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Exposure to Interpersonal Violence and Socioemotional Adjustment in Economically Disadvantaged Preschoolers

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Abstract

Focusing specifically on the experiences of economically disadvantaged preschoolers, the relations between interpersonal violence exposure, behavior problems, and social skills were examined in both the home and school settings. In this racially and ethnically diverse sample of preschoolers from poor, urban households ($N = 64$; 3–6 years old; 56% female), many children (33%) had been exposed to at least one type of interpersonal violence, and even more (70%) had been exposed to any type of potentially traumatic event (PTE). Although exposure to interpersonal violence was not directly associated with parent- or teacher-reported behavior problems or social skills, a significant interaction effect was observed between exposure to interpersonal violence and teacher-reported internalizing problems in predicting teacher-reported social skills; specifically, for children with the highest levels of internalizing problems, a positive relation between interpersonal violence exposure and social skills was observed. This indirect effect was observed only in the school setting, whereas children in this high-risk sample appeared to demonstrate resilience in the home setting. Given these high rates of exposure, additional, clinically-relevant research is needed to inform interventions for this vulnerable population.

Keywords

interpersonal violence; behavior problems, social skills; poverty; preschool

Although preschoolers were previously thought too young to be affected by potentially traumatic events (PTEs), a growing body of literature suggests that they are at increased risk both for exposure (Fantuzzo & Fusco, 2007) and for trauma-related developmental problems (Mongillo, Briggs-Gowan, Ford, & Carter, 2009; D'Andrea, Ford, Stolbach, Spinazzola, & van der Kolk, 2012). Interpersonal violence – including acts of violence, either witnessed or experienced directly, that involve harm or threat to one's person or primary caregiver by another person – comprise a category of PTEs that may lead to behavioral and socioemotional problems, including post-traumatic stress symptoms, in young children (Luthra et al., 2009; Graham-Bermann et al., 2008). Witnessing or experiencing violence against oneself or others may dramatically alter understandings of the world for preschool-

age children who, in the context of their limited developmental skills to process the trauma, may develop internalizing and externalizing problems. Young, trauma-exposed children may also have difficulty interacting with others in their attempt to keep themselves safe and to reconstruct their world views (Baker & Cunningham, 2009). We consider the impact of exposure to interpersonal violence on behavior problems and social skills, in both the home and school settings, for preschoolers already facing the stress of growing up in poverty.

Preschoolers' exposure and reactions to potentially traumatic events

Economic disadvantage is an established risk factor that exacerbates the already-high risk of exposure to PTEs for preschoolers: in a recent study, 26% of 24 to 48 month olds in an economically diverse sample had been exposed to PTEs, and these rates were significantly greater – as high as 49% – among the subset of these children who were living in poverty (Briggs-Gowan, Ford, Fraleigh, McCarthy, & Carter, 2010). Indeed, social and economic factors, such as low household income, parental depression, or having a single parent, are powerful predictors of exposure to interpersonal violence and other PTEs among preschoolers (Linares et al., 2001); these factors are also associated with behavior problems, and recent research, particularly in the field of domestic violence exposure, has attempted to tease apart the effects of violence exposure from its contextual cofactors on children's adjustment (Hungerford, Wait, Fritz, & Clements, 2012). For multiple reasons, economically disadvantaged children are already at heightened risk for negative behavioral and socioemotional outcomes, and exposure to interpersonal violence may compound this risk (Crusto et al., 2010; Margolin, Vickerman, Oliver, & Gordis, 2010). The current study examines other factors associated with poverty, including single parenthood, immigration, income, and parent education, as potential covariates..

Different categories of PTEs, including interpersonal violence, non-interpersonal trauma, and traumatic loss, have been shown to produce distinct emotional and behavioral responses in young children (Graham-Bermann et al., 2008; Briggs-Gowan et al., 2010a; Margolin et al., 2010). For example, non-interpersonal PTEs (e.g., transportation accident, natural disasters) have been associated with specific phobias, and traumatic loss PTEs (e.g., death of a parent or close relative) have been associated with PTSD as well as heightened internalizing and externalizing symptoms, while interpersonal violence PTEs (e.g., witnessing domestic or community violence, being physically attacked) have been associated with broader symptomatology, including both internalizing and externalizing disorders (e.g., depression, separation anxiety, PTSD, conduct problems) in preschool-age children (Briggs-Gowan et al., 2010a). Interpersonal violence, particularly when involving family members, is especially associated with post-traumatic stress symptomatology in young children (Luthra et al., 2009; Graham-Bermann et al., 2008). Research on children's exposure to domestic or intimate partner violence has greatly contributed to our understanding of the developmental outcomes of interpersonal violence more broadly (Hungerford et al., 2012) and suggests that interpersonal trauma exposure, as distinct from non-interpersonal trauma or traumatic loss, may be uniquely damaging and may carry a greater potential to disrupt typical developmental trajectories. The current study focuses specifically on interpersonal violence, and its relation to behavioral and social development

across home and school domains for preschoolers already facing the overarching stress of economic disadvantage.

Parents' exposure to interpersonal violence

When assessing young children's exposure to interpersonal violence, it is important to consider rates and types of parents' exposure and its implications for child adjustment. In similar samples of young children, rates of parental exposure are high, and are strongly associated with rates of children's exposure (e.g. Thakar, Coffino, & Lieberman, 2013). In their seminal work, Scheeringa and Zeanah (2001) propose that parents' own exposure to traumatic events may impact children in multiple ways, including *vicarious traumatization*, in which the parents' exposure impairs their well-being and parenting practices in such a way that children, too, show trauma-related symptoms, and *compounded effects*, whereby, when both children and parents are exposed directly to PTEs, the impact of child exposure on adjustment will depend, in part, on parents' own symptoms and parenting behaviors. Related research by Hinchey and Gavelek (1982) showed that parental exposure to domestic violence, and children's witnessing of these domestic violence events, can impact young children's capacities for empathy, as well as their feelings and behavior toward their traumatized parents. It is evident that there are multiple pathways through which parents' exposure to interpersonal violence may carry ramifications for children's adjustment. In this study, we examine how parents' exposure combines with children's exposure to interpersonal violence to predict adjustment.

Behavior problems and exposure to interpersonal violence

A growing body of research shows that exposure to PTEs, notably interpersonal violence, early in life can lead to differences in behavioral adjustment, including clinical levels of internalizing and externalizing problems (Marks, Glaser, Glass, & Horne, 2001). Exposure to interpersonal violence among very young children has been found to predict anxiety symptoms, but not depressive symptoms (Marakovitz, Wagnmiller, Mian, Briggs-Gowan, & Carter, 2011) and has been linked to externalizing problems, such as noncompliance and aggression, among preschoolers (Jouriles et al., 2009; Holt, Buckley, & Whelan, 2008); these externalizing problems may be partly due to exposed children's inability to understand conflict situations coherently (Minze, McDonald, Rosentraub, & Jouriles, 2010).

Social skills and exposure to interpersonal violence

While some children are clearly at heightened risk for maladjustment following violence exposure, research consistently shows great variability in young children's post-traumatic behavioral responses (Hungerford et al., 2012). Some exposed children go on to show normative levels of behavior problems and even positive adjustment (e.g., Martinez-Torteya, Bogat, von Eye, & Levendosky, 2009; Kim-Cohen, Moffitt, Caspi, & Taylor, 2004), while others demonstrate compromised social or behavioral functioning (e.g. Briggs-Gowan et al., 2010a; Schwartz & Proctor, 2000). As a result, effort has been directed toward identifying both mediators and moderators of the relation between exposure and subsequent developmental outcomes. Often, these third variables are parent-level factors; for instance, in the context of intimate partner violence, strong parenting skills and practices appear to

contribute to children's emotional regulation, prosocial skills, and other aspects of socioemotional resilience (e.g., Howell et al., 2010). In this study, we consider how child factors, namely internalizing and externalizing problems, may moderate the relation between exposure and children's social skills.

Until recently, the predominant outcome of interest in studies of young children's exposure to interpersonal violence was behavior problems; however, that focus has shifted to capture cognitive and social functioning as well (Hungerford et al., 2012). Traditionally, researchers have tested internalizing and externalizing problems as mediators – not moderators – of the relation between exposure to PTEs and social skills (Katz, Hessler, & Annett, 2007; Schwartz & Proctor, 2000). These models are largely guided by the understanding that exposure may result in internalizing and externalizing problems that in turn may lead to difficulty demonstrating developmentally-appropriate social skills (Howell et al., 2010). For example, anxiety may inhibit prosocial behavior and comfortable peer interactions (Rubin & Bowker, 2010), while aggression may negatively influence the way that children are received by other children and their social acceptance (Sturaro, van Lier, Cuijpers, & Koot, 2011). Too, researchers have found a direct relation between preschool exposure to interpersonal violence and social outcomes, including more aggressive responses, hostile attributions, and endorsement of socially unacceptable behaviors among exposed than unexposed children (Ziv, 2012).

Research has considered whether children exposed to interpersonal violence and other PTEs may be socially resilient too. Indeed, physically abused youngsters may in fact demonstrate particularly strong skills in social information processing domains. Indeed violence-exposed children have shown a heightened awareness toward social surroundings and hypervigilance to negative environmental stimuli (e.g., angry faces, background fighting), requiring less visual information to accurately detect facial emotions (Pollak & Singa, 2002) and demonstrating greater and more efficient memory of negative emotional content compared to their non-abused peers (Pollak, Vardi, Putzer Bechner, & Curtin, 2005; Pollak & Tolley-Schell, 2003; Reider & Cicchetti, 1989). Such findings suggest that some children exposed to interpersonal violence may become particularly attuned to social information in the environment, especially those social cues that foretell anger and other negative emotions. Prioritizing this type of learning may serve a self-protective, adaptive function for interpersonal violence-exposed children at the same time that it may also handicap these children's ability to develop healthy self-regulation of emotions and attention (see Pollak et al., 2005). On the other hand, other research suggests that violence exposure results in compromised functioning, not only in the behavioral domain, but also in terms of social information processing (e.g. Schwartz & Proctor, 2000). Finally, this self-protective social vigilance, if present, may be a marker of severity, coming into play only for those children most strongly affected by violence exposure and therefore most behaviorally symptomatic, but not for those who exhibit behavioral resilience. Our analyses will test the question of whether young, trauma-exposed children experience heightened social skills related to non-exposed children and whether this association is moderated by degree of internalizing or externalizing symptomatology. Early social skills are a critical outcome variable, with benefits that extend into later childhood, adolescence, and even adulthood and include desirable vocational outcomes, educational attainment, self-regulatory skills, and mental

health (Caspi, Wright, Moffitt, & Silva 1998; Obradovi , Burt, & Masten, 2010). Given these long-term impacts, understanding how social skills relate to early violence exposure is imperative, particularly for children already facing significant economic disadvantage, a known risk factor for socioemotional development.

Adjustment across home and school contexts

Young children's enactment of coping skills following exposure to interpersonal violence may be context-dependent (Ornduff & Monahan, 1999). Thus, it is important to consider children's behavioral and social adjustment both in the home and school settings following exposure. In light of the heightened rates of domestic violence among families with preschoolers (Fantuzzo & Fusco, 2007), and the complicated relations between children's exposure to interpersonal violence, parents' exposure to interpersonal violence, parents' affective symptoms, and parenting behavior, it is perhaps unsurprising that so much attention has been focused on children's behavioral adjustment in the home context. However, while it might be reasonable to expect that children's patterns of behavior and prosocial skills would generalize from the home to the school setting, it is also possible that their functioning may appear very different in school from how it does at home (Hungerford et al., 2012), particularly if home feels insecure or unsafe. This study considers both home and school contexts, with data from both teachers and parents..

In sum, we sought to answer the following questions in the current study:

1. What are the rates of exposure to interpersonal violence for preschoolers facing significant economic disadvantage? How do parents' exposure to interpersonal violence and socio-demographic factors relate to children's exposure?
2. Is exposure to interpersonal violence associated with greater internalizing, externalizing, and overall behavior problems, and lower social skills for preschoolers, in home or school contexts?
3. Do preschoolers' internalizing, externalizing, or total behavior problems moderate the relation between exposure to interpersonal violence and social skills? Namely, does violence exposure predict social skills more strongly for children with internalizing or externalizing symptomatology than for children with lower symptomatology? If so, is this moderation effect observed in the home or school settings?

Methods

Participants

Participants were 64 preschool-aged children and their parents enrolled in a longitudinal study on the transition to school among economically disadvantaged families. The majority were recruited in-person at Boston-area Women Infants and Children (WIC) offices, which provide nutritional support to low-income families of young children; others enrolled after seeing flyers at WIC offices or were referred by friends or family. At the time of enrollment, which occurred in summer, inclusion criteria were as follows: (a) children were between 3 and 5 years old (36-71 months), (b) children were entering preschool or kindergarten in the

fall, and (c) in line with WIC eligibility criteria, enrolled families were required to have a household income at or below 185% of the federal poverty level (for a family of four, 185% of the poverty level is \$41,348). The current study reflects the second data collection visit, conducted, on average, 7 months after enrollment (range: 4-12 months). Demographics (child and parent age, income, gender, employment, immigration status, native language, single parenthood, parental education) were comparable between the 64 completers and the 14 who could not be reached for the second visit.

Children were, on average, 4 years 10 months old (range: 41-83 months, $SD = 9.3$ months); 56% were female. Race was assessed with an open-ended, parent-report item later aggregated into categories; children were 42% Latino, 38% Black, 11% multiracial, and 9% White. Most children were born in the mainland U.S. (94%). The majority (83%) had attended at least some school ($M = 1.6$ years of schooling), most often Head Start (45% of the school-attending sample). Parent participants were 98% biological mothers and one kinship legal guardian, with a mean age of 30.9 years ($SD = 7.9$, range: 21-63); 39% were single parents. Fifty-six percent immigrated to the U.S., with highest numbers coming from Dominican Republic (28%) and Cape Verde (8%). Fifty-nine percent identified a non-English native language, including Spanish (34%), Cape Verdean or Portuguese Creole (11%), both English and Spanish (6%), Haitian Creole (3%), and Portuguese (3%). Parents self-identified racially as 41% Latino, 41% Black, 16% White, and 3% multiracial. Families faced significant economic disadvantage: 68% reported an annual income at or below \$25,000 and 43% earned at or below \$15,000/year; on average, 3.8 individuals relied on this household income. Forty-eight percent were employed full- or part-time; 82% had a high school diploma and 41% had attended at least some college.

Thirty-eight teachers participated, representing 72% of school-attending children. On average, teachers had 13 years of teaching experience ($SD = 9.2$, range 3-40). Most were female (87%) and had master's degrees (55%). Teachers identified racially as White (61%), Latino (16%), Black (11%), multiracial (3%), and other (3%); 8% did not report their race.

Procedures

Parent questionnaires assessing demographics, PTE exposure, behavior problems, and social skills were completed during lab-based family assessments approximately 7 months (range: 4-12 months) after the start of the school year. Teacher questionnaires were collected via mail shortly after the visit. For participation in this visit, which lasted 2-3 hours and included additional activities not relevant to the present paper, parents received \$95 and a developmental report, and children received sticker incentives and a small prize; teachers received \$25.

Assessments

Children's Exposure to Potentially Traumatic Events—Children's exposure to PTEs was assessed using the 30-item, Traumatic Events Screening Inventory – Parent Report Revised (TESI-PRR; Ghosh-Ippen et al., 2002), which assesses experiences of children ages 0-6 years. Originally a semi-structured interview, we developed a written version; parents responded yes/no indicating whether their children had experienced 30

different types of PTEs in their lifetime. The 14 items involving exposure to interpersonal violence events (i.e., “Has your child ever seen someone use a weapon to threaten or hurt a family member?”) were the focus of this study; other items reflected non-interpersonal events (5 items, e.g., a serious transportation accident,) traumatic loss events (6 items, e.g., experiencing the death of a loved one,) and other uncategorized events (5 items, e.g., immigration-related events). The TESI-PRR has been used with urban, low-income preschoolers (Crusto et al., 2010) and youth exposed to intimate partner violence (Lang & Stover, 2008). The original interview-format TESI-PR has adequate test–retest reliability: previous kappas range from .50 to .79 (Ford et al., 2000). Our sample’s alpha was .86.

Parents’ Exposure to Potentially Traumatic Events—Parents completed the *Life Events Checklist* (LEC; Gray, Litz, Hsu, & Lombardo, 2004), which contained a checklist of 18 potentially traumatic events. For each event, parents indicated (yes/no) whether (a) they had personally experienced the event; (b) they witnessed the event happen to somebody else; (c) the event had happened to a friend or family member; (d) they were not sure; and (e) the event did not apply. Only events that parents experienced personally [category (a) above] were considered in the current study. Parents’ exposure to interpersonal violence (8 items) was the focus of the current study; other items reflected non-interpersonal events, traumatic loss events, and uncategorized events. The LEC was selected for its accessible format, adequate test-retest reliability, convergence with existing measures of exposure, and capacity to predict trauma-related outcomes and symptoms (Gray, Litz, Hsu, & Lombardo, 2004). Internal reliability was .58 for lifetime PTE exposure and .52 for interpersonal violence.

Child Behavior Problems—Parents completed the *Child Behavior Checklist 1.5-5* (CBCL; Achenbach & Rescorla, 2000), containing 99 items indicating internalizing and externalizing problems (e.g., “cries a lot,” “gets too upset when separated from parents,” and “hits others”). The parent indicated whether each item was *not true* (0), *somewhat or sometimes true* (1), or *very true or often true* (2), now or in the past two months. Teachers completed the Caregiver-Teacher Report Form (CTRF; Achenbach & Rescorla, 2000), the 99-item companion measure to the CBCL. Internalizing, Externalizing, and Total Problems T scores of the CBCL and CTRF were utilized in this study. Our alphas for CBCL T scores were .84 (Internalizing), .92 (Externalizing), and .94 (Total); alphas for CTRF T scores were .90 (Internalizing), .96 (Externalizing), and .98 (Total).

Child Social Skills—Parents and teachers completed their respective versions of the *Social Skills Rating System* (SSRS; Gresham & Elliott, 1990). These 38-item measures assess frequency of behaviorally specified social skills on a 3-point rating scale: *not true of the child* (0), *sometimes true* (1), and *often true* (2). In the present study, total social skills standard scores ($M = 100$; $SD = 15$) were used, which had high internal consistency and discriminant validity in the validation sample (Gresham, Elliott, Vance, & Cook, 2011); our alphas were .91 (parent) and .93 (teacher).

Data Procedures

All statistical analyses were performed using SPSS version 19.0. Parent-reported data on children's and parents' exposure to interpersonal violence, behavior problems, and social skills were complete for all 64 participants. Of the 53 children who were attending school at the time of data collection, only 72% of their teachers ($n = 38$) reported on behavior problems and social skills. We used Little's Missing Completely at Random (MCAR) Test to analyze patterns of missing data; results indicated that data were most likely missing completely at random [Little's MCAR test: $\chi^2(6, N = 38) = 9.25, p = .16$]. No differences in demographic, predictor, or outcome variables were found between participants with and without imputed data. In light of these findings, multiple imputation (MI) was employed in five iterations to estimate teacher-reported behavior problems and social skills on the scale level in order to utilize the full school-attending sample ($n = 53$). Data were imputed only for school-attending children. Even with high missingness rates comparable to ours, MI is preferable to listwise deletion; benefits include reduced bias and higher statistical power (Little & Rubin, 2002; Schafer & Graham, 2002).

Data met the first two assumptions of linear regression, including linearity of the relationship between the independent and dependent variables and independence of the errors. Due to the considerable percentage of children who had no previous exposure to interpersonal violence (thus, a score of zero), homoscedasticity of the errors and normality of the error distribution were not uniformly present. Thus, reciprocal transformations were applied to interpersonal violence scores, in which one was added to the score, and then one was divided by that sum; this procedure successfully conformed the data to the assumptions of linear regression.

Results

Rates of Exposure to Interpersonal Violence, Behavior Problems, and Social Skills

Thirty-three percent of children had been exposed to at least one type of interpersonal violence (see Table 1). More broadly, the majority of children (70%) had been exposed to at least one potentially traumatic event (PTE) from any category (including interpersonal, non-interpersonal, or traumatic loss events), with a mean of 2 lifetime events ($SD = 2.3$; range: 0-13 types of events). Forty-two percent of children had experienced at least one type of traumatic loss, while 34% of children had experienced at least one type of non-interpersonal event.

Fifty percent of parents reported having been exposed to at least one type of interpersonal violence (see Table 2). Regarding lifetime PTE exposure of any type, parents' rates of exposure were only slightly higher, at 75%, than the children's. Thirty-nine percent of parents had experienced at least one type of traumatic loss, and 53% had experienced at least one type of non-interpersonal event. Children's and parents' rates of exposure to these categories were correlated: interpersonal violence [$r(62) = .27, p = .03$], total PTEs [$r(62) = .36, p = .003$], traumatic loss events [$r(62) = .29, p = .02$], and non-interpersonal events [$r(62) = .34, p = .007$].

Children's mean internalizing, externalizing, and total behavior problems, as reported by both parents and teachers, were all within the normative range. Children's mean social skills also fell in the average range (see Table 3).

Sociodemographic Factors in Relation to Exposure

Sociodemographic factors were examined in relation to interpersonal violence exposure, including child sex, child age, parent age, parent employment status, parent education level, household income, parent immigration status, and single parent status. The only demographic variable associated with interpersonal violence exposure was the children of native-born parents were exposed to more interpersonal violence than children of immigrant parents [$t(36.8) = -2.65, p = .012$]. Immigration was also related to teacher-reported social skills, with children of immigrant parents rated as having greater social skills than those of native-born parents, and therefore was covaried in subsequent analyses involving both interpersonal violence and teacher-reported social skills.

Relations Among Interpersonal Violence Exposure, Behavior Problems, and Social Skills

Children's exposure to interpersonal violence was marginally correlated with parent-reported externalizing problems and total problems, but not with other parent-reported scores or with teacher-reported adjustment (see Table 4). The Cohen's d effect sizes for the correlations between child exposure and parent-reported internalizing, externalizing, and total behavior problems were small to medium, at .39, .45, and .49, respectively. The Cohen's d effect sizes for the correlations between child exposure and teacher-reported internalizing, externalizing, and total behavior problems were null to small, at $-.02$, .14, and .08, respectively. Effect sizes for the direct associations between child exposure and both parent- and teacher-reported social skills scores were zero. A marginal correlation was observed for parents' exposure with children's parent-reported externalizing problems [$r(51) = .22, p = .08$], but not with other parent- and teacher-reported scores.

Moderation Analyses

A series of six linear regressions tested whether children's internalizing, externalizing, and total behavior problems moderated the relation between exposure to interpersonal violence and social skills. Of these regressions, three tested parent-reported behavior problems and social skills, and three tested teacher-reported behavior problems and social skills; the goal of these domain-specific analyses was to assess separately how exposure to interpersonal violence may affect children's functioning in both home and school settings. In these regressions, the parent immigration status covariate, when present, was entered first, independent variables (children's exposure to interpersonal violence centered and behavior problems centered) were entered second, and the interaction term (the product of centered interpersonal violence exposure and centered behavior problems) was entered third. Social skills were the dependent variable.

The first three regressions, which tested children's parent-reported internalizing problems ($B = 1.12, SE = .78, t = 1.43, p = .16$), externalizing problems ($B = .49, SE = .76, t = .64, p = .52$), and total problems ($B = .67, SE = .77, t = .87, p = .39$) as moderators of the relation between children's exposure to interpersonal violence and parent-reported social skills, did

not yield any significant interactions. In each model, a significant main effect was seen for behavior problems on social skills in the final model, but not for exposure to interpersonal violence.

The last three regressions, which tested children's teacher-reported behavior problems as moderators of the relation between exposure to interpersonal violence and teacher-reported social skills, yielded a significant moderating effect for internalizing problems ($B = -1.03$, $SE = .48$, $t = -2.17$, $p = .03$). Table 5 summarizes the regression findings. A decomposition of this interaction effect showed that higher levels of interpersonal violence exposure were associated with greater social skills in school, but only for children in the top third of internalizing problems ($B = 2.12$, $SE = 1.03$, $t = 2.07$, $p = .04$), and no relation was found between exposure to interpersonal violence and teacher-reported social skills for children in the middle third ($B = 1.00$, $SE = 2.42$, $t = .41$, $p = .68$) or bottom third ($B = 3.36$, $SE = 2.59$, $t = 1.30$, $p = .20$) of teacher-reported internalizing problems. The interaction involving teacher-reported externalizing problems and exposure to interpersonal violence was non-significant ($B = -.68$, $SE = .45$, $t = -1.51$, $p = .13$); however, a marginal interaction effect was observed between exposure to interpersonal violence and teacher-reported total behavior problems – in the same direction as the moderating effect found for internalizing problems – to predict teacher-reported social skills ($B = -.73$, $SE = .42$, $t = -1.75$, $p = .08$). In all three regressions, main effects were observed for behavior problems and the parent immigration covariate on social skills (with children of immigrant parents showing greater social skills than children of native-born parents), but not for children's exposure to interpersonal violence, in the final model.

Discussion

The current study contributes to the research on interpersonal violence among economically disadvantaged preschoolers by examining behavioral and social adjustment across both the home and school environments. Rates of lifetime exposure to potentially traumatic events (PTEs) were high in our preschool sample, at 33% for interpersonal violence events, 34% for non-interpersonal events, 42% for traumatic loss events, and 70% for all types of events. Within the interpersonal violence category, community and domestic violence events were most frequently endorsed, including seeing or hearing people outside the family fighting, hitting, pushing or attacking each other (20%); seeing or hearing family members fighting, slapping, hitting, kicking, or pushing each other (16%); and seeing someone hit, push, or kick a family member (11%). These rates were comparable or slightly lower than those previously reported for economically disadvantaged families, but notably higher than those reported for more economically advantaged families with similar methodology (e.g., Crusto et al., 2010; Briggs-Gowan et al., 2010b; Mongillo et al., 2009). For example, exposure to domestic violence was reported for 28% of preschoolers in an economically disadvantaged community sample (Briggs-Gowan et al., 2010b) and for 42% of preschoolers in an economically disadvantaged clinical sample (Crusto et al., 2010), but for 16% in our sample. Ours being a community sample may account for the absence of sexual abuse reported for child participants, distinct from existing studies with clinical or referred samples. Overall, our work with a community sample demonstrates that young children who face economic disadvantage are at heightened risk for exposure to multiple types of PTEs.

Direct relations between exposure to interpersonal violence and parent- and teacher-reported behavior problems (internalizing, externalizing, and total) or social skills were marginal or non-significant, although medium effect sizes were observed for the relations between exposure and parent-reported behavior problems, suggesting that these associations may be significant with a larger sample. Relations between exposure to interpersonal violence and parent- and teacher-reported social skills were non-significant. This is consistent with previous work suggesting that the association between interpersonal violence exposure and child outcomes may not be direct (Zerk, Mertin, & Proeve, 2009) and reflects the wide range of functioning and adjustment reported for exposed children in past research (e.g. Hungerford et al., 2012). Scheeringa and Zeanah (2001) and others suggest the utility of testing parent-level mediators and moderators to explain why some violence-exposed children are resilient while others go on to develop significant maladjustment; such work may help identify targets for interventions specifically for exposed children.

Our pattern of findings suggests that, among children who face significant economic risk, those exposed to interpersonal violence do not, as a whole, present with elevated behavioral or social impairment. This in itself is an intriguing finding, and the impact of interpersonal violence exposure may be less pronounced for children who already live under the stressful circumstances of urban poverty than for children who experience less socioeconomic stress. Put another way, the effects of interpersonal violence exposure may be muted, at least in the short term, by the overarching stress of economic disadvantage and its associated developmental risks. Future research encompassing a range of socioeconomic experiences could examine whether socioeconomic resources do moderate the relation between exposure and socioemotional adjustment. These young children, in spite of their economic disadvantage, may also be benefiting from protective factors that buffer them from negative reactions to exposure. Further research is needed to identify such potential protective factors and to determine how these can be fostered in other violence-exposed children.

A key contribution of this study is its consideration of children's adjustment in both home and school contexts. Significant interactions between exposure and behavioral adjustment in predicting social skills were found in the school context, but not in the home context. We found that interpersonal violence exposure significantly interacted with internalizing problems – and marginally with total behavior problems – to predict social skills. Specifically, violence exposure was *positively* associated with social skills for children with high internalizing problems, but not for children with average or low internalizing problems. The positive direction of this association is consistent with past literature suggesting that some trauma-exposed children respond to interpersonal violence exposure by devoting disproportionate resources to social learning, which may result in heightened social awareness and accuracy in detecting social cues in the environment (e.g. Pollak & Sinha, 2002). Such heightened social skills may serve an adaptive purpose for those children who are exposed to the most interpersonal violence or who, by nature of their internalizing problems, are most psychologically vulnerable to such exposure. Indeed, our findings suggest that, among trauma-exposed children, those who experience heightened internalizing symptomatology are more prone to this disproportionate social learning and social attunement relative to children with fewer internalizing symptoms.

While these heightened social skills may have immediate adaptive, self-protective benefits for children living with interpersonal violence, this profile is unlikely to lend itself to healthy behavioral adjustment and self-regulation in the long term (Pollak et al., 2005). Further research into this observed interaction effect, including research that involves performance-based social tasks and other, fine-grained measures of social functioning, would elucidate which aspects of social skills are impacted – positively or negatively – by violence exposure, and how these may be influenced by children's internalizing and externalizing symptoms.

The above-mentioned interaction effect was present only for teacher-reported adjustment, but not for parent-reported adjustment. It is worth noting that most interpersonal violence is likely to have occurred in the home or community context, but not in the school context, yet home environments characterized by violence may provide limited opportunities to demonstrate social strengths. Alternatively, these patterns of internalizing problems and social skills may also occur in the home setting – perhaps even originate in the home, and generalize to the school setting – but may be better detected by teachers who possess child development training and a wider mental repertoire of child behavior, and thereby may hold a stronger normative framework against which to accurately compare and report their student's social behavior (Hinshaw, Han, Erhardt, & Huber, 1992).

Strengths and Limitations

Our sample's racial and ethnic diversity is a strength of the study, as is our focus on economically disadvantaged families who are currently under-represented in research. Exposure to interpersonal violence may pose different risks for children who face the salient stressor of economic disadvantage, and for children of color (91% of our sample) who may experience increased race- and ethnicity-related discrimination and disadvantage. Too, our inclusion of a high-risk community sample instead of children recruited specifically for exposure to PTEs improves our understanding of the rates and types of PTE exposure in urban, low-income communities. Our consideration of adjustment in the school setting, with peers and teachers – not exclusively in the home, with parents – further contributes to the literature base.

These strengths must be interpreted in light of some limitations. This study is limited by a small sample of parent-child dyads and an even smaller sample of children (a) who were attending school and (b) whose teachers filled out questionnaires. Also, because we exclusively used parent- and teacher-report measures, the risk of rater bias and shared method variance is also present. Future work ought to include observational data on behavior problems, social skills, or aspects of parent-child relationship dynamics, particularly when considering both children's and parents' exposure to interpersonal violence.

Under-reporting of PTE exposure, partly due to desirability effects, is a prominent concern in this literature. It is reasonable to suspect that our already-high rate of PTE exposure is even greater than observed. Moreover, we have limited information about the nature of children's exposure to interpersonal violence; future work should consider frequency of exposure (number of incidents) within each type of event, children's age(s) at the time of exposure, and whether the exposure occurred in the home, school, community, or another

setting. This last piece of data would be especially helpful in interpreting our differing moderation results between home and school settings. Absent this information, we are limited in drawing conclusions about how child adjustment may relate to the context in which violence occurred.

Future Directions

Our study provides evidence that early exposure to interpersonal violence is not deterministic of negative developmental outcomes. The children in our study showed relatively normative rates of behavior problems and social skills, in spite of growing up in economic disadvantage and in spite of high rates of exposure to interpersonal violence and other types of PTEs. Future work should focus on factors that may promote resiliency and optimal development for such children, particularly those factors that may be targeted in intervention work.

Current research has begun to expand beyond behavior problems and social skills to include emotional competence – including emotional awareness, responsiveness, and self-regulation – and social competence, which reflects the ability to enact social skills across different contexts (e.g., Howell, Miller, Lilly, Graham-Bermann, 2013). Additional work is needed to understand fully the ways in which internalizing problems may moderate the effect of children's exposure to interpersonal violence on their social skills. In particular, research is needed in order to explain when, how, and through which mechanisms children's exposure to interpersonal violence, which in our sample occurred most frequently in the community and home settings, impacts their behavioral and social functioning at school. Previous research with older children has shown the context of interpersonal violence to be important, with different adjustment profiles depending on whether the violence occurred in the community or the home (Malik, 2008). Such findings suggest that an in-depth examination of PTE exposure, including the severity, frequency, and context of such exposures, is needed. Further, in order to develop effective and sensitive interventions for this vulnerable population, we must understand not only the types of events to which children are exposed, but also the developmental timing and outcomes of such exposures. Longitudinal data, not present in the current analyses, would be crucial for such work; repeated assessments over time to identify patterns of exposure would enable the effects of early trauma to be teased apart from those of later traumatic events (Howell et al., 2010). Too, studying children's exposure to interpersonal violence and reactions alongside parents' own exposure, affective symptoms, and parenting practices, could reveal how these interact to shape children's socioemotional development, and provide the framework for trauma-focused interventions (Scheeringa & Zeanah, 2001).

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Figure 1. Interaction Between Children's Interpersonal Violence Exposure and Teacher-Reported Internalizing Problems Predicting Teacher-Reported Social Skills

Note. *** $p < .001$ ** $p < .01$ * $p < .05$ † $p < .10$. For ease of interpretation, number of types of interpersonal violence exposures is displayed on the x-axis; however, a reciprocal transformation was applied to this variable for the regression analysis. Low internalizing = bottom third of CTRF Internalizing Problems T Scores; Medium internalizing = middle third of CTRF Internalizing Problems T Scores; High internalizing = top third of CTRF Internalizing Problems T Scores. Parent immigration status is covaried.

Table 1

Rates of Lifetime Child Exposure to Interpersonal Violence.

Event	Prevalence (%)
All Interpersonal Violence	32.8
Seen or heard people outside the family fighting, hitting, pushing or attacking each other (community violence)	20.3
Seen or heard family members fighting, slapping, hitting, kicking, or pushing each other	15.6
Seen someone hit, push, or kick a family member	10.9
Repeatedly yelled at or threatened	4.7
Seen or heard family members threaten to seriously harm each other	4.7
Physical assault	3.1
Direct threat of serious physical harm	3.1
Been mugged/present while a family member was mugged	3.1
Attack with a weapon	1.6
Seen or heard family members fighting with weapons	1.6
Seen someone use a weapon to threaten or hurt a family member	1.6
Kidnapping	0
Sexual assault/abuse	0
Witness sexual assault/abuse of another person	0

Table 2

Rates of Lifetime Parent Exposure to Interpersonal Violence.

Event	Prevalence (%)
All Interpersonal Violence	50.0
Physical assault	23.4
Sexual assault	23.4
Sudden, violent death of a friend or family member	20.3
Other unwanted/uncomfortable sexual experience	14.1
Assault with a weapon	6.3
Serious injury, harm, or death you caused to someone else	1.6
Combat or exposure to a war zone	0.0
Captivity	0.0

Table 3

Descriptive Statistics of Socioemotional Adjustment Variables.

	N	Range	M	SD	Median	% in Borderline/Clinical Range
Parent Report:						
Internalizing Problems	64	29-72	47.1	10.1	45	5/8
Externalizing Problems	64	28-74	45.7	10.4	44	3/8
Total Problems	64	30-76	46.2	10.1	44	3/6
Social Skills	64	54-131	100.5	19.3	99.5	—
Teacher Report:						
Internalizing Problems	38	34-68	47.5	10.7	47	5/5
Externalizing Problems	38	36-72	49.0	10.8	48.5	6/6
Total Problems	38	29-69	47.5	12.0	44.5	6/6
Social Skills	38	73-128	99.3	14.0	99.5	—

Note. Although missing scale data were imputed for all analyses, these descriptives reflect the original, non-imputed sample. T scores are reported for the CBCL and CTRF scales; standard scores are reported for the SSRS.

Table 4

Bivariate Correlations Among Exposure and Parent- and Teacher-Reported Behavior Problems and Social Skills, Including Cohen's *d* Effect Sizes for Exposure.

	1	2	3	4	5	6	7	8	9
1. Children's Exposure	-								
2. Parents' Exposure	.27* <i>d</i> = .56	-							
3. CBCL Internalizing	.19 <i>d</i> = .39	.09 <i>d</i> = .18	-						
4. CBCL Externalizing	.22† <i>d</i> = .45	.22† <i>d</i> = .45	.64***	-					
5. CBCL Total	.24† <i>d</i> = .49	.17 <i>d</i> = .35	.85***	.93***	-				
6. CTRF Internalizing	-.01 <i>d</i> = -.02	.00 <i>d</i> = .00	-.03	-.15	.06	-			
7. CTRF Externalizing	.07 <i>d</i> = .14	.09 <i>d</i> = .18	-.09	.30*	.12	.69*	-		
8. CTRF Total	.04 <i>d</i> = .08	.04 <i>d</i> = .08	-.04	.25	.12	.91***	.86*	-	
9. SSRS Parent	-.00 <i>d</i> = -.00	-.11 <i>d</i> = -.22	-.25*	-.46***	-.40**	-.21	-.34	-.27	-
10. SSRS Teacher	.00 <i>d</i> = .00	-.17 <i>d</i> = -.35	.02	-.28	-.17	-.56†	-.76*	-.63†	.20

Note. $p < .001$

**
 $p < .01$

*
 $p < .05$

†
 $p < .10$. This table reflects imputed teacher-reported data ($n = 53$).

Table 5

Summary of Linear Regression Analysis for the Interaction Effect Between Interpersonal Violence Exposure and Teacher-Reported Internalizing Problems in Predicting Teacher-Reported Social Skills.

	<i>B</i>	<i>SE B</i>	<i>t</i>	<i>R</i>	<i>R</i> ²	<i>R</i> ²
Step 1				.50	.25	.25
Parent Immigration Status	10.8**	3.9	2.8			
Step 2				.73	.53	.28
Children's Exposure to Interpersonal Violence	-4.2	5.8	-.7			
CTRF Internalizing Problems	-.8***	.2	-4.6			
Step 3				.77	.60	.06
Interaction term: Children's Exposure by CTRF Internalizing	-1.0*	.5	-2.2			

Note. $p < .001$

**
 $p < .01$

*
 $p < .05$

[†]
 $p < .10$. This table reflects imputed teacher-reported data ($n = 53$). All continuous predictors are centered; a reciprocal transformation was applied to children's exposure to interpersonal violence.