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## Partner abuse or violence, parenting and neighborhood influences on children's behavioral problems

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### Abstract

We examined the relationship between neighborhood characteristics, parenting behaviors, experiences of intimate partner abuse or violence (IPV) and children's behavioral problems in a socioeconomically diverse sample of 383 families residing in an urban environment. Data were collected in the Fall/Winter of 2002. The census block group of residence was used as our measure of neighborhood. Census block groups typically contain 1500 residents on average. IPV was measured using a modified version of the HITS (physically **H**urt, **I**nsult, **T**hreaten, and **S**creamed at) scale, a short four item tool assessing emotional and physical violence to which we added an item capturing domination or emotional control. IPV in the last year was reported by 50% of the sample with rates varying by socioeconomic position; families with the lowest and highest income reported the most IPV. Patterns of association between parenting, neighborhood and the children's behavioral problems differed for families who reported IPV in the last year compared to families who reported no IPV. While positive neighborhood characteristics such as high levels of Community Involvement with Children – based upon four scales capturing neighborhood levels of social interaction and collective socialization of children – were protective for high levels of behavioral problems among families not reporting IPV, this protective effect was not seen among families who did report IPV. Hypothesized interactions between negative neighborhood characteristics and IPV—namely that behavioral problems would be worse among families experiencing IPV in highly economically deprived or areas with negative social climates—were not supported by our data. These interactions between neighborhood factors and IPV were not explained by parental factors.

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## Keywords

Partner violence; Children; Neighborhoods; Child behavioral problems; Children's mental health; Urban; USA

Considerable evidence documents that those in relationships involving intimate partner abuse or violence (IPV) experience physical and mental health and social sequelae (Campbell et al., 2002; Gorde, Helfrich, & Finlayson, 2004; Levendosky et al., 2004; Pallitto & O'Campo, 2005; Schollenberger et al., 2003; Walker, Logan, Jordan, & Campbell, 2004). An emergent body of evidence suggests that children who are part of families that experience intimate partner violence and conflict are also adversely affected (English, Marshall, & Stewart, 2003; Hazen, Connelly, Kelleher, Landsverk, & Barth, 2004; Jouriles et al., 2001; Kernic et al., 2003; McFarlane, Groff, O'Brien, & Watson, 2005; Skopp, McDonald, Manke, & Jouriles, 2005; Tolan, Gorman-Smith, & Henry, 2006). Children in these circumstances exhibit adverse developmental outcomes, mental health problems, and behavior problems (Kaufman et al., 2006; Kernic et al., 2003; Wolfe, Crooks, Lee, McIntyre-Smith, & Jaffe, 2003). This holds true across the whole socioeconomic spectrum, as IPV occurs among all social classes.

A recent meta-analysis conducted by Wolfe et al. (2003) examined the relation between exposure to intimate partner violence within families and child outcomes. Wolfe et al. reported that the overall effect size for the relation between exposure to IPV and the child's emotional and behavioral problems was small ( $Z = .28$ ). The effect size also varied by child's age; the effect size for school-aged children ( $Z = .23$ ) was small but greater than that for adolescents ( $Z = .11$ ) (English et al., 2003; Hazen et al., 2004; Jouriles et al., 2001; Kernic et al., 2003; McFarlane, Groff, O'Brien, & Watson, 2003; Skopp et al., 2005; Tolan et al., 2006; Walker et al., 2004). Limitations of existing studies noted by Wolfe et al. include no consistency in defining intimate partner violence and the children's exposure to IPV, no adjustment for potential confounders or assessment of moderation, and small sample size. In addition, because effect sizes appear to differ by child age, the broad age range of children in many study samples makes interpretation of results difficult. Similar findings, including methodological limitations, were reported by a meta-analysis of studies concerned with physical violence in families conducted by Kitzman, Gaylord, Holt, and Kenny (2003).

These limitations notwithstanding, the research support for IPV as a risk factor for child behavior problems is strong. The negative affective climate of families experiencing IPV is well documented (Holt, Buckley, & Whelan, 2008) and much research has been devoted to understanding the processes of these families that contribute to adverse family functioning, parenting and child outcomes (e.g., Hazen, Connelly, Kelleher, Barth, & Landsverk, 2006; Huth-Bocks & Hughes, 2008). The adverse children's outcomes resulting from IPV are due, in part, to the mediation of parenting behavior on IPV on children's emotional and behavioral outcomes (Dubowitz et al., 2001; Hazen et al., 2006; Katz & Low, 2004; Onyskiw & Hayduk, 2001). Parenting in families that report IPV is less warm, shows greater hostility, and is less responsive. These parenting behaviors have been shown to mediate the relation between IPV and child outcomes (Katz & Low, 2004; Onyskiw & Hayduk, 2001).

We seek to extend the current literature by using a global measure of IPV experienced by the child's mother or caregiver. Our study extends existing research as our conceptualization of IPV includes multiple types of abuse such as physical, psychological, and controlling or restrictive behaviors as adverse outcomes have been demonstrated for each type (Gordon, 2000; O'Campo et al., 1995) Our study also has information on parenting behaviors that could be examined as mediators of IPV and child outcomes. Moreover, we seek to examine the relation between IPV and child behavior problems within the context of families in residential neighborhoods across a wide range of socioeconomic position with an emphasis on the effects of neighborhoods on the associations of interest. While the child maltreatment literature has a longer standing focus on neighborhoods (Coulton, Crampton, Irwin, Spilsbury, & Korbin, 2007; Garbarino & Crouter, 1978; Zuravin & Taylor, 1987), this is a relatively new focus for studies on IPV and child outcomes.

To guide our work, we will use the Integrated Process Model (Nettles, Caughy, & O'Campo, 2008) which delineates the complex interactions between child, family, and neighborhood factors. Our theoretical work draws upon diverse disciplinary perspectives such as the work of sociologist Robert Sampson, who applies neighborhood social disorganization theory to understanding family management and child development (Sampson, 1992), the work of developmental psychologist Garcia Coll et al. (1996) whose integrative model of minority child development incorporated neighborhood as one contextual factor shaping a family's "adaptive culture," and the work of social epidemiologists trying to develop theories to elucidate the mechanisms underlying neighborhood differences in individual health status (O'Campo, 2003). According to the Integrated Process Model, neighborhood, family, and child factors are linked through mediating and moderating processes that contribute to children's behavioral and cognitive adjustment. Neighborhood structure and quality affect parental perceptions, behavior, experiences and child behavioral and cognitive outcomes directly, but neighborhood characteristics can also serve as moderators of specified associations between parental behavior and perceptions. Neighborhood processes, such as social climate, also serve to attenuate or enhance associations between parenting and child outcomes. Below, we consider the evidence pertaining to neighborhoods and their effects on child outcomes of relevance to this study.

## **Neighborhood factors influencing child emotional and behavioral problems**

Studies of neighborhood effects on child behavior problems are a burgeoning area of research (see Leventhal & Brooks-Gunn, 2000, for a review). The earliest work in this area relied on a limited set of measures coming exclusively coming from the census in characterizing neighborhood context (Aneshensel & Sucoff, 1996; Brooks-Gunn, Duncan, Klebanov, & Sealand, 1993; Chase-Lansdale & Gordon, 1996; Paschall & Hubbard, 1998; Simons, Johnson, Beaman, Conger, & Whitbeck, 1996). This early work consistently found that neighborhood risky conditions such as high levels of poverty contributed variance to child behavior problems independently of that explained by family and child factors. Early studies tended to search for main effects of neighborhood factors but rarely examined moderation in their models (e.g., O'Campo et al., 1995).

In addition to neighborhood demographic characteristics measured by archival data, recent research has also included measures of social processes at the neighborhood level such as perceptions of danger, collective efficacy and social capital. Perceptions of danger in the neighborhood are associated with higher rates of child behavior problems (Aneshensel & Sucoff, 1996; Shumow, Vandell, & Posner, 1998). Neighborhood social characteristics such as collective efficacy have been found to mediate the negative impact between neighborhood poverty and children's internalizing problems (Xue, Leventhal, Brooks-Gunn, & Earls, 2005). Neighborhood social capital has been reported to affect children's adjustment problems indirectly through its inverse association with neighborhood dangerousness which in turn increases the risk of adjustment problems in children; simultaneously, neighborhood social capital's protective effect on children's adjustment problems is mediated by effective parenting (Dorsey & Forehand, 2003). Neighborhood social cohesion and collective efficacy have been reported to moderate the association between parenting factors such as monitoring and/or nurturant parenting with child behavior problems (Caughy, Nettles, O'Campo, & Lohrfink, 2006; Caughy & O'Campo, 2006; Caughy, O'Campo, & Muntaner, 2003, 2004; Simons et al., 2002; Xue et al., 2005). In a study of children in the first and second grade, Silk, Sessa, Morris, Steniberg, and Avenevoli (2004) found that maternal hostility was associated with higher externalizing problems in low cohesion but not high cohesion neighborhoods. Caughy, O'Campo, and Muntaner (2004) found that, among African American parents of preschoolers, fear of victimization moderated the association between parental responses to experiences of racism and child internalizing behavior problems. Specifically, parents who actively stood up to experiences of racism had children with lower levels of internalizing problems such as depression and anxiety but only in neighborhoods where a majority of parents reported fear of victimization.

In the Integrated Process Model, we categorize neighborhood characteristics as either structural, such as poverty and other demographic characteristics, or social processes. With regard to neighborhood social processes, two are of particular interest. Positive social characteristics of neighborhoods are referred to in the literature using a variety of terms including *social capital*, *social integration*, *psychological sense of community*, *informal social control*, *collective socialization of children*, and *collective efficacy*. In our own work, we have tailored these ideas to concerns about children and have examined positive social processes at the community level which tap social integration in the neighborhood as well as the willingness of adults in the neighborhood to engage in collective socialization of children. We refer to this as *neighborhood potential for community involvement with children (CIC)* (Caughy, O'Campo, & Nettles, 2006; Nettles, 1991; Nettles et al., 2008). Negative social characteristics such as perceived physical and social disorder as well as fear of crime and perceived dangerousness of the community are among the negative social processes that have been examined in relation to child behavior problems in previous research.

## Neighborhoods, IPV, parenting and child outcomes

The expected mechanism between IPV and children's outcomes is the alteration of sensitive and nurturing parenting due to the victimization of the caregiver. The link between insensitive parenting and harsh/inconsistent discipline and child behavior problems is well

established (Deater-Deckard & Dodge, 1997; Dodge & Pettit, 2003; Dodge, Pettit, & Bates, 1994; Gadeyne, Ghesquiere, & Onghena, 2004; Pettit, Bates, & Dodge, 1997; West & Newman, 2003). We build upon this research by bringing the IPV/child development and the neighborhood/child development literatures together. Findings from the neighborhood research literature suggest that neighborhood characteristics and family processes can interact in a variety of ways. As detailed by Roche and Leventhal (2009), risky neighborhoods can amplify family level risk factors (Beyers, Bates, Pettit, & Dodge, 2003; Brody et al., 2003; Roche, Ensminger, & Cherlin, 2007; Simons et al., 1996). In contrast, there is evidence that positive neighborhood characteristics can enhance positive family processes such as supportive parenting (Roche, Ellen, & Astone, 2005; Simons, Simons, Burt, Brody, & Cutrona, 2005). Finally, there is also evidence that positive parenting behavior can buffer children against the negative effects of living in risky neighborhoods (Beyers et al., 2003; Brody et al., 2001, 2003; Roche, Ellen, et al., 2005; Roche, Mekos, et al., 2005).

Two studies have examined neighborhood factors, IPV and child outcomes. Hazen et al. (2006), in a national sample of families involved with Child Protective Services, examined caregiver IPV, parenting practices and children's behavioral problems and reported no association with community characteristics and child outcomes. Community characteristics were measured using a short self-reported checklist emphasizing neighborhood problems. While several factors were examined in their models as potential moderators, community characteristics were not among them. The second study was conducted among low-income families with preschoolers attending Head Start (Oravec, Koblinsky, & Randolph, 2008). Oravec et al. measured community violence but no other community characteristics. While moderating relationships were examined, community violence was not a moderator for internalizing or externalizing behaviors. In our study, we examine the potential moderating effects of caregiver IPV on the relation between positive and negative neighborhood characteristics and children's behavioral outcomes.

In this paper, we seek to explore several questions in relation to neighborhoods, parenting, IPV and children's behavioral problems. Based upon the Integrated Process Model and emerging research on neighborhood contexts, we propose that neighborhood characteristics will have little or no direct impact upon child behavioral problems. Rather, we propose that neighborhood factors will interact with the family risk factor of IPV. Specifically, the protective advantage offered by positive characteristics and processes of neighborhoods, such as neighborhood potential for community involvement with children (CIC), will differ for families whose caregivers do or do not report IPV. By contrast, the adverse effects on children of risky or negative conditions such as concentrated economic disadvantage and negative social climate will also differ depending on whether or not caregivers report experiencing IPV. These moderated relationships will not act directly on child outcomes but rather will influence child outcomes via parenting practices. Thus, we will examine whether parenting behaviors partially explain the interaction between IPV and neighborhood factors on child outcomes. These proposed associations are displayed in Fig. 1. Specifically, the dotted arrows represent the pathways we propose will not be significant, and the solid arrows depict the moderated pathways that we are interested in investigating.

## Method

### Procedure

To obtain our study sample of families residing in neighborhoods across the whole socioeconomic spectrum and racial composition, all neighborhoods in the city (defined as census block groups) were stratified by race/ethnicity and average household wealth. While we collected data in Fall/Winter of 2002, we used 2000 census data to identify census block groups with high (80 percent or greater African American), mixed (between 30 and 79 percent African American) and low (20 percent or less) proportions of African Americans. We then sorted those census block groups into four wealth strata that represented the wealth quartiles of the city using wealth data derived from a commercial data source, Claritas (2001). Census data regarding the number of children under the age of five in the block group were used to select block groups with the highest prevalence of young children within this 3 × 4 matrix. We chose the category of under age 5 for a few reasons: (i) we were interested in enrolling families with children age 6 as that is the age they enter first grade, (ii) given that the census data were collected a few years prior to the implementation of our sampling we used census categories that counted preschool children, and (iii) the categories that included children six years of age were too broad (e.g., ages 6–17). Some cells (specifically predominantly Black neighborhoods in the highest quartile of wealth) had very few neighborhoods with a high prevalence of children, so we supplemented the block groups with two additional high wealth racially mixed neighborhoods.

### Participants

Within the selected neighborhoods, families residing in Baltimore City with a child entering the first grade in Fall 2002 were recruited through door-to-door-canvassing, targeted mailing lists, and referrals from other study participants. We excluded children with a disability severe enough to keep them out of first grade and residents who had lived in their current neighborhood for less than six months as their exposure time in that residential area was presumed to be too short. Of the 2518 residences or individuals contacted for the study, 1983 (78.8%) were ineligible (e.g., did not reside in the neighborhood for at least 6 months) or not screened for other reasons (e.g., no adults was home where to answer the screening questions, could not speak English, were not in the right age range, did not have children in the household), 31 (1.2%) refused to be screened, 91 (3.6%) were eligible but refused participation, and 409 (16.2%) completed the interview. For households not screened, we did not have or keep information on household demographics so we cannot compare them to those who participated. However, neighborhoods differed with regard to the reasons for and proportion of ineligible participants (e.g., some neighborhoods had more elderly households in their neighborhoods). Of these 409, 4 were excluded from the final sample because significant child disabilities were identified during the interview (2 reported as mentally retarded and 2 reported as autistic). Of the 405 remaining cases, 393 had valid information on partner violence and comprise our sample for this analysis. For recruited families, a home visit was completed during Fall/Winter 2002 consisting of a 2 h long interview with the primary parent/caregiver and a developmental assessment of the child. Of the 393 participants, 337 (85.8%) were mothers of the target child, 27 (6.9%) were fathers, 17 (4.3%

were grandparents), 9 (2.3%) were other relatives, and 3 (.8%) were individuals who were not related to the study child.

While safety is always a concern with home-based data collection, interviewers were highly experienced and had extensive training on safety procedures. Interviewers were given the option of going out in pairs for safety considerations. The 393 families that had valid IPV data were from 162 different neighborhoods. The average number of respondents per neighborhood was 2.41 (range 1–14). The protocol for the study was reviewed and approved by the Institutional Review Boards of the collaborating universities. Informed consent from the primary caregiver was obtained at the beginning of the home interview, and assent was obtained from the child before initiation of the child assessment procedure.

## Measures

Data collected during the home visit were based on an interview with the primary caregiver, a self-administered parent questionnaire, and videotapes of parent/child interaction. Interview data included questions on parenting behavior, family demographic characteristics, neighborhood characteristics, and child behavior problems. Family demographic characteristics included parent education, parent employment status, family size and structure and family income. Family size and income data were used to estimate a family income-to-needs ratio based on federal poverty guidelines. Thus, those families residing at the official poverty level were labeled as 100% poverty. In 2002, a family of four (2 adults and 2 children) were considered living at the official poverty threshold (100% poverty) if the family's total annual income was \$18,244. This variable was also used to identify families residing in deep poverty or with incomes that are half of the official poverty level (50% poverty). Non-low income families lived above 100% poverty (e.g., 200% poverty which is approximately a living wage). Our highest category of family income was for those at 335% of the official poverty level and above.

*Intimate partner violence* was measured using a modified version of the HITS (physically Hurt, Insult, Threaten, and Screamed at) scale (Sherin, Sinacore, Li, Zitter, & Shakil, 1998) capturing multiple components of partner abuse and violence (IPV) (Crowell & Burgess, 1996; Koss et al., 1994; Salzman, Fanslow, McMahon, & Shelley, 2002; Tolman, 1989). The original HITS is comprised of four items assessing emotional and physical violence on a 5-point Likert scale (0 = never happens; 4 = frequently) including how often your partner insults or talks down to you, screams or curses at you, threatens you with harm, and physically hurts you. The HITS, developed as a short screening tool, has high internal consistency and concurrent validity with the Conflict Tactic Scale (CTS) subscales for physical and psychological abuse. The CTS, a much longer instrument, is one of the most widely used measures of partner violence (Bonomi, Holt, Thompson, & Martin, 2005) including in the family violence literature (Kitzman et al., 2003), and the correlation between the HITS and the CTS is .85 (Sherin et al., 1998). An additional item (How often does your partner restrict your actions) was added to assess the domination or emotional control which is recognized as being an important component of partner violence (Gordon, 2000). All questions concerned experiences the respondent had within the context of a relationship with any romantic or domestic partner or anyone else in the household during

the year prior to the interview. As there was considerable overlap in the experiences of the different types of violence, a dichotomous variable was created to differentiate those who never experienced any of those events (zero) versus those who had at least one experience with the abusive events (one).

*Parenting behavior* was assessed via self-report as well as via direct observation. The self-report parenting measure was the Survey Measure of Mother–Child Relationship for Middle Childhood (SMMCRMC) (Mariner, Zaslow, Floryan, & Botsko, 1998). For this analysis, we utilized the *Eliciting* subscale from the SMMCRMC as an indicator of positive parent involvement. The measure of *Eliciting* was based on five items which assessed the degree to which the parent engaged in activities chosen by the child, talked to him about his feelings, and allowing him to ask questions. The internal reliability coefficient of this subscale was .64.

*Harsh parental discipline* was assessed using a measure developed by Shumow et al. (1998). Only the harsh discipline subscale (5 items) was used ( $\alpha = .64$ ). Measures of *Hostility* and *Connectedness* within the parent–child relationship were captured during a videotaped session of parent–child interaction during the home visit. Modeled largely after a study by Clark and Ladd (2000), the videotaped session included seven conversational tasks (episodes) initiated by the interviewer. In the first task, the parent was asked to tell a story of when the child was born or when the child was a small baby. The purpose of this episode was to elicit a narrative that was personally relevant to the child but for which s/he had no personal knowledge. The child then picked the topic of the next task using a set of cards provided by the interviewer. In all, the child told six stories: something fun that happened at school, something not so fun that happened at school, something fun that happened at home, something not so fun that happened at home, something fun for the child that happened with the parent, and something not so fun for the child that happened with the parent. The parent was told that he/she could ‘help out’ in the story-telling.

Videotapes were reviewed and coded for 14 items by two trained members of the research team based on the coding system used by Clark and Ladd (2000). Coders were initially trained by one of the study investigators until inter-rater reliability exceeded .80. Inter-rater reliability was monitored periodically throughout coding using an intraclass correlation coefficient and ranged between .83 and .96. Based on guidelines provided by Clark and Ladd (2000), episodes were deemed “unratable” if the episode lasted less than 30 s and included fewer than three interactive turns between the dyad. The number of ratable coded episodes per child ranged from 0 to 7 ( $M = 6.51$ ,  $SD = 1.06$ ; 89% had at least five ratable episodes). The *Hostility* score was created by averaging three items coded from the tapes: parent–child anger, parent demandingness, and parent hostility, and *Connectedness* consisted of the average of five items: mutual positive engagement, mutual warmth/caring, reciprocity, mutual happy emotional tone, and mutual intimacy. Scale scores were first computed at the episode level and then averaged across episodes. The internal reliability of the Hostility subscale was .82, and Connectedness had an internal reliability coefficient of .87.

*Neighborhood variables* included measures of neighborhood economic impoverishment derived from census data and neighborhood social processes measured using scales on



perceptions in the individual surveys. *Neighborhood concentrated economic disadvantage* was a composite score derived from census data based on the work of Sampson et al. (Sampson, Morenoff, & Earls, 1999; Sampson, Raudenbush, & Earls, 1997) and included percent of individuals below the poverty line, percent receiving public assistance, percent unemployed, and percent of households that are female-headed with children. Using all block groups in the city, each variable was standardized, and the component variables were averaged to yield an index of concentrated economic impoverishment.

*Neighborhood potential for community involvement with children* and *negative social climate* were measured in the individual surveys using the Neighborhood Environment for Children Rating Scales (NECRS) (Coulton, Korbin, & Su, 1996). There are seventeen different subscales including subscales assessing facility availability and facility usage as well as subscales assessing level of social interaction, collective socialization, and neighborhood climate. Four subscales of the NECRS were used as indicators of *neighborhood potential for community involvement with children (CIC)*: willingness of adults in the neighborhood to intervene in acts of delinquency (6 items), willingness to intervene in acts of child misbehavior (4 items), willingness to assist children in need (5 items), and level of social interaction in the neighborhood (5 items). These four scales were averaged to create a composite measure of CIC. Higher scores reflect a greater amount of potential for community involvement with children in the neighborhood. The individual-level internal reliability of this composite was .78, and the neighborhood level was .95 (O'Brien, 1990).

Three subscales of the NECRS were used as indicators of *neighborhood negative social climate (NSC)*: perceived physical/social disorder, fear of retaliation, and fear of victimization. The *physical/social disorder* scale included 15 items reflecting frequency of neighborhood problems including trash, graffiti, abandoned cars, drug dealers, gangs, and loitering. *Fear of retaliation* was a 7-item scale reporting likelihood a child, teen, or adult would become angry and yell or retaliate if his/her behavior was corrected by someone else. *Fear of victimization* scale was a 14-item scale reporting how worried one is about being the victim of a property and/or personal crime. These three scales were averaged to create a composite measure of neighborhood negative social climate ( $\alpha = .76$ ). Higher scores on the NSC composite indicate a more negative social climate in the neighborhood. Neighborhood level reliability of the NSC composite was .98.

*Child behavioral competence* was measured using the Child Behavior Checklist (CBCL) (Achenbach & Rescorla, 2001). The CBCL is a parent-report measure that yields scores for internalizing problems (e.g., anxiety, depression, withdrawal) and externalizing problems (e.g., aggression). *T*-scores were used in this analysis. Higher scores reflect greater problem behaviors.

**Statistical analyses**—We first generated descriptive statistics on our sample examining family and neighborhood characteristics. We employed chi-square analyses to examine the association between neighborhood and family socioeconomic position and reports of IPV. For exploratory analyses to inform our multivariate models, we conducted ANOVA and correlation analyses to examine the bivariate associations between family characteristics,

parenting, IPV, and child behavior outcomes. Two-way ANOVA was utilized to examine whether average levels of child behavior problems by neighborhood characteristics differed by IPV status. These results informed our multilevel multivariate linear regression to examine our question concerning how IPV, neighborhood characteristics, and parenting variables jointly affected child behavior problems. Each of the CBCL scores (internalizing and externalizing) was modeled separately. Our first model contained only IPV. Our neighborhood variables were added to the second model to determine whether neighborhoods had direct associations with our outcomes. In the third model, we test whether there is an interaction between IPV and positive and negative neighborhood social characteristics. In the fourth and final model, we add parenting variables to determine if coefficients that were significant in earlier models are either no longer significant or are substantially attenuated once differences in parental behavior are adjusted. Based upon the literature including our own research, we included the following variables as adjustment factors in all multivariate models: child gender, parental education, family income-to-needs ratio, and the number of ratable episodes in the video-taped observations of parent-child interaction. All multilevel multivariate analyses were conducted using the XTREG procedure of Stata (StataCorp LP, 2003). XTREG is a random effects procedure that adjusts for the correlations between observations that may be clustered, in this case, in the same neighborhood. The need for multilevel methods was confirmed when we obtained significant Intraclass Correlation in several of our models suggesting between neighborhood variation in our outcome variables (Luke, 2004; Raudenbush & Bryk, 2002; Reise & Duan, 2003; Snijders & Bosker, 1999).

## Results

Table 1 presents the frequencies of individual types and overall IPV for the sample. The most common type of partner abuse experienced was being insulted or talked down to or being screamed and cursed at. Being threatened and being physically hurt were the least common among our sample. Overall, 50.1% of the sample experienced one or another type of abuse by their current partner. Given the socioeconomic diversity of the sample, this proportion is somewhat higher than might be expected, but we also assessed a full range of types of abuse which is not the case in most other studies.

Table 2 contains information on the socioeconomic and demographic characteristics of our sample. For the entire sample, approximately 31% of the target children were White/non-Hispanic, whereas 52% were Black/non-Hispanic, and 12% were multiracial. A little more than two-thirds of the sample (36.6%) was living below 100% of poverty. Compared to Baltimore City as a whole, the study sample had about the same proportion of White/non-Hispanics (30.9% for Baltimore City) and a slightly lower proportion of Blacks (64.4% for Baltimore City). However, the study sample had a significantly higher proportion for those living below 100% poverty compared to Baltimore City as a whole (19.5%).

Frequencies for the five HITS items separately are displayed in Table 1. The most commonly experienced items were “insults/talks down to you” and “screams/curses at you”, which were experienced by 128 (32.6%) and 141 (35.9%), respectively. The least common were “threatens you with harm” and “physically hurts you”, about 5.1% of the respondents.

The fifth item, “restricts your actions”, was reported by 69 (18.3%). Although between 1 and 2% did not provide an answer for each item, this non-response was not overlapping. Consequently, all 393 participants had some data on experiences of IPV. Overall, half of the sample reported some type of IPV (Table 1).

Because most of the caregivers (86%) were mothers, we compared IPV reports for mothers versus non-mothers. There were no significant differences in the HITS score or the report of physical abuse (yes/no) for mothers versus others. Mothers were less likely to report psychological abuse than non-mothers, 51% versus 67%,  $\chi^2(1) = 5.03, p = .025$ , and marginally more likely to report any abuse, 51% versus 37%,  $\chi^2(1) = 3.81, p = .051$ .

We examined differences in rates of IPV by neighborhood and demographic characteristics (data not shown). Rates of IPV did not differ by neighborhood concentrated economic disadvantage, community involvement with children (CIC) or negative social climate (NSC). Nuclear families reported higher rates of IPV compared to other family structures, 58% vs. 43% for single parent households and 38% for other family structures,  $\chi^2(2) = 9.73, p < .01$ . White/non-Hispanics children were more likely to have families reporting IPV compared to other race/ethnic groups, 59.3% vs. 45.6%,  $\chi^2(1) = 6.43, p < .05$ . While families experiencing IPV resided in neighborhoods that had similar socioeconomic standing, there was a significant difference in family socioeconomic status for those who did and did not report IPV as shown in Fig. 2. A “u” shape was observed where the rate of IPV was highest for those families living above 335% poverty (61.4%) and those living below 50% poverty (58.6%) followed by those caregivers in families with incomes at 50–99% poverty (45.9%) and those caregivers in families with incomes at 200–334% of poverty (47.1%),  $\chi^2(4) = 9.68, p < .05$ .

Table 3 displays the bivariate correlations between the CBCL problem behavior scores, IPV, and parenting variables. IPV was associated with higher levels of problem behaviors, especially for externalizing problems. Child behavior problems were negatively associated with parent eliciting and positively associated with dyadic hostility. While there was a positive correlation between IPV status and connectedness observed during the videotape episode, a *t*-test indicated there was no mean difference between the two groups, 2.85 vs. 2.94 for non-IPV and IPV, respectively,  $t(369) = -1.45, p = .15$ .

The results of the 2-way ANOVA examining differences in CBCL scores by neighborhood characteristics and IPV status are displayed in Table 4. There were significant main effects for IPV status for both CBCL outcomes, with higher internalizing problems and externalizing problems seen for children in families reporting IPV. There were significant main effects for high concentrated economic disadvantage and externalizing problems such that children living in very poor neighborhoods had higher problem scores than children living in neighborhoods falling into the lowest three quartiles of concentrated economic disadvantage. Similar associations were seen between child behavior problems and high neighborhood negative social climate (NSC), although high NSC was significant for internalizing problems as opposed to externalizing problems.

The main effect for neighborhood community involvement with children (CIC) was marginally significant for externalizing problems. However, there was a significant interaction between CIC and IPV. In high CIC neighborhoods, the mean level of externalizing problems was greater than in non-high CIC neighborhoods (about a 7–8 point difference in high CIC neighborhoods compared to a 2–3 point difference in non-high CIC neighborhoods).

The results of the multilevel regressions are displayed in Table 5. The top panel of the table shows the results for internalizing problems, and externalizing problems are shown in the bottom panel. For both outcomes, children living in IPV households had CBCL problem behavior scores between 2 and 4 points higher than non-IPV households even after controlling for demographic confounders. Adding the main effect of the neighborhood variables in model 2 indicate that, with the exception of NSC for internalizing problems, they were not significantly associated with the behavioral problems. However, it should be noted that not only was IPV in the models at this point but also the adjustment factors at the individual level as well. Children living in high NSC neighborhoods had CBCL internalizing scores almost 3 points higher than children living in other neighborhoods, after adjusting for the effects of IPV status and demographic confounders. Adding the main effect of the neighborhood variables did not alter the relation between IPV and child behavior problems substantially.

In Model 3, once the interactions between IPV and neighborhood characteristics were included in the model, the main effect for IPV was no longer significant. In contrast to what we originally proposed, negative social climate and concentrated disadvantage did not exacerbate the adverse effects of IPV on child behavior problems as neither of the interaction terms for IPV and neighborhood concentrated economic disadvantage or neighborhood negative social climate were significant. With regard to positive neighborhood characteristics, the interaction between IPV status and high CIC was significant for externalizing behavior problems. Methods for probing interactions in multilevel models as recommended by Preacher, Curran, and Bauer (2006) were used to determine where significant differences existed. Results indicated that in the absence of IPV, children living in high CIC neighborhoods had significantly lower externalizing behavior problems than children living in other neighborhoods, with the average difference being 3.43 points,  $z = 2.06$ ,  $p < .05$ . In contrast, in the presence of IPV, there was no significant difference in level of child externalizing problems associated with neighborhood CIC.

Our findings showed weak support the hypothesis about the interaction between negative neighborhood factors (i.e., concentrated economic disadvantage and negative climate), IPV and behavioral problems once parenting was taken into account. High levels of negative social climate was associated greater levels of internalizing behavioral problems in Model 2 and in Model 3, and the interaction between IPV and neighborhood concentrated economic disadvantage was marginally significant. Once parenting factors were entered into the model, the effect of NSC and the interaction between IPV and neighborhood concentrated economic disadvantage were reduced to non-significance. For externalizing behaviors, however, the interaction between negative social climate, IPV and behavioral problems was

marginally significant; families experiencing IPV had slightly higher behavioral problems compared to non-IPV households in neighborhoods with high levels of social climate.

## Discussion

In this paper, we investigated relations between neighborhood characteristics, intimate partner violence and abuse (IPV), parenting factors and children's behavioral problems a sample of first graders. The diversity of our sample was strength of our study as it allowed us to compare the relation between key variables across socioeconomically and demographically diverse families and neighborhoods.

We used a global measure of IPV for our study to ensure that we were capturing a broad range of conflict that might impact the well-being of children as well as to be consistent with predominant definitions of IPV (Salzman et al., 2002). Overall, half of the caregivers in our sample reported experiencing one or more of these problematic behaviors. It is hard to compare our rates to past studies on families and IPV given the differences across studies in measurement, with most previous studies placing emphasis on physical violence only (Kitzman et al., 2003). Previous studies on women using measures that include a broad range of abusive behaviors have reported even higher prevalence rates of IPV among lower income families in the past (O'Campo & Baldwin, 1999). In our study, behaviors of verbal abuse (screams/curses and talks down) received the highest endorsements from caregivers followed by controlling behaviors (restricts your actions). This suggests that many past studies, which exclude questions about such behaviors, may have missed a significant level of abuse or violence. In our sample, 19% of caregivers reported experiencing verbal abuse and controlling behaviors sometimes to frequently. Thus, we were able to capture a higher proportion of IPV than past studies. Our high rates are also likely due to our asking not only about intimate or romantic partners as perpetrators but others in the household as well. Again, we sought to capture all types of violence in the household that may impact children. While we are unable to assess the proportion of violence perpetrated by non-intimate partners, past studies that asked about all household violence reported that the vast majority of violence occurs between intimate partners (O'Campo, Gielen, Faden, & Kass, 1994). Finally, we asked all caregivers, not just mothers, about their experiences of partner violence. Since caregivers who were not mothers were marginally less likely to report any abuse, this may have also affected our overall prevalence of IPV. Future studies interested in sources of stress and conflict in the home should include measures that capture a broad range of IPV types and severity as well as ask about multiple types of perpetrators.

While overall IPV prevalence in our study did not differ by neighborhood socioeconomic position, there was variation observed by family level income. The "u" shaped IPV prevalence that we report by family socioeconomic position has not been reported elsewhere. Specifically, the high prevalence among families with the highest incomes has not been previously reported. This may have been, in part, because many past studies examined a smaller range of socioeconomic position (e.g., primarily low income families) and therefore are unable to examine a full range of socioeconomic position. Income is also not available in many studies, and gradients by variables such as education may not as strong as those obtained via income. Future studies should examine prevalence across all

socioeconomic subgroups and also examine whether the type of IPV may differ by socioeconomic position. In our sample, it appears that verbal abuse and restrictive behaviors both showed the “U” shaped relationship but not other types such as physical IPV (data not shown) which may explain why past studies have not reported this pattern.

Our study adds to a small but growing literature on the contribution of neighborhood conditions, parenting, and children’s behavioral problems. In particular, our research adds to the studies examining community factors, family level IPV and child outcomes; and our study extends this research in that we included a comprehensive assessment of neighborhood level factors (Hazen et al., 2004; Oravecz et al., 2008). While Hazen et al. focused on negative neighborhood characteristics, our study included both positive and negative neighborhood characteristics. In unadjusted models, we found that neighborhood factors had selective associations to the child outcomes for behavioral problems. Among the negative neighborhood characteristics, negative social climate was associated with worse internalizing and externalizing problems while neighborhood social disadvantage was only associated with externalizing problems. High CIC neighborhoods were associated with lower externalizing problems. These direct effects of neighborhoods did not hold up in the multivariate models with full adjustment and moderation associations included. Thus, this is consistent with the Hazen et al. (2006) findings and with our *a priori* proposal that neighborhood level factors would have small or non-significant direct associations with child outcomes. Oravecz et al. (2008) only measured community violence and reported a significant association with both internalizing and externalizing preschooler’s behaviors. It is not clear, however, whether community violence was a proxy for community level socioeconomic position or whether the community violence itself increased risk since Oravecz et al. (2008) did not include neighborhood socioeconomic position in their models. Our measure of negative social climate included some scales related to crime and victimization but was not found to be associated with children’s outcomes in our study. Future studies might include a broad set of neighborhood variables to more accurately identify and specify neighborhood risk.

We found that residing in high CIC neighborhoods was associated with lower levels of externalizing child behavior problems for children living in non-IPV households but not for children living in IPV households. Families reporting IPV might not benefit from high neighborhood cohesion around issues concerning children as compared to non-IPV households. This finding is not explained by differences in types of neighborhoods or differences in socioeconomic position at the family level, as we accounted for these variables in our final regression models. One explanation is related to parent factors. While we accounted for parenting behaviors in our study, there is strong data to suggest that survivors of IPV experience higher levels of parenting stress, depression, anxiety among other adverse outcomes (Barnyard, Williams, Siegel, & West, 2002; Mitchell et al., 2006). Thus, parents who are experiencing IPV might also experience depression, anxiety or substance use problems which may preclude them from taking advantage of contextual resources such as high CIC that may protect for children’s behavioral problems. These variables were not examined in our study. A second possible explanation is related to isolation and IPV, as social isolation is one feature of those experiencing IPV (Phelan et al., 2005). Isolated families would be less likely to have high social cohesion with neighbors and

engage in and take advantage of positive residential environments characterized by high CIC. Finally, while it is possible that since our measure of CIC was based upon parental report, the problem of same source bias might be contributing to the positive association between CIC and externalizing child behavior problems. However, if same source bias were a significant problem, other neighborhood variables based upon parent report should also show associations but did not (e.g., negative climate). Moreover, if same source bias was a problem it is unlikely that it would only be a problem for families in non-IPV households.

The combination of IPV and residing in neighborhoods with negative characteristics such as high levels of deprivation or negative social climate did not exacerbate child behavioral problems. Sample size may have been an issue since in models that included only neighborhood factors and partner violence, negative social climate and neighborhood concentrated disadvantage were marginally significant in their association with behavioral problems. However, our findings suggest that adversity from the combination of negative neighborhood conditions and IPV, once family level income is accounted for, do not cumulate to worsen child behavioral problems.

Our findings can be partially compared to past studies that included information about IPV and about community factors. The Hazen et al. study (2006), unlike our study, found no association with community factors on children's behavioral problems. Oravecz et al. (2008) only measured community violence and reported a significant association with both internalizing and externalizing preschooler's behaviors. We included a broader set of community factors compared to both these studies including a neighborhood level measure of socioeconomic position. It is not clear, for example, whether community violence is a proxy for community level socioeconomic position or whether the community violence itself is the risk factor since Oravecz et al. (2008) did not include neighborhood socioeconomic position in their models. Our measure of negative social climate included some scales related to crime and victimization but was not found to be associated with children's outcomes in our study. Future studies might include a broad set of neighborhood variables to more accurately identify and specify neighborhood risk.

While the role of parenting was not the primary focus of the paper, we did examine whether parenting mediated the associations between IPV and children's behavioral problems. While we had initially proposed that parenting practices might explain the relation between IPV and child outcomes, we found weak support for this pathway. One other study has examined these relations but from a different perspective. Hazen et al. (2006), in a study comprised exclusively of abused or neglected children, examined whether harsh parenting such as caregiver use of corporal punishment or use of psychological aggression was a modifier between the IPV and externalizing and internalizing behaviors in children 4–14 and reported small effects (e.g., less than 1/6 of a standard deviation difference between those who used or did not use harsh parenting). Our study, by contrast, informed by theory and findings from previous research, examined parenting as a mediator of the relation between IPV and child outcomes. In our study, harsh parenting as indicated by parental hostility or harsh parental discipline did not mediate associations between IPV and behavioral problems. Positive parenting was not examined in the Hazen study further complicating the comparison of the two studies.

As a main effect, parental eliciting was significantly associated with internalizing and externalizing behaviors. Positive, warm parenting provides a supportive context for children to thrive and acting as a buffer from negative and stressful environments. In turn, this supportive context may prevent children from feeling anxious or depressed or from engaging in negative behaviors. In our study, parenting hostility, while significantly associated with both externalizing and internalizing problems in the correlation analyses, was significantly associated only with externalizing behaviors in children in the fully adjusted regression models. Parental harshness was marginally significant in the correlation analyses with internalizing behaviors and not significant with either outcome in the fully adjusted regression models.

The limitations of our study should be kept in mind when interpreting the results. First, our measure of IPV is based upon a screening tool and may not fully characterize the types and severity of violence that occurs in families. And while we had wanted to analyze our data by type of abuse or violence, there was significant overlap making the examination of single categories (e.g., domination/control) infeasible. The measure that we used, the HITS scale, is highly correlated with the Conflict Tactics Scale, one of the most widely used measures within the IPV literature (Bonomi et al., 2005; Sherin et al., 1998). While we had no data on children's direct observation of IPV, studies suggest that children "observe" IPV in multiple ways such as by hearing conflict or seeing consequences of abuse. Children residing in families experiencing IPV are aware of or have high rates of witnessing the IPV (Carter, Weithorn, & Behrman, 1999). Moreover, Kitzman et al. (2003) reported in their meta-analysis that effect sizes were similar whether studies used or did not use measures that assessed witnessing IPV by children. Nevertheless, future studies should measure more fully the IPV experiences of all family members including the witnessing and knowledge of IPV going on within the family. Because patterns of IPV are dynamic, longitudinal designs that can link more or less intensive levels of IPV with changes in children's behavioral problems are also desirable. We were unable to easily ask questions about child abuse in our study. Given that the co-occurrence of child and partner violence is high, this is an additional gap in our study.

In neighborhood studies, the issue of selection effects is a major source of concern. That is, neighborhood effects may be due to the non-random selection of residents into their neighborhoods. As just one example, financial barriers keep low-income families from residing in high income neighborhoods of the city. Thus, what is labeled an effect of neighborhoods may in fact be explained by unmeasured person related characteristics that are related to why an individual or family resides in the neighborhood. We attempted to control for one of the biggest selection factors, family income, in all of our regression analyses, but there is no solid method of fully addressing the issue of selection in observational studies. The impact of such selection effects on our findings would be minimal given that our neighborhood characteristics had small if non-significant effects on outcomes.

Our sample size may also have been a limitation of our study. The effect sizes of the associations we report, estimated between .30 and .50, would be considered moderate (Cohen, 1988), but we may have been limited in our ability to detect smaller effect sizes due to our sample size. The marginal association we observed for the interaction between



neighborhood negative social climate and IPV might have been stronger had our sample size been larger. Finally, the cross-sectional nature of our study does not allow us to make causal inferences about the associations we report here. However, we have been able to generate moderately strong associations such that these should prove to be fruitful avenues of investigation in future longitudinal studies.

Our findings have implications for future research. Future studies examining the determinants of children's behavioral problems should measure family's and children's exposure to IPV including whether type of IPV (e.g., physical, psychological, domination, etc) is associated with type of behavioral problem. Studies in this area in the future might also consider including multiple indicators of socioeconomic position. The two measures we used in our study yielded slightly different findings with regard to the association of socioeconomic position and IPV. When education was examined, an inverse relationship was found for socioeconomic position and IPV, but when family income-to-needs ratio was used, an inverse J-shaped association was demonstrated. Our poverty measure was more refined measuring high and very low income and is more likely to reflect the actual nature of the relationship. Thus, the limitations of education alone should be considered in future studies (O'Campo & Burke, 2004).

Future studies should also include information on parenting behaviors, family interaction, support factors, and a rich array of neighborhood factors to facilitate a greater understanding of the pathways by which partner and family violence affects children's well-being. Such information is critical for the design of programs to improve children's behavioral adjustment.

In an effort to address the problem of IPV, screening has been widely recommended (ACOG Committee on Health Care for Undeserved Women, 2006; Committee on Child Abuse and Neglect, 1998; U.S. Preventive Services Task Force, 2004). Our findings underscore the need for such efforts given the high overall prevalence of partner violence reported here. Such efforts in all settings should include efforts to screen both low- and high-income families as the latter may be an under-recognized at-risk group. Screening and assessment efforts should also go beyond a focus on physical violence. Not only are other types of partner violence equally important in contributing to stressful family environments that are unhealthy for children, but, as our findings suggest, may be more prevalent. Asking about verbal abuse and controlling behaviors should be part of a screening or assessment protocol. Current screening efforts and protocols for screening rarely include assessment of whether the victim is a parent and or whether other members of the household are victims. Since interventions and assistance for single individuals versus family caregivers would differ, screening programs might also inquire about family status. While neighborhood characteristics such as CIC may provide additional protection over and above family and parenting factors for children's behavioral problems, our results suggest that families experiencing IPV cannot take advantage of such resources. It is likely that parental factors and family environments are compromised among households experiencing IPV. This further suggests that neighborhood level interventions that are specifically targeting children's outcomes might not reach or be effective for families experiencing partner

violence. Thus, parental factors such as parenting style and parental mental health should be addressed in addition to the resolution of IPV.

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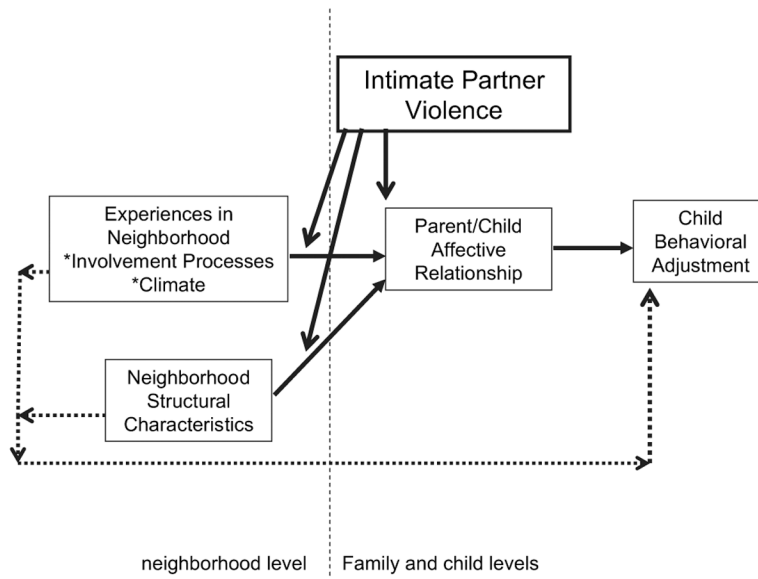
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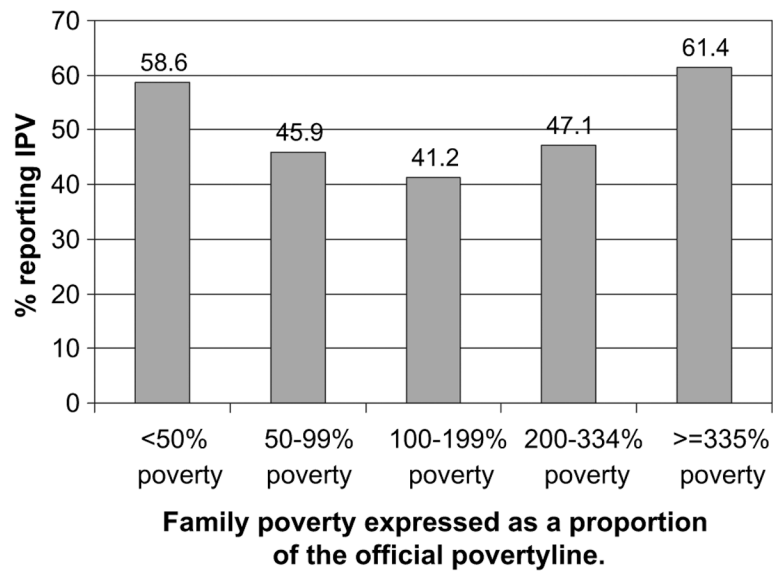
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**Fig. 1.** Hypothesized relation between neighborhood processes, intimate partner violence, parenting and children’s behavioral outcomes.



**Fig. 2.** Proportion of caregivers who report IPV by family income expressed in relation to the official poverty line – 100% poverty represents a family living at the official poverty line.



**Table 1**Frequency for partner violence items ( $N = 393$ ).

	<i>N</i>	%
Partner insults/talks down to you		
Never	257	65.4
Rarely	84	21.4
Sometimes	32	8.1
Fairly often	5	1.3
Frequently	7	1.8
Missing	8	2.0
Partner screams/curses at you		
Never	247	62.8
Rarely	100	25.4
Sometimes	34	8.7
Fairly often	4	1.0
Frequently	3	.8
Missing	5	1.3
Partner threatens you with harm		
Never	366	93.1
Rarely	14	3.6
Sometimes	4	1.0
Fairly often	2	.5
Frequently	0	.0
Missing	7	1.8
Partner physically hurts you		
Never	366	93.1
Rarely	13	3.3
Sometimes	6	1.5
Fairly often	1	.3
Frequently	0	.0
Missing	7	1.8
Partner restricts your actions		
Never	317	80.7
Rarely	39	9.9
Sometimes	19	4.8
Fairly often	4	1.0
Frequently	7	1.8
Missing	7	1.0
Any intimate partner abuse		
Yes	197	50.1
No	196	49.9

**Table 2**Characteristics of study sample ( $N = 393$ ).

	<i>N</i>	%
<b>Neighborhood characteristics</b>		
Concentrated economic disadvantage		
Highest quartile	97	24.7
Lowest three quartiles	295	75.1
Missing	1	0.3
Community involvement with children (CIC)		
Highest quartile	98	24.9
Lowest three quartiles	293	74.6
Missing	2	0.5
Negative social climate (NSC)		
Highest quartile	97	24.7
Lowest three quartiles	280	71.2
Missing	16	4.1
<b>Family characteristics</b>		
Race/ethnicity (child)		
White/non-Hispanic	123	31.3
Black/non-Hispanic	204	51.9
Hispanic	16	4.1
Asian or Pacific Islander	2	0.5
American Indian	1	0.3
Multi-racial	47	12
Family Structure		
Nuclear	190	48.3
Single parent	174	44.3
Other	29	7.4
Educational attainment		
Less than high school	75	19.1
High school/GED	143	36.4
More than high school	173	44
Missing	2	0.5
Poverty status		
<50% poverty	70	17.8
50–99% poverty	74	18.8
100–199% poverty	85	21.6
200–334% poverty	68	17.3
335%+ poverty	83	21.1
Missing	13	3.3

**Table 3**

Intercorrelations of CBCL problem behavior scores, IPV, parenting variables and neighborhood variables.

	1	2	3	4	5	6	7	8	9	10
1. Internalizing behavior	1.00									
2 Externalizing behavior	.59**	1.00								
3. IPV <sup>d</sup>	.16**	.21**	1.00							
4. Eliciting	-.16**	-.28**	-.06	1.00						
5. Connectedness	-.08	-.06	.11*	.14*	1.00					
6. Hostility	.12*	.17**	.05	-.06	-.17**	1.00				
7. Harsh parental discipline	.01	.07	-.06	-.13*	-.24**	.11*	1.00			
8. Neigh conc eco disadv	.06	.08	-.04	-.04	-.31**	.13*	.17**	1.00		
9. Neighborhood CIC	-.06	-.02	.06	.13**	.14**	-.11*	-.08	-.27**	1.00	
10. Neighborhood NSC	.13*	.12*	.02	-.06	-.18**	.08	.18**	-.41**	-.41**	1.00

\*  $p < .05$ ;

\*\*  $p < .01$ .

<sup>d</sup> Spearman rank coefficient.

CBCL problem behavior scores and IPV status stratified by quartiles of three neighbourhood characteristics.

Table 4

	3 Lowest quartiles			Highest quartile			
	No IPV	IPV	Mean (SD)	No IPV	IPV	Mean (SD)	IPV × Eco
	Mean (SD)	Mean (SD)	F	Mean (SD)	F	F	F
<b>Neighborhood concentrated economic disadvantage (Eco)</b>							
Internalizing problems	47.08 (9.49)	50.22 (8.72)	50.02 (11.37)	50.92 (9.37)	3.32 <sup>+</sup>	2.70	1.03
Externalizing problems	48.23 (9.44)	52.07 (8.82)	51.00 (11.31)	54.13 (9.34)	9.86 <sup>**</sup>	4.74 <sup>*</sup>	.10
<b>Neighborhood community involvement with children (CIC)</b>							
Internalizing problems	48.38 (10.48)	50.50 (8.76)	46.10 (8.68)	50.06 (9.28)	7.52 <sup>**</sup>	1.50	.70
Externalizing problems	50.08 (9.98)	52.37 (8.81)	45.59 (8.89)	53.23 (9.54)	20.61 <sup>**</sup>	2.75 <sup>+</sup>	6.01 <sup>*</sup>
<b>Neighborhood negative social climate (NSC)</b>							
Internalizing problems	47.66 (10.11)	48.93 (8.48)	48.23 (10.27)	53.60 (9.16)	8.87 <sup>**</sup>	5.55 <sup>*</sup>	3.39 <sup>+</sup>
Externalizing problems	48.890 (10.25)	51.42 (8.38)	49.15 (8.89)	55.08 (10.30)	14.44 <sup>**</sup>	3.09 <sup>+</sup>	2.32

<sup>+</sup>  $p < .10$ ;

<sup>\*</sup>  $p < .05$ ;

<sup>\*\*</sup>  $p < .01$ .

**Table 5**  
Multilevel regression of CBCL problem behaviors on IPV, neighborhood, and parenting factors.

	Model 1		Model 2		Model 3		Model 4	
	b (se)	z	b (se)	z	b (se)	z	b (se)	z
<b>Internalizing problems</b>								
IPV	2.33 (.97)	2.40*	2.12 (.99)	2.14*	1.98 (1.39)	1.42	1.65 (1.45)	1.14
Neigh conc eco disadv	-	-	1.20 (1.58)	.76	-.02 (.003)	.57	-.02 (.003)	-.07
Neighborhood CIC	-	-	-1.01 (1.18)	-.85	-1.58 (1.64)	-.96	-.88 (1.74)	-.51
Neighborhood NSC	-	-	2.74(1.26)	2.18*	1.02 (1.78)	.57	1.75 (1.86)	.94
IPV × neigh eco disadv	-	-	-	-	-4.01 (2.37)	-1.69 <sup>+</sup>	-3.47 (2.44)	-1.43
IPV × neigh CIC	-	-	-	-	1.42 (2.33)	.61	1.30 (2.45)	.53
IPV × neigh NSC	-	-	-	-	3.23 (2.36)	1.37	2.75 (2.45)	1.12
Eliciting	-	-	-	-	-	-	-2.24 (1.01)	-2.21*
Connectedness	-	-	-	-	-	-	-.22 (1.03)	-.21
Hostility	-	-	-	-	-	-	2.59 (1.65)	1.56
Harsh parental discipline	-	-	-	-	-	-	-.60 (1.30)	-.46
<b>Externalizing problems</b>								
IPV	3.34 (.96)	3.48***	3.22 (.97)	3.30***	1.38 (1.37)	1.01	.63 (1.39)	.45
Neigh conc eco disadv	-	-	1.44 (1.49)	.97	-.001 (.003)	2.52*	-.001 (.003)	.11
Neighborhood CIC	-	-	-1.38 (1.17)	-1.18	-3.97 (1.62)	-2.45*	-3.37 (1.67)	-2.01*
Neighborhood NSC	-	-	.56 (1.24)	.45	-1.29 (1.75)	-.74	-1.89 (1.77)	-1.07
IPV × neigh eco disadv	-	-	-	-	-1.58 (2.34)	-.68	-.99 (2.37)	-.42
IPV × neigh CIC	-	-	-	-	5.75 (2.32)	1.62*	4.99 (2.36)	2.11*
IPV × neigh NSC	-	-	-	-	3.75 (2.32)	1.62	3.86 (2.35)	1.64
Eliciting	-	-	-	-	-	-	-3.86 (.96)	-4.01***
Connectedness	-	-	-	-	-	-	1.00 (.99)	.97
Hostility	-	-	-	-	-	-	4.04 (1.59)	2.53*
Harsh parental discipline	-	-	-	-	-	-	-.16 (1.24)	-.13

Note. CIC = potential for community involvement with children; NSC = negative social climate. All models are adjusted for child gender, parental education, family income-to-needs ratio, and the number of ratable episodes in the observational interview.

.10' < .d  
\*\*  
'50' < .d  
\*  
'10' < .d  
+

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