IPV) have been shown to exhibit higher than average rates of cognitive, psychological, and emotional impairments. Our research uses first five waves of the Fragile Families and Child Well-being Study to examine the effects of exposure to intimate partner violence in early childhood on delinquency at age 9, and investigates whether the effects are mediated by parental involvement and exposure to child neglect and physical assault. Results indicate that children's exposure to IPV at Year 1 and Year 3 had direct effects on their tendency toward delinquent behavior at Year 9, and that parental involvement, child neglect, and child assault also had significant mediating effects. Given the importance of early delinquency to later achievement, the findings may provide implications for early intervention.

Keywords: Child Neglect, Children, Intimate Partner Violence, Delinquency, Child Assault.

Introduction

While effects of children's exposure to intimate partner violence (IPV) have been extensively studied, the majority of studies have focused on outcomes in adolescence and/or adulthood, largely due to limited data (Holt, Buckley, & Whelan, 2008; Sprinkle, 2007). Given the importance of early delinquency to later achievement (Garces, Thomas, & Currie, 2002; Schweinhart et al., 2005), as well as the benefits of early intervention, the aim of this study is to take advantage of a recent longitudinal early-childhood study to examine the effects of children's exposure to IPV on early delinquency, in the hope of identifying effective and early interventions. Additionally, children's exposure to IPV often co-occurs with exposure to child abuse and other environmental stressors, many of which bear similar consequences for delinquent behavior (Moffitt & Caspi, 2003; Herrenkohl et al., 2008).

Children who experience trauma due to exposure to IPV have been shown to exhibit higher than average rates of cognitive, psychological, and emotion impairments (Hughes, 1988; Adamson & Thompson, 1998; Sternberg et al., 2006). They most frequently experience difficulties pertaining to behavioral and emotional functioning, as well as cognitive functioning and attitudes (Sternberg et al., 2006). Several studies demonstrate that children exposed to IPV show relatively low levels of social competence (Adamson & Thompson, 1998); exhibit aggressive, antisocial, fearful, and inhibited behaviors at higher rates than other children (Fantuzzo et al., 1991; Hughes, 1988); and have higher incidence of depression, anxiety, and symptoms of post-traumatic stress disorder (Kilpatrick & Williams, 1997; Maker et al., 1998;

Hughes, 1988). Additionally, these children have been shown to experience higher levels of distress in response to inter-adult conflict (DeJonghe et al., 2005). These psychosocial effects are often manifested in negative behavioral outcomes that include violence, substance use, and delinquency.

Children's exposure to IPV often co-occurs with exposure to child neglect and physical assault, which bear similar consequences for delinquent behavior. Therefore, it is important, while studying the effects of child exposure to IPV, to carefully account for these co-occurring risk factors. Previous studies have analyzed some of these potentially mediating factors. Some research has demonstrated that social support and maternal warmth do not necessarily buffer children from the trauma of exposure to IPV (Sousa et al., 2011; McKloskey et al., 2008), and that exposure to IPV may be a more important predictor of child delinquency than child abuse (Herrera & McCloskey, 2001).

Delinquent behaviors, both externalizing and internalizing, among children exposed to IPV are certainly variable. For instance, exposure to IPV has been shown to have disparate effects on child behavior, depending on the magnitude of violence (Steinberg et al., 1993). Other studies report specific factors that establish particularly high risk for negative behavioral outcomes among children exposed to IPV, including maternal mental health (Huang, Wang, & Warrener, 2010; Levendosky, et al., 2006), stressful life events (Levendosky et al., 2003); and minority status paired with low income level (Bradley & Corwyn, 2002). On the other hand, protective factors such as positive parenting (Levendosky & Graham-Bermann,

2001; Levendosky, et al., 2003), easy child temperament, and cognitive ability (Kolbo, 1996; Buckner, Mezzacappa, & Beardslee, 2003) are associated with less negative behavioral outcomes among child witnesses to IPV.

As individuals' childhood experiences have been empirically shown to affect their later development (Walker, Greenwood, Hart, & Carta, 1994; Graces, Thomas, & Currie, 2002; Schweinhart et al., 2005), childhood delinquency should be an area of focus and concern. Previous studies have demonstrated that IPV tends to be high, and increase, over the course of childhood (Fantuzzo, Boruch, Berirama, Atkins, & Marcus, 1997; Huang, Son, & Wang, 2008). The implication is that many young children are at high risk of exposure to IPV in their households.

This article uses the first five waves of the Fragile Families and Child Wellbeing Study to examine the effects of IPV on child delinquency, while controlling for parental involvement, child neglect, and physical assault. Understanding the effects of IPV on children's behavioral outcomes is important for policymakers, as well as those working directly with families, to design, implement, and assess intervention strategies.

Theoretic Framework

According to Bronfenbrenner's bioecological theory of human development (1979, 1986), children are active beings whose interactions with their environments directly affect their development. Within this theory, a child's enduring environment is comprised of the child's immediate settings, the people with whom the child is engaged, and the activities and behaviors those people engage in with

the child. The “microsystem,” the innermost layer, is comprised of the child and the child’s interpersonal relationships and immediate environments. The “mesosystem” consists of interactions between the various components of the microsystem. The “exosystem” is comprised of factors affecting the microsystem, but does not directly influence the child. Finally, the “macrosystem,” the outermost layer, includes political, social, and cultural elements that impact the child’s environment. Bronfenbrenner’s theory has influenced the conduct of developmental research design; among other things, greater emphasis has been placed on procuring longitudinal data, and on conducting research in children’s natural environments.

Responding to what he perceived to be a misguided focus on the child as a unidirectional or bidirectional subject, Bronfenbrenner posited that greater importance should be placed on the child’s complex system of interconnected environmental layers (micro, meso, exo, and macro systems). Critiquing the reliance on a two-person model, in which one person external to the child, typically the mother, exerts influence, he insisted that it is equally important to analyze the effects of any number of third parties on that two-person system. This “second-order effect” is exemplified by a father’s influence on the interaction between child and mother, whether negative or positive. With regard to this study, mothers’ experiences with their partners, specifically those experiences involving economic abuse and physical violence, are carefully considered as potentially having important impacts on children’s development and behavioral outcomes.

Data and Method

3.1 Data

The data for this article came from the Fragile Families and Child Well-being Study, a longitudinal study designed to provide comprehensive information on the characteristics of parents and the well-being of their children. The data were collected in 20 U.S. cities with populations over 200,000, via stratified random sampling. Between 1998 and 2000, the initial core interviews were conducted at the time of the baby’s birth. The baseline data contained 4,898 mothers. Follow-up core surveys were conducted when the focal child was 1, 3, 5, and 9 years old. The first five waves of surveys (baseline, Year 1, 3, 5, and 9) were used for this paper (see Reichman et al., 2001 for a detailed research design).

Out of the 4,898 eligible mothers at baseline, 4,365 were interviewed at Year 1, 4,231 at Year 3, and 4,139 at Year 5. After the Year-3 interview, families were asked to participate in an in-home assessment in which interviewers assessed the behaviors of the mothers and children and interviewed mothers about their parenting behaviors. For the Year-3 in-home assessment, 3,254 mothers participated, and for the Year-5 in-home assessment, the number was 2,977. At Year 9, FFCWS collected information from parents, child, and teachers. Because of the focus of the paper on early delinquency of the child, data reported by children were used. Out of 4,898 cases, 3,400 children answered the survey at Year 9.

This study takes account of the proper temporal sequence of the independent and dependent variables. We used mothers’ report on IPV at Year 1 and 3 as main independent variable and treated children’s report on delinquency at Year 9 as dependent varia-

ble, while mother’s parental involvement and child maltreatment at Year 5 were considered as mediators. Among the 3,400 children who responded to the Year 9 survey, 119 children did not answer the questions related to delinquency. At Year 1 and Year 3, respectively, 758 and 378 of these children’s mothers did not provide information about exposure to IPV. Given that IPV and delinquency are the main variables of this paper, we chose to focus on the sample with complete information about IPV at both Years 1 and 3, as well as information about delinquency at Year 9. Consequently, we used a sample of 2,410 cases for this paper. Rates of missing information for other independent variables are relatively small, less than 1%, except for parental involvement (6%) and child maltreatment variables (25%) at Year 5. Multiple imputations, with five imputed datasets, were used to predict missing information, assuming that missing observations were missing at random (MAR).

3.2 Measures

Early Delinquency (Year 9) was measured by seventeen delinquent acts from the “Things that You Have Done” scale, used in the Fast Track project, and modeled after the National Youth Survey (Maumary-Gremaud, 2000). Children were asked to self-report their history of participating in each of the following seventeen acts: “Purposely damaged or destroyed property that wasn’t yours,” “taken or stolen something from another person or from a store,” “taken money at home, like from your mother’s purse/dresser,” “cheated on a school test,” “had a fist fight with another person,” “hurt an animal on purpose,” “trespassed into somebody’s garden, backyard, house, or garage,” “run away from home,” “skipped

school without an excuse," "secretly taken a sip of wine, beer, or liquor," "smoked marijuana, grass, pot, weed," "smoked a cigarette or used tobacco," "been suspended or expelled from school," "written things or spray painted on walls or sidewalks or cars," "purposely set fire to a building, a car, or other property or tried to do so," "avoided paying for movies, bus, or subway rides or food," and "thrown rocks or bottles at people or cars." Children responded to each question with a yes or no, and the total number of "yes" answers was summed to measure the level of delinquent activity (Thornberry & Krohn, 2002).

Intimate Partner Violence (Years 1 and 3) was measured in two dimensions: mothers' self-reported experiences with economic abuse and physical abuse. Economic abuse was measured according to the following items: "he tried to prevent you from going to work and/or school" and "he withheld money, made you ask for money, or took your money." Three items are used to measure physical violence: "he slapped or kicked you," "he hit you with his fist or a dangerous object," and "he tried to make you have sex or do sexual things you didn't want to do." When violence occurred at Year 1 or Year 3, occurrence of violence was considered positive. We assessed the level of violence by adding the occurrences of violence at Year 1 and Year 3. Subsequently, the level of violence ranged from 0-2.

Parental Involvement (Year 5) was based on mothers' self-reported engagement in eight activities with their children: "Singing songs or nursery rhymes," "reading stories," "telling stories," "playing inside with toys," "expressing appreciation for something the child did," "playing outside," "taking the child on an out-

ing, or to a restaurant, church, museum, or special event," and "watching television or movies together." We calculated the average number of activities that each mother had engaged in per day, ranging from 0-8.

Child Neglect and Child assault (Year 5) were measured using the Parent-Child Conflict Tactics Scales Coding (Straus, 1998). Accordingly, child neglect was measured according to mothers' self-reported engagement in the following five items with their children: "Have you ever had to leave your child home alone, even when you thought some adult should be with him/her," "Were you ever so caught up with your own problems that you were not able to show or tell your child that you loved him/her," "Were you ever not able to make sure your child got the food he/she needed," "Were you ever not able to make sure your child got to a doctor or hospital when he/she needed it," and "Were you ever so drunk or high that you had a problem taking care of your child." Child assault was measured according to mothers' self-reported engagement in the following five items with their children: Have you "Spanked him/her on the bottom with your bare hand," "hit him/her on the bottom with something like a belt, hairbrush, a stick or some other hard object," "slapped him/her on the hand, arm, or leg," "pinched him/her," and "shook him/her." Both child abuse and child neglect were coded 1 if a mother had reported at least one affirmative response in the past year to any of the above items, and 0 otherwise.

Other explanatory variables include mother and child characteristics that have been shown to affect early delinquency of the child in previous research. Maternal characteristics included age at the time of the focal

child's birth, race, educational attainment at the time of focal child's birth, and relationship status at the time of focal child's birth. The level of education was specified in 3 categories: less than a high school degree, high school degree, and college and above. Relationship status with the child's father at baseline was measured in 4 categories: not romantically involved, visiting, cohabiting, and married. Child characteristics included gender (1 = boy, 0 = girl) and temperament. Maternal perception of child temperament was assessed using a 6-item scale at Year 1: child tends to be shy, often fusses and cries, is very sociable (reverse coded), is easily upset, reacts strongly when upset, and is very friendly with strangers (reverse coded). The scores ranged from 1 (not at all like my child) to 5 (very much like my child); higher scores indicate a more difficult temperament.

3.3 Analytic Techniques

We hypothesize that children's early delinquency at Year 9 is determined by IPV that their mothers had experienced at Years 1 and 3, parental involvement at Year 5, and child neglect and child assault at Year 5. Descriptive analyses were conducted to assess occurrence and level of exposure to IPV in early childhood and early delinquency at Year 9. This was followed by bivariate F-test and multivariate regression analyses to assess the effects of the independent variables on early delinquency.

Results

4.1 Descriptive Statistics

Descriptive statistics of the variables are listed in Table 1. Among our sample of 2,410 mothers, about 33

percent reported having experienced IPV at either Year 1 or Year 3. Among those 33 percent, the incidence of economic abuse was more prevalent than that of physical violence. Approximately 15 percent of mothers reported having experienced physical violence, while 28 percent reported having experienced economic abuse. The average level of IPV experienced by mothers at Year 1 and Year 3 was 0.57, ranged from 0 to 4. The average level of physical violence was 0.2, while the average level of economic abuse was 0.37.

The average age of mothers at the baseline year was approximately 25 years old, with a standard deviation of 5.9. With regard to race and ethnicity, about 22 percent were non-Hispanic white, 44 percent were black, 30 percent were Hispanic, and 4 percent identified as other. Mothers' educational attainment at the baseline year was distributed somewhat evenly among levels: about 33.6 percent had attained less than a high school education, 30.9 percent had graduated from high school, and 35.5 percent had more than a high school education. Mothers' relationship status with their children's fathers at the baseline year varied. Approximately 3 percent of mothers were not romantically involved with the father at that time, 26 percent had "visiting relationships," meaning the father did not reside with the family but was romantically involved with the mother, 44 percent were cohabiting, and 27 percent were married. In terms of parenting behaviors, on average, mothers had engaged in about 5 activities per day with their children at Year 5. In the same year, 11 percent of mothers reported having engaged in one or more neglectful behaviors, and about 75 percent reported having engaged in at least one physically assaultive behavior. About 53 percent of children in the sample were boys, and

their temperament at age 1 was 2.6 on average (1-5 scale, higher scores indicate a more difficult temperament), with a standard deviation of 0.8. The average level of children's engagement in delinquent behavior at age 9 was 1.2, on a scale from 0-17, with a standard deviation of 1.7.

4.2 Bivariate Statistics

We conducted a bivariate analysis of child delinquency and parenting by key variables. Mothers' having experienced IPV at Years 1 and 3, both physical violence and economic abuse, as well as the presence of child neglect and child assault behaviors at Year 5, were all shown to be associated with higher levels of child delinquency at Year 9. For instance, children whose mothers experienced IPV at Year 1 or 3 had higher levels of delinquent behavior at Year 9 (1.31), while children whose mothers never experienced IPV had lower number of reporting delinquent behavior (1.08). Both mothers' experiences with physical violence and economic abuse were associated with a 0.2-point increase of delinquency (physical violence = 1.32-1.12; economic abuse = 1.3-1.1). Mothers who had experienced IPV at Years 1 and 3 reported lower levels of involvement and higher levels of neglectful behaviors toward their children at Year 5. For instance, mothers who had experienced IPV had engaged 0.18 less activity with their children than others, and were 5 percent more likely to neglect their children. Mothers who had experienced economic abuse tend to have significant effects on parental involvement and child neglect, while mothers who had experienced physical violence had significant effects on child neglect and physical assault. Interestingly, the data also illustrates statistically significant associations among different parenting behaviors. Mothers

who exhibited neglect at Year 5 had engaged in 0.43 less activity, while mothers with low levels of parental involvement were 5 percent more likely to neglect their children. Mothers who exhibited neglect also had 5 percent higher chance of physically assaulting their children, while physically assaultive mothers were 4 percent more likely to neglect their children.

Table 3 presents the regression estimates of child delinquency at Year 9. Model 1 estimates the effects of exposure to IPV at Year 1 and 3 on child delinquency at Year 9, controlling for mothers' demographic characteristics, their relationship status with fathers, and children's gender and temperament. Model 2 reflects Model 1, while additionally controlling for parental involvement, child neglect, and child assault at Year 5. Models 3 and 4 reflect the latter two, but replace the occurrence of IPV with the occurrences of physical violence and economic abuse. These results indicate that children whose mothers had experienced IPV at Years 1 and 3 exhibited delinquency levels that were 0.24 points higher than those of children whose mothers had never experienced IPV, holding all other variables constant. The coefficient dropped to 0.21 points when parental involvement, child neglect, and child assault are controlled for. This demonstrates that the association between exposure to IPV and child delinquency is slightly weakened when parenting behaviors are accounted for, but remains significant. Model 2 shows that children who experienced neglect had 0.43-point higher levels of delinquency, compared to those who had never been neglected. Children who had experienced child assault had 0.28-point higher levels of delinquency, compared to those who had never been assaulted. The results in model 3 indicate that mothers' experiences

with economic abuse led to 0.2-point higher levels of child delinquency at Year 9. This coefficient drops to 0.17 in model 4 when parenting behaviors are controlled for. The effects of parental neglect and assault on child delinquency are considerable in both models 2 and 4.

Every additional year of age of mothers at the baseline year was associated with a 0.02-point decrease in the level of child delinquency. Using non-Hispanic white mothers as a reference point, children whose mothers were non-Hispanic black exhibited significantly higher levels of delinquency, while children whose mothers were Hispanic exhibited lower levels of delinquency. Educational attainment also played an important role. Children whose mothers had not obtained a high school degree presented with higher levels of delinquency compared to those whose mothers had a high school degree or higher. Compared to children whose parents had been married at their birth, those whose parents had not been romantically involved had higher level of delinquency at Year 9. However, this significance vanishes after controlling for parental involvement, child neglect and physical assault. Child gender makes a difference as well. Boys also had higher level of delinquency than girls. The occurrence of physical violence at Year 1 and 3, parental involvement at Year 5, and child temperament were not associated with child delinquency at Year 9.

Table 4 shows our regression estimates of parenting at Year 5, which includes parental involvement, child neglect, and physical assault. When holding all other variables constant, mothers' experiencing IPV at Year 1 and 3 was associated with 0.18-point lower involvement at Year 5. For child

neglect behavior, compared to mothers reported no violence at Year 1 and 3, mothers who experienced IPV had 27 percent greater odds of having neglect behavior. Finally, for parental assault, mothers who experienced IPV also had 27 percent greater odds of physically assaulting their children than mothers without IPV experiences.

As for other variables, mothers who were older had lower levels of involvement but less likely to physically assault their children at Year 5 than younger mothers. Non-Hispanic black mothers and Hispanic mothers had lower involvement but more likely to neglect or assault their children than Non-Hispanic white mothers. The gender of the child was also associated with mothers' parenting behaviors. Mothers of boys exhibited lower levels of parental involvement, as well as higher levels of assault, than mothers of girls. Mothers who had not obtained a high school degree had higher odds of both neglecting and physically assaulting their children, compared to mothers who had obtained high school or higher education.

Table 5 presents robust tests of IPV specifications on child delinquency regression at Year 9. Two specifications are presented: the occurrence and the level of IPV at Years 1 and 3. The first specification reflects the information in Table 3. The second specification's findings demonstrate that the level of IPV does make a difference on child outcomes. For instance, when mothers experienced IPV at both Year 1 and Year 3, their children exhibited higher level of delinquency (0.1*4) than children whose mothers reported no IPV at either point.

Finally, table 6 presents robust tests of parenting regression at Year 5, consisting of four models. The first

model is identical to that found in Table 4. Model 2 replaced the occurrence of IPV with the occurrence of physical violence and economic abuse. Models 3 and 4 mirror models 1 and 2, with the exception that "occurrence of IPV" variables were replaced by the "level of IPV" variables. The results show that both the occurrence and the level of IPV make a difference in affecting outcomes. The intensity of overall IPV significantly reduced the levels of parental involvement, and increased the odds of parental neglect and assault. In addition, higher levels of physical IPV were associated with higher likelihood of parental assault. This fact demonstrates that the level of physical IPV is an important risk factor for child abuse. The more physical violence mothers experienced at Year 1 and Year 3, the more likely they were to physically assault their children at Year 5.

Discussion and Conclusion

This study examined the effects of children's exposure to IPV at Year 1 and Year 3 on the behavior problems of children at Year 9, and investigated whether parenting at Year 5 mediated those effects. The data used for this paper were observed longitudinally, across 9 years, which allowed us to observe and analyze changes in the variables over time. The findings indicated that children's exposure to IPV at Year 1 and Year 3 had direct effects on their tendency toward delinquent behavior at Year 9. The association between early exposure to IPV and delinquency in later childhood was still significant after controlling for parental involvement, child neglect, and child assault at Year 5.

The results also illustrate important impacts of parental behaviors, and the effects of IPV on such behav-

iors. The presence of child neglect and child assault at Year 5 was found to be associated with later child delinquency at Year 9. Mothers who had experienced IPV at Year 1 and Year 3 reported lower levels of involvement, and were more likely to demonstrate neglect, at Year 5. Additionally, the results demonstrate significant associations among different parenting behaviors. For instance, mothers who engaged in neglectful behaviors presented lower levels of involvement, and were also more likely to physically assault their children. These complex interactions can be considered through the lens of Bronfenbrenner's bioecological theory of human development, in which children are affected not only by their immediate surroundings, and closest relationships, but also by the interplay among external circumstances and parties on their micro- and meso-systems.

According to our findings, there are persistent, long-term effects of children's early exposure to IPV. Early interventions, both on IPV and parenting, may provide important means to prevent later behavioral problems. Such interventions might provide important pathways to reducing childhood delinquency. Programs and policies aimed at IPV, in particular, would benefit from better understanding of the extent to which exposure to IPV can impact early childhood development. Through these related programs and policies, parents should be equipped with sufficient information about the ways their young children, who cannot fully comprehend the IPV they witness, are still negatively impacted by its presence. Additionally, future research on the impacts of IPV on children's development can benefit from Bronfenbrenner's understanding of second-order effects. Whether or not fathers are in-

involved directly in their children's lives, their interactions with their partners can have dramatic impacts on their children's behavioral outcomes.

Intimate partner violence had negative impacts on mothers' parenting over time, as well as on children's behavior during later childhood. More research is necessary to more fully understand the interactions of these variables, as well as the interactions of other, external environmental and interpersonal factors, on children's development and behavioral health. For instance, it will be important to better understand the role of fathers and their potential to positively or negatively mediate the impacts of IPV, child neglect, and physical assault. Further research might also explore how the behavioral outcomes of children exposed to IPV vary in different settings, such as school or in peer groups. Previous studies have shown that children exposed to IPV are at increased risk for either bullying, or being victimized by peers (Baldry 2003; Bowes et al. 2009; Cluver, Fincham, & Seedat, 2009; Holt et al. 2008; Moretti et al. 2006; Mustanoja et al. 2011) — outcomes that are mediated by psychological problem behavior, lower academic success, and problematic peer relations (Voisin & Hong, 2012). It is important to explore how exposure to IPV, child neglect, and child assault might affect children differently in other settings, and how such effects might interact with their home environments.

The results should be interpreted within the context of several limitations. First, in light of sample attrition, the final sample only included about 49% of the original sample, which may limit the generalization of our findings. Second, the information obtained about mothers' experiences with IPV, and their engagement in be-

haviors consistent with child neglect and physical assault, was self-reported and thus subject to reporting error. This reporting error also applies to children's self-reported engagement in delinquent behaviors. Despite these limitations, this paper increases our understanding of the effects of exposure to IPV on children's behavioral outcomes.

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Table 1: Characteristics of Main Variables

	Mean (S.D.)
Mother's Characteristics	
Age at Baseline	25.1 (5.9)
Race [%]	
Non-Hispanic White	22
Black	44.4
Hispanic	29.4
Other Race	4.2
Educational Attainment at Baseline [%]	
Below High School	33.6
High School	30.9
Above High School	35.5
Relationship Status at Baseline [%]	
Not Involved	3.3
Visiting	26.0
Cohabiting	43.6
Married	27.1
Occurrence of IPV at Y1& Y3 [%]	0.33
Physical Violence at Y1 & Y3 [%]	0.15
Economic Abuse at Y1 & Y3 [%]	0.28
Level of IPV at Y1& Y3 [0-4]	0.57
Physical Violence at Y1 & Y3 [0-2]	0.20
Economic Abuse at Y1 & Y3 [0-2]	0.37
Parental Involvement at Y5 [0-8]	5.2 (1.3)
Child Neglect at Y5 [%]	11.0
Child Assault at Y5 [%]	74.8
Delinquency at Y9 [0-17]	1.2 (1.7)
Child's Characteristics	
Boy [%]	52.9
Temperament at Year 1 [1-5]	2.6 (0.8)
N	2410

Standard deviation appears in parentheses.

Table 2. Bivariate Analyses of Early Delinquency and Key Variables

	Year 9	Year 5	Year 5	Year 5
	Delinquency	Involvement	Neglect	Assault
IPV at Y1& Y3				
No	1.08	5.29	0.09	0.75
Yes	1.31	5.11	0.14	0.76
F-Test	24.3 ***	23.2 ***	23.8 ***	0.7
Physical Violence at Y1& Y3				
No	1.12	5.23	0.10	0.75
Yes	1.32	5.21	0.14	0.79
F-Test	10.4 **	0.4	9.7 **	4.5 *
Economic Abuse at Y1& Y3				
No	1.10	5.29	0.09	0.76
Yes	1.30	5.09	0.14	0.76
F-Test	15.4 ***	25.5 ***	22.5 ***	0.3
Parental Involvement at Y5				
Low (Below Mean)	1.11	---	0.13	0.76
High (Mean and Above)	1.20	---	0.08	0.75
F-Test	3.6	---	25.1 ***	0.2
Child Neglect at Y5				
No	1.12	5.28	---	0.75
Yes	1.47	4.85	---	0.80
F-Test	19.6 ***	51.1 ***	---	6.5 *
Child Assault at Y5				
No	0.84	5.25	0.08	---
Yes	1.27	5.23	0.12	---
F-Test	58.8 ***	0.1	12.6 ***	---

Table 3: Regression Estimates of Early Delinquency at Year 9

	Model 1			Model 2			Model 3			Model 4		
	B	S. E.	P	B	S. E.	P	B	S. E.	P	B	S. E.	P
Mother's Characteristics												
Occurrence of IPV at Year 1-3	0.24	0.07	**	0.21	0.07	**	---	---		---	---	
Occurrence of Physical Violence at Year 1-3	---	---		---	---					---	---	
Occurrence of Economic Abuse at Year 1-3	---	---		---	---		0.10	0.10		0.07	0.10	
Parental Involvement at Y5	---	---					0.20	0.08	*	0.17	0.08	*
Child Neglect at Y5	---	---		0.02	0.03		---	---		0.02	0.03	
Child Assault at Y5	---	---		0.43	0.13	**	---	---		0.43	0.13	**
Age	---	---		0.28	0.09	**	---	---		0.27	0.09	**
	-									-		
Non-Hispanic Black	0.02	0.01	**	-0.02	0.01	*	-0.02	0.01	**	0.02	0.01	*
						**						**
Hispanic	0.49	0.09	***	0.48	0.09	*	0.49	0.09	***	0.48	0.09	*
	-									-		
Other Race	0.25	0.10	*	-0.23	0.10	*	-0.24	0.10	*	0.22	0.10	*
	-									-		
Below High School	0.15	0.19		-0.15	0.19		-0.14	0.19		0.14	0.19	
High School	0.19	0.09	*	0.21	0.09	*	0.19	0.09	*	0.21	0.09	*
Non-Involved at Baseline	0.05	0.09		0.06	0.09		0.05	0.09		0.06	0.09	
Visiting at Baseline	0.35	0.18	*	0.31	0.18		0.36	0.18	*	0.31	0.18	
Cohabited at Baseline	0.11	0.11		0.10	0.11		0.11	0.11		0.10	0.11	
	-									-		
	0.01	0.09		-0.03	0.09		-0.01	0.09		0.03	0.09	
Child's Characteristics												
Boy						**						**
	0.65	0.07	***	0.65	0.07	*	0.65	0.07	***	0.64	0.07	*
Temperament	-									-		
	0.03	0.04		-0.03	0.04		-0.03	0.04		0.03	0.04	
Constant	1.00	0.23	***	0.60	0.31		1.00	0.23	***	0.60	0.31	

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

Table 4: Regression Estimates of Parenting at Year 5

	Involvement			Neglect			Assault		
	B	S. E.	P	Odds	S. E.	P	Odds	S. E.	P
Mother's Characteristics									
Occurrence of IPV at Year 1-3	-								
Age	0.18	0.06	**	1.27	0.12	*	1.27	0.17	+
Non-Hispanic Black	-		**	1.00	0.01		0.96	0.01	**
	0.03	0.01	*						*
Hispanic	-		**	1.06	0.13		1.44	0.23	*
	0.34	0.08	*						
Other Race	-		**	1.50	0.20	**	0.78	0.13	
	0.47	0.09	*						
Below High School	-			1.57	0.38	+	0.87	0.26	
	0.02	0.16							
High School	-			1.26	0.15	+	0.75	0.12	+
	0.14	0.08							
Non-Involved at Baseline	-			1.13	0.13		0.87	0.13	
	0.05	0.07							
Visiting at Baseline	0.57	0.15	**	0.67	0.17		1.10	0.35	
			*						
Cohabited at Baseline	0.13	0.09		0.94	0.13		0.99	0.18	
	0.10	0.08		1.08	0.13		1.07	0.16	
Child's Characteristics									
Boy	-			1.09	0.10		1.35	0.15	*
	0.12	0.05	*						
Temperament	-			1.03	0.06		1.13	0.09	
	0.07	0.04							
Constant			**			**			**
	6.54	0.20	*	0.30	0.09	*	9.45	3.70	*

Note: + p < .10; * p < .05, ** p < .01, *** p < .001

Table 5: Robust Tests of Delinquency Regression at Year 9

	Model 1			Model 2			Model 3			Model 4		
	B	S. E.	P									
Occurrence Specifications												
Occurrence of IPV at Year 1-3	0.24	0.07	*	0.21	0.07	*	---	---	---	---	---	---
Occurrence of Physical Violence at Year 1-3	---	---	---	---	---	---	0.10	0.10	---	0.07	0.10	---
Occurrence of Economic Abuse at Year 1-3	---	---	---	---	---	---	0.20	0.08	*	0.17	0.08	*
Parental Involvement at Y5	---	---	---	0.02	0.03	---	---	---	---	0.02	0.03	---
Child Neglect at Y5	---	---	---	0.43	0.13	*	---	---	---	0.43	0.13	*
Child Assault at Y5	---	---	---	0.28	0.09	*	---	---	---	0.27	0.09	*
Level Specifications												
Level of IPV at Year 1-3	0.10	0.04	*	0.08	0.04	*	---	---	---	---	---	---
Level of Physical Violence at Year 1-3	---	---	---	---	---	---	0.03	0.08	---	0.01	0.08	---
Level of Economic Abuse at Year 1-3	---	---	---	---	---	---	0.14	0.06	*	0.13	0.06	*
Parental Involvement at Y5	---	---	---	0.02	0.03	---	---	---	---	0.02	0.03	---
Child Neglect at Y5	---	---	---	0.44	0.13	*	---	---	---	0.44	0.13	*
Child Assault at Y5	---	---	---	0.27	0.09	*	---	---	---	0.28	0.09	*

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

Table 6: Robust Tests of Parenting Regression at Year 5

	Involvement			Neglect			Assault		
	B	S. E.	P	Odds	S. E.	P	Odds	S. E.	P
Model 1									
Occurrence of IPV at Year 1-3	-0.18	0.06	*	1.27	0.12	*	1.27	0.17	+
Model 2									
Occurrence of Physical Violence at Year 1-3	0.04	0.09	---	1.19	0.16	---	1.69	0.35	*
Occurrence of Economic Abuse at Year 1-3	-0.22	0.07	*	1.16	0.12	---	1.01	0.14	---
Model 3									
Level of IPV at Year 1-3	-0.09	0.03	*	1.13	0.05	**	1.17	0.08	*
Model 4									
Level of Physical Violence at Year 1-3	0.00	0.06	---	1.14	0.11	---	1.53	0.25	**
Level of Economic Abuse at Year 1-3	-0.16	0.05	*	1.12	0.09	---	1.00	0.11	---

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

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