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# Children's Exposure to Intimate Partner Violence and Early Delinquency

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**Abstract** 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 the 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 (as measured by their mothers' experiences with physical violence and economic abuse) on delinquency at age nine. It also investigates whether these effects are mediated by parental involvement and exposure to child neglect and physical punishment. 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 physical punishment 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 · Economic abuse · Parental involvement · Physical punishment

## Introduction

The effects of children's exposure to intimate partner violence (IPV) have been increasingly studied in recent years, as

debates about the implications for child welfare systems have heated up. While IPV is a complex, multi-component phenomenon, research on youth exposure has generally focused on the effects of exposure to physical and psychological abuse, and only recently begun to look at the effects of exposure to economic abuse (DeBoard-Lucas and Grych 2011; Herman-Smith 2013; Herrenkohl et al. 2008; Koutselini and Valanidou 2013; Øverlien 2010; Stylianou et al. 2013; Sternberg et al. 2006). Due in part to limited data, early research pertaining to IPV exposure examined outcomes primarily in adolescence and/or adulthood (Holt, Buckley, and Whelan 2008; Sprinkle 2007). Recently, however, there has been a surge of interest in more short-term outcomes of IPV exposure, particularly among school-aged children (DeBoard-Lucas and Grych 2011; Herman-Smith 2013; Herrenkohl et al. 2008; Sternberg et al. 2006).

Past research has explored the cognitive processes by which children appraise and understand IPV, which is helpful to understanding the short- and long-term negative outcomes that many exhibit. DeBoard-Lucas and Grych assessed the thoughts and feelings of children aged 7–12, as expressed in semi-structured interviews, and found they were often focused on consequences, as well as the possible reasons for fights (DeBoard-Lucas and Grych 2011). This study also showed that reactions of sadness and anger were more common than anxiety. These findings indicate that young children actively process and strive to understand IPV, and are not only emotionally affected, but also aware of their own suffering. The ecobiodevelopmental (EBD) framework holds that such early, unresolved stress in children, toddlers, and even infants, can detrimentally affect development. From this perspective, extreme stress gives rise to physiologic responses that lead to both short- and long-term symptoms (Herman-Smith 2013).

In line with this framework, research has shown that childhood exposure to IPV often produces emotional and

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psychological harm in various forms. Children who are exposed to IPV have been shown to exhibit higher than average rates of cognitive, psychological, and emotional impairments (Sternberg et al. 2006). Those affected most frequently experience difficulties pertaining to behavioral and emotional functioning, as well as cognitive functioning and attitudes (Sternberg et al. 2006). Several studies have demonstrated that children exposed to IPV show relatively lower levels of social competence than others in the same age groups (Koutselini and Valanidou 2013; Øverlien 2010), and exhibit aggressive, antisocial, fearful, and inhibited behaviors at higher rates than other children (Moylan et al. 2010; Sousa et al. 2011). With regard to psychopathology, exposed children have been shown to exhibit higher rates of depression, anxiety, and symptoms of post-traumatic stress disorder (Garrido, Culhane, Petrenko, and Taussig 2011; Øverlien 2010), as well as increased risk for disruptive behavior disorders (Miranda, de la Osa, Granero, and Ezpeleta 2011). Additionally, children exposed to IPV have been shown to experience higher levels of distress than their peers in response to inter-adult conflict (DeJonghe, Bogat, Levendosky, Von Eye, and Davidson 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 abuse and other environmental stressors, many of which bear similar consequences for delinquent behavior (Herrenkohl et al. 2008; Sousa et al. 2011). In a cross-sectional study of 1,094 Hong Kong children, Chan found that higher risk of experiencing physical maltreatment was associated with exposure to IPV (2011). Some past research has explored the effects of dual exposure to IPV and child abuse, or the "double whammy" effect. Spilsbury et al. (2007) found that children's dual exposure was associated with clinically significant levels of several trauma symptoms, as well as behavior problems. In another recent study, children who experienced dual exposure were shown to exhibit higher externalizing and internalizing behavior scores than children who had only witnessed IPV (Sternberg et al. 2006). Interestingly, those children aged four to nine who had experienced dual exposure were at higher risk for externalizing behavior, while older children were at higher risk for internalizing problems (Sternberg et al. 2006).

It is important to note that outcomes among children exposed to IPV are quite variable, and that a host of risk and protective factors have been shown to mediate harms. Research on this topic tends to disregard or minimize the "incredible resilience" of children exposed to IPV, and the buffering effects of their support systems and coping skills (O'Brien, Cohen, Pooley, and Taylor 2013; Stark 2009). Indeed, many protective factors have been shown to positively mediate the effects of children's exposure to IPV—including positive parenting (Levendosky, Huth-Bocks, Shapiro, and

Semel 2003), positive self-image and self-esteem (Bolger and Patterson 2001), having a positive relationship with at least one caring and nonabusive adult (Lynskey & Fergusson 1997), having parents and peers who disapprove of antisocial behavior (Herrenkohl et al. 2005), easy child temperament, involvement in a religious community, and cognitive ability (Buckner, Mezzacappa, and Beardslee 2003). Research has found that these and other protective factors are typically associated with less negative behavioral outcomes among children who have witnessed IPV.

On the other hand, there are a number of risk factors that have been shown to negatively mediate the outcomes of children exposed to IPV. These include higher magnitudes and frequency of violence (Sternberg et al. 1993), maternal mental health problems (Huang et al. 2010; Levendosky, Leahy, Bogat, Davidson, and Von Eye 2006), stressful life events (Levendosky et al. 2003); and minority status paired with low income level (Bradley and Corwyn 2002). Socioeconomic stressors, such as poverty, neighborhood disadvantage, and community violence, are also key risk factors that can undermine children's resiliency (Herrenkohl et al. 2008).

Overall, childhood experiences have been empirically shown to importantly affect later development (Garces et al. 2002; Schweinhart et al. 2005). Some research suggests that exposure to IPV may be a stronger predictor of child delinquency than is physical abuse (Herrera and McCloskey 2001). It is unsurprising then, that childhood exposure to IPV and its effects on children's well-being and behavior should be an area of focus and concern. Child abuse, child neglect, and exposure to IPV exist across socioeconomic, educational, racial, and cultural lines (Pinheiro 2006; Chan 2011). In the U.S. alone, it is estimated that 15.5 million children reside in homes where they are exposed to some form of recurrent IPV (McDonald, Jouriles, Ramisetty-Mikler, Caetano, and Green 2006). Alarming, previous studies have demonstrated that IPV tends to be high, and increase, over the course of childhood (Fantuzzo, Boruch, Beriama, Atkins, and Marcus 1997; Huang et al. 2010), and young children are more likely than school-age children to be present for incidents of IPV (Herman-Smith 2013). The implication is that many young children are at high risk of exposure to IPV in their households.

Moving forward, it is necessary to develop a clearer understanding of how exposure to different forms of IPV, combined with various parenting behaviors, affects children's development and behavior. Such an understanding bears important consequences for professionals working in the fields of domestic violence and child welfare, those designing and implementing interventions for IPV victims and their children, law enforcement officials, teachers and school social workers, and policymakers. Given the potential impacts of IPV exposure on child development, the effects of early delinquency to later achievement (Garces, Thomas, and Currie 2002;

Schweinhart et al. 2005), and the known 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. This study examines the effects of exposure to both physical and economic forms of IPV. While extant literature has thoroughly explored the effects of exposure to physical violence, the topic of economic abuse has only recently begun to garner a research focus. In light of our literature review, this study also examines the complex relationships among IPV exposure and several parenting behaviors that have shown to be key determinants of child outcomes: involvement, neglect, and physical punishment.

Our research question is: Does children's exposure to IPV affect early delinquency? If so, is this relationship mediated by maternal parenting behaviors? This article uses the first five waves of the Fragile Families and Child Wellbeing Study to examine the effects of IPV – as measured by mothers' experiences with physical violence and economic abuse—on child delinquency, while controlling for parental involvement, child neglect, and physical punishment. We hope that our findings will contribute to a clearer understanding of childhood IPV exposure, which can potentially shape the design, implementation, and evaluation of effective policies and interventions.

## 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.

According to our review of the extant literature of IPV exposure, the most important protective and risk factors that mediate outcomes of IPV exposure are indeed related to families' cultural beliefs and values, neighborhood and community settings, family environments, and child's characteristics. Likewise, bioecological factors weigh importantly on children's risk for experiencing physical punishment and neglect. These include SES, parental employment and education, and housing situation (macrosystem); parental substance abuse, marital status, and stress levels (mesosystem); and the child's birth weight, temperament, and special needs (microsystem) (Stith et al. 2009; U.S. Department of Health and Human Services 2011). Bronfenbrenner also highlighted the particular importance of parental involvement in shaping children's development and behavior. According to his theory, children require strong mutual attachments, complex emotional relationships, joint activities, and socially supportive exchanges with their caregivers (1990). These ecological principles governing child development are reflected in our measurement of parental involvement, which will be discussed in the following section.

## Data and Method

### Data

The data for this study 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 one, three, five, and nine years old. The first five waves of surveys (baseline, Year 1, 3, 5, and 9) were used for this paper (see Reichman, Teitler, Garfinkel, and McLanahan 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' reports of IPV at Year 1 and 3 as the main independent variable and treated children's reports of delinquency at Year 9 as dependent variable, while mother's parental involvement and child maltreatment (neglect and physical punishment) 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 (i.e., neglect and physical punishment; 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).

## Measures

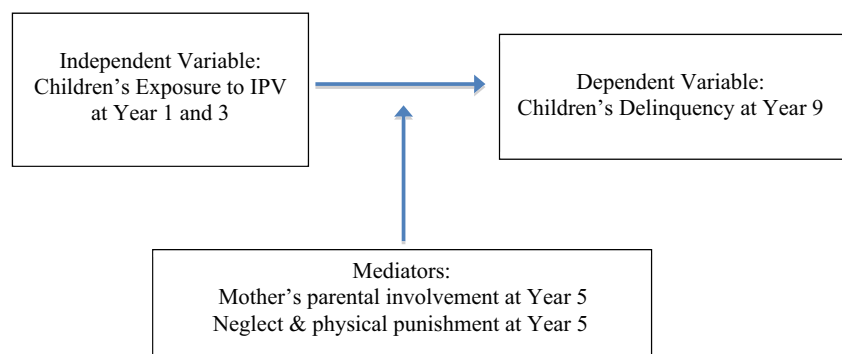
*Early Delinquency (Year 9)* was measured by seventeen delinquent acts from the "Things that you have done" scale, used

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 (Cronbach's  $\alpha = .70$ ): "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 and Krohn 2002).

*Intimate Partner Violence (Years 1 and 3)* was measured in two dimensions: mothers' self-reported experiences with *physical violence* and *economic abuse*. Three items were 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." Sexual violence was treated as one type of physical violence due to low prevalence (less than 4 %), and its high correlation with physical violence variable,  $r = .41$ . *Economic abuse* was measured according to the following items (Huang et al. 2013): "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." 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 physical violence and economic abuse ranged from 0 to 2. In total, the level of violence ranged from 0 to 4.

*Parental Involvement (Year 5)* was based on mothers' self-reported engagement in eight activities with their children:

**Fig. 1** Hypothetical Model of Exposure to IPV, Parental Involvement, and Early Delinquency





“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 outing, 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 to 8.

*Child Neglect and Physical Punishment (Year 5)* were measured using the Parent–child Conflict Tactics Scales Coding (Straus et al. 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.” *Physical Punishment* 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 neglect* and *physical punishment* 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 four categories: not romantically involved, visiting (meaning the father did not reside with the family but was romantically involved with the mother), 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 for each item ranged from 1 (not at all like my child) to 5 (very much like my child); higher scores indicate a more difficult temperament. The score for the entire scale was measured by the mean of the sum score for the six items.

**Analytic Techniques**

Figure 1 presents the hypothetical model of this study. We hypothesize that children’s early delinquency at Year 9 is determined by their exposure to IPV at Years 1 and 3, mothers’ parental involvement at Year 5, and the existence of child neglect and physical punishment at Year 5. First, 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 analyses of early delinquency and key variables. Finally, multivariate regressions were performed to examine the effects of exposure to IPV and child maltreatment (i.e., child neglect and physical punishment) on child early delinquency. Ordinary Least-Squares (OLS) regression was performed to analyze parental involvement and child delinquency. Logistic regression was

**Table 1** Characteristics of Main Variables

	Mean (S.D.)
<b>Mother’s Characteristics</b>	
Age at Baseline	25.1 (5.9)
Race [%]	
Non-Hispanic White	22
Black	44.4
Hispanic	29.4
Other Race	4.2
<b>Educational Attainment at Baseline [%]</b>	
Below High School	33.6
High School	30.9
Above High School	35.5
<b>Relationship Status at Baseline [%]</b>	
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
Physical Punishment at Y5 [%]	74.8
Delinquency at Y9 [0–17]	1.2 (1.7)
<b>Child’s Characteristics</b>	
Boy [%]	52.9
Temperament at Year 1 [1–5]	2.6 (0.8)
N	2,410

Standard deviation appears in parentheses

performed to analyze child neglect and physical punishment, because of their two-level responses.

## Results

### Descriptive Statistics

Table 1 presents the descriptive statistics for all variables. Among the 2,410 mothers in our sample, about 33 % reported having experienced IPV at either Year 1 or Year 3. Among those 33 %, 15 % of mothers reported having experienced physical violence, and 28 % reported having experienced economic abuse. On a 0–4 scale, the average level of IPV experienced by mothers was 0.57. Specifically, the average level of physical violence was 0.2, and the average level of economic abuse was 0.37.

At the baseline year, the average age of the mother respondents was approximately 25, with a standard deviation of 5.9. The majority had education levels above high school

(35.5 %), followed by below high school (33.6 %), and high school (30.9 %). The status of mothers' relationships with their children's fathers varied. These included cohabiting (43.6 %), married (27.1 %), visiting relationship (26 %), and not romantically involved (3.3 %).

At year 5, mothers on average engaged in five activities every day with their children; 11 % of mothers reported having engaged in one or more neglect behaviors toward their children; and 75 % reported one or more act of physical punishment toward their children. On a 0–17 scale, the average level of children's delinquent behavior at age nine was 1.2, with a standard deviation of 1.7.

### Bivariate Results

Table 2 presents findings from bivariate analyses of key variables, according to the presence of IPV, parental involvement, and child maltreatment (i.e., child neglect and physical punishment). These analyses showed that the presence of IPV at Years 1 and 3 (both physical violence and economic abuse),

**Table 2** Bivariate Analyses of Early Delinquency and Key Variables

<i>N</i> =2,410	Year 9	Year 5	Year 5	Year 5
	Delinquency	Parental Involvement	Child Neglect	Physical Punishment
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 *
Physical Punishment at Y5				
No	0.84	5.25	0.08	—
Yes	1.27	5.23	0.12	—
F-Test	58.8 ***	0.1	12.6 ***	—

Figures in table are means

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

and child neglect and physical punishment at Year 5, were associated with higher levels of child delinquency at Year 9. For instance, at Year 9, children whose mothers had experienced IPV at Year 1 or 3 had a higher level of delinquent behavior than children whose mothers never experienced IPV at Year 1 or 3 (1.31 vs. 1.08). Compared to mothers who had not experienced IPV at Years 1 and 3, mothers who had experienced IPV reported lower levels of involvement with their children at Year 5 (5.11 vs. 5.29) and greater likelihood of neglecting their children (0.14 vs. 0.09). When different types of abuse were accounted for, mothers who had experienced physical abuse were shown to be more likely to neglect their children, while mothers who had experienced economic abuse were not only more likely to neglect their children, but also shown to have lower levels of involvement.

Interestingly, the findings also showed statistically significant associations among different parenting behaviors. At Year 5, compared to mothers who had not engaged in any neglect behaviors, mothers who had engaged in neglect behavior had a lower level of involvement with their children (4.85 vs. 5.28), and a greater likelihood of physically punishing their children (0.8 vs. 0.75). Correspondingly, mothers who had physically punished their children had a greater likelihood of neglecting their children (0.12 vs. 0.08).

### Regression Results

Table 3 shows the regression estimates of parenting behaviors (parental involvement, child neglect, and physical punishment) at Year 5. While holding all other variables constant, the occurrence of IPV (at Year 1 and 3) was associated with a parental involvement level that was 0.18 points lower, 27 % greater odds of exhibiting neglect behavior, and 27 % greater odds of using physical punishment with children (all at Year 5), compared to mothers who had not experienced IPV. Parenting behaviors also varied by mothers’ age, race, education, and relationship status with children’s fathers. For instance, mothers who were older at their children’s birth, mothers who were non-Hispanic black or Hispanic (compared to non-Hispanic white), and mothers who were married to their children’s father (compared to “not romantically involved” with the father) had lower levels of involvement with their children at Year 5. Additionally, mothers who had lower than a high school education level at the birth of their children were more likely to engage in neglect behaviors and use physical punishment, compared to mothers who had a high school degree or higher education level.

Table 4 presents the regression estimates of child delinquency at Year 9. Models 1 and 2 tested the effect of IPV

**Table 3** Regression Estimates of Parenting at Year 5

N=2,410	Parental Involvement			Child Neglect			Physical Punishment		
	B	S. E.	P	Odds	S. E.	P	Odds	S. E.	P
<b>Mother’s Characteristics</b>									
Occurrence of IPV at Year 1-3	-0.18	0.06	**	1.27	0.12	*	1.27	0.17	+
Age	-0.03	0.01	***	1.00	0.01		0.96	0.01	***
<b>Race</b>									
White	—	—		—	—		—	—	
Non-Hispanic Black	-0.34	0.08	***	1.06	0.13		1.44	0.23	*
Hispanic	-0.47	0.09	***	1.50	0.20	**	0.78	0.13	
Other Race	-0.02	0.16		1.57	0.38	+	0.87	0.26	
<b>Educational Attainment at Baseline</b>									
Below High School	-0.14	0.08		1.26	0.15	+	0.75	0.12	+
High School	-0.05	0.07		1.13	0.13		0.87	0.13	
Above High School	—	—		—	—		—	—	
<b>Relationship Status at Baseline</b>									
Non-Involved	0.57	0.15	***	0.67	0.17		1.10	0.35	
Visiting	0.13	0.09		0.94	0.13		0.99	0.18	
Cohabited	0.10	0.08		1.08	0.13		1.07	0.16	
Married	—	—		—	—		—	—	
<b>Child’s Characteristics</b>									
Boy	-0.12	0.05	*	1.09	0.10		1.35	0.15	*
Temperament	-0.07	0.04		1.03	0.06		1.13	0.09	
Constant	6.54	0.20	***	0.30	0.09	***	9.45	3.70	***

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$



occurrence (at Years 1 and 3, same in text below) on child delinquency (at Year 9), with model 2 controlling for mothers' parental involvement, child neglect, and physical punishment (at Year 5). Models 3 and 4 tested the effects of different types of IPV (i.e., physical violence and economic abuse at Years 1 and 3) on child delinquency at Year 9, with model 4 controlling for mothers' parental involvement, child neglect, and physical punishment at Year 5.

Table 4 showed that the delinquency level of children whose mothers had experienced IPV was 0.24 points higher level than that of children whose mothers had not experienced IPV, holding all other variables constant. The coefficient dropped to 0.21 points when parental involvement, child neglect, and physical punishment were factored in. This suggests that the association between exposure to IPV and child delinquency was slightly mediated by parenting behaviors. Model 2 showed the delinquency level of children who had

experienced neglect to be 0.43 points higher than that of children who had not been neglected. Children who experienced physical punishment had a level of delinquency that was 0.28 points higher than that of children who had not been physically punished. With respect to the two types of IPV, only the presence of economic abuse was statistically shown to be significantly associated with child delinquency. As shown in model 3, economic abuse against mothers was associated with a 0.2-point higher level of child delinquency. This coefficient dropped to 0.17 when parenting behaviors were controlled for, which suggests a small mediation effect of parenting behavior on the association between economic abuse and child delinquency.

In addition, Table 4 suggested that children whose mothers were younger at the baseline year had higher levels of delinquency at Year 9. Children whose mothers had below a high school education level also demonstrated higher levels of

**Table 4** Regression Estimates of Early Delinquency at Year 9

N=2,410	Model 1			Model 2			Model 3			Model 4		
	S			S			S			S		
	B	E.	P	B	E.	P	B	E.	P	B	E.	P
<b>Mother's Characteristics</b>												
Occurrence of IPV at Year 1-3	0.24	0.07	**	0.21	0.07	**	—	—	—	—	—	—
Occurrence of Physical Violence at Y 1-3	—	—	—	—	—	—	0.10	0.10	—	0.07	0.10	—
Occurrence of Economic Abuse at Y1-3	—	—	—	—	—	—	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	**
Physical Punishment at Y5	—	—	—	0.28	0.09	**	—	—	—	0.27	0.09	**
Age	-0.02	0.01	**	-0.02	0.01	*	-0.02	0.01	**	-0.02	0.01	*
<b>Race</b>												
White	—	—	—	—	—	—	—	—	—	—	—	—
Non-Hispanic Black	0.49	0.09	***	0.48	0.09	***	0.49	0.09	***	0.48	0.09	***
Hispanic	-0.25	0.10	*	-0.23	0.10	*	-0.24	0.10	*	-0.22	0.10	*
Other Race	-0.15	0.19	—	-0.15	0.19	—	-0.14	0.19	—	-0.14	0.19	—
<b>Educational Attainment at Baseline</b>												
Below High School	0.19	0.09	*	0.21	0.09	*	0.19	0.09	*	0.21	0.09	*
High School	0.05	0.09	—	0.06	0.09	—	0.05	0.09	—	0.06	0.09	—
Above High School	—	—	—	—	—	—	—	—	—	—	—	—
<b>Relationship Status at Baseline</b>												
Non-Involved	0.35	0.18	*	0.31	0.18	—	0.36	0.18	*	0.31	0.18	—
Visiting	0.11	0.11	—	0.10	0.11	—	0.11	0.11	—	0.10	0.11	—
Cohabited	-0.01	0.09	—	-0.03	0.09	—	-0.01	0.09	—	-0.03	0.09	—
Married	—	—	—	—	—	—	—	—	—	—	—	—
<b>Childs Characteristics</b>												
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	—

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

**Table 5** Robust Tests of Delinquency Regression at Year 9

N=2,410	Model 1			Model 2			Model 3			Model 4		
	B	S. E.	P	B	S. E.	P	B	S. E.	P	B	S. E.	P
<b>Occurrence Specifications</b>												
Occurrence of IPV at Y 1-3	0.24	0.07	**	0.21	0.07	**	–	–	–	–	–	–
Occurrence of Physical Violence at Y 1-3	–	–	–	–	–	–	0.10	0.10	–	0.07	0.10	–
Occurrence of Economic Abuse at Y 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	**
Physical Punishment at Y5	–	–	–	0.28	0.09	**	–	–	–	0.27	0.09	**
<b>Level Specifications</b>												
Level of IPV at Y 1-3	0.10	0.04	**	0.08	0.04	*	–	–	–	–	–	–
Level of Physical Violence at Y 1-3	–	–	–	–	–	–	0.03	0.08	–	0.01	0.08	–
Level of Economic Abuse at y 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	**
Physical Punishment at Y5	–	–	–	0.27	0.09	**	–	–	–	0.28	0.09	**

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

delinquency at Year 9 than children whose mothers had high school degrees or higher. Finally, compared to children whose parents were married at their birth, children whose parents were romantically involved had a higher level of delinquency at Year 9. The significance of this difference, however, vanished after controlling for mothers’ parenting behaviors (i.e., parental involvement, child neglect, and physical punishment). Children’s gender also made a difference; boys had a higher level of delinquency than girls overall.

Table 5 presents robust tests of IPV specifications on child delinquency regression at Year 9. Two specifications were presented: the occurrence and the level of IPV at Years 1 and 3. In addition to the effect of IPV occurrence on child delinquency, these specifications highlighted that the level of IPV

also made a difference. For instance, when mothers experienced IPV at both Year 1 and Year 3, their children exhibited a level of delinquency that was 0.4 points (0.1\*4) higher than that of children whose mothers reported no IPV.

Finally, Table 6 presents robust tests of parenting regression at Year 5, consisting of four models. Constant with our findings in previous analyses, the tests indicated that the occurrence of IPV was associated with a lower level of parental involvement, and a greater likelihood of neglecting and physically punishing children. Notably, the two types of IPV were linked with disparate parenting outcomes. Mothers who had experienced physical violence were more likely to use physical punishment with their children, whereas experiencing economic abuse was linked with a lower level of parental

**Table 6** Robust Tests of Parenting Regression at Year 5

N=2,410	Parental Involvement			Child Neglect			Physical Punishment		
	B	S. E.	P	Odds	S. E.	P	Odds	S. E.	P
<b>Model 1</b>									
Occurrence of IPV at Y 1-3	-0.18	0.06	**	1.27	0.12	*	1.27	0.17	+
<b>Model 2</b>									
Occurrence of Physical Violence at Y 1-3	0.04	0.09	–	1.19	0.16	–	1.69	0.35	*
Occurrence of Economic Abuse at Y 1-3	-0.22	0.07	**	1.16	0.12	–	1.01	0.14	–
<b>Model 3</b>									
Level of IPV at Y 1-3	-0.09	0.03	**	1.13	0.05	**	1.17	0.08	*
<b>Model 4</b>									
Level of Physical Violence at Y 1-3	0.00	0.06	–	1.14	0.11	–	1.53	0.25	**
Level of Economic Abuse at Y 1-3	-0.16	0.05	**	1.12	0.09	–	1.00	0.11	–

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

involvement. We also examined the effects of IPV levels on parenting behavior. The results showed that higher levels of overall IPV significantly reduced the levels of parental involvement, and increased the odds of neglect and physical punishment. In addition, higher levels of physical IPV were associated with a higher likelihood of physical punishment. This finding suggests that mothers' experiencing high levels of physical IPV is a risk factor for use of physical punishment. The more physical violence mothers experienced at Year 1 and Year 3, the more likely they were to physically punish 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 child delinquency at Year 9, and investigated whether parenting behaviors 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 indicate that children's exposure to IPV at Year 1 and Year 3 importantly influenced 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 physical punishment at Year 5.

The results also highlight the important impacts of parental behaviors, and the possible effects of IPV on such behaviors. The presence of child neglect and physical punishment at Year 5 were both found to be associated with 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 engage in neglect behaviors, at Year 5. Additionally, the results demonstrate significant associations among different parenting behaviors. For instance, mothers who engaged in neglect behaviors presented lower levels of involvement, and were also more likely to physically punish 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.

Our findings point to persistent, long-term effects of children's early exposure to IPV, whether that violence takes the form of physical or economic abuse. Early interventions have been shown to positively affect children exposed to IPV (Sullivan, Egan, and Gooch 2004) and may provide important means to prevent later behavioral problems. For this reason, domestic violence agencies, preventive and foster care service providers, and elementary school-based programs should attempt to screen children at earlier ages for IPV exposure.

Research has demonstrated that negative effects of early trauma are not necessarily permanent, and that when both IPV victims and their children are provided the proper support and guidance, the negative outcomes of IPV exposure can be buffered—even reversed (Carpenter and Stacks 2009; Cook et al. 2005; Kaufman and Henrich 2000; O'Brien et al. 2013; Stark 2009). For instance, some evidence-based, developmentally appropriate interventions for children exposed to IPV have been shown to decrease children's depressive symptomatology and certain antisocial behaviors (Lee, Kolomer, and Thomsen 2012) and to enhance the relatedness among children within supportive environments (Thompson and Trice-Black 2012).

Another important implication of these findings is that interventions should examine the interrelationship between IPV, abuse, neglect, and parental involvement. To identify more of the children who would benefit from services, it is important that screening tools intended for children experiencing abuse or neglect also screen for IPV exposure (Chan 2011; Shen 2005). Furthermore, given that children's exposure to both physical and economic abuse was associated with negative outcomes, screening tools and interventions for child witnesses should account for multiple forms of violence, as well as the intensity of violence. It is also worth emphasizing that programs and policies aimed at children exposed to IPV should be strengths-based. They should strengthen parent-child bonds, foster positive environments for children, and encourage the development of community and family-based supports (Nguyen et al. 2012). To effectively support child witnesses, interventions should concurrently protect and empower caregivers (Carpenter and Stacks 2009). Caregivers should also be empowered with all relevant information about the ways their young children, who cannot fully comprehend the IPV they witness, are potentially impacted by exposure.

Our findings indicate that IPV had negative impacts on mothers' parenting over time, as well as on children's behavior during later childhood. Further research is necessary to better understand the interactions of these variables, as well as the interactions of other, external environmental and interpersonal factors. Previous studies have shown that experiencing IPV may affect women's ability to develop authority over their children (Jackson 2003), and, out of fear, lead them to deny their children developmentally "normal" freedoms (Levendosky et al. 2000; Levendosky and Graham-Bermann 2001). However, it is important to avoid the misguided tendency to blame IPV victims for their "failure to protect" their children (Farmer and Owen 1995; Bell 2003). Mothers subjected to physical, psychological, and economic abuse often experience high levels of stress, depression, and anxiety (Holtzworth-Munroe, Smutzler, and Sandin 1997), and in many cases are limited physically, emotionally, and financially by their abusers. In fact, research has shown that mothers who experience IPV demonstrate increased sensitivity to their

children, and often attempt to compensate for the stress they experience (Levendosky et al. 2000; Stephens 1999).

Furthermore, the cognitive, emotional, and behavioral outcomes of children exposed to IPV may 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, and Seedat 2009; Garrido et al. 2011; Holt et al. 2008; Moretti, Obsuth, Odgers, and Reebye 2006; Mustanoja et al. 2011)—outcomes that are mediated by psychological problem behavior, lower academic success, and problematic peer relations (Voisin and Hong 2012). It is important to explore how exposure to IPV, child neglect, and physical punishment might affect children differently in other settings, and how such effects might interact with their home environments.

Unfortunately, among the sample of families chosen for this study there was insufficient data describing fathers' continued involvement with their children. Further research is needed to explore how abusers' continuing presence, behaviors, and attitudes mediate their children's outcomes. Whether or not fathers are involved directly in their children's lives, their interactions with their partners likely have important impacts on their children's development and behavior—what Bronfenbrenner terms “second-order effects” (1979). Although research suggests that children exposed to IPV often have continuing contact with abusive parents throughout childhood and adolescence, few studies have analyzed the effects of these relationships on children. Such research is important to creating effective programs that not only prevent abuse, but also promote accountability (Carpenter and Stacks 2009).

In light of the high prevalence rates of IPV among bisexual, gay, and lesbian couples (Wood and Sommers 2011), it will be important for future studies to explore how IPV exposure may similarly or uniquely affect children of same-sex and transgender partners. The transgenerational transmission of IPV, as well as the gender effects of IPV exposure, also merit further study (Wood and Sommers 2011). Extensive research has focused on how girls and boys are disparately affected by IPV exposure—in terms of both their emotional and psychological responses, and their behavioral outcomes. In light of this study's findings, it will be important to assess how gender mediates the effects of various types, and levels, of violence.

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 behaviors consistent with child neglect and physical punishment, was self-reported and thus subject to reporting error. This reporting error also applies to children's self-reported engagement in delinquent behaviors.

Third, the Fragile Families and Child Well-being Study is not designed to collect data on IPV, and therefore does not include rich measures of the violence and economic abuse. The narrow measures may underestimate the prevalence of IPV in this population, and may bias the regression estimates. In addition, the items used for economic abuse (prevent you from going to work and/or school and withheld money, made you ask for money, or took your money) may be also related to concepts of coercive control and entrapment. It is imperative that future study uses comprehensive scale that may include concepts of economic control, economic exploitation, and employment sabotage, to measure economic abuse (Stylianou et al. 2013). Despite these limitations, this paper increases our understanding of the effects of exposure to IPV on children's behavioral outcomes.

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