6-1-2012

Exposure to Potentially Traumatic Events, Emotional Adjustment, and Social Competence in Preschoolers Facing Economic Risk

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ADJUSTMENT, AND SOCIAL COMPETENCE IN PRESCHOOLERS FACING

ECONOMIC RISK

A Thesis Presented

by

HILLARY HURST

Submitted to the Office of Graduate Studies,
University of Massachusetts Boston,
in partial fulfillment of the requirements for the degree of

MASTER OF ARTS

June 2012

Clinical Psychology Program

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ABSTRACT

EXPOSURE TO POTENTIALLY TRAUMATIC EVENTS, EMOTIONAL

ADJUSTMENT, AND SOCIAL COMPETENCE IN PRESCHOOLERS FACING

ECONOMIC RISK

June 2012

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The current study examined the relationship between exposure to potentially

traumatic events (PTEs), emotional adjustment, and social competence in a sample of

economically-disadvantaged, racially and ethnically diverse preschool-aged children

(n=63; 60% female; average age = 52 months, S.D. = 10.30, range: 36-74 months). In

this cross-sectional study, primary relationships between exposure to PTEs and emotional

adjustment, and exposure to PTEs and social competence were examined. Additionally,

parent affective symptoms were tested as a moderator of the relationship between child

exposure to PTEs and emotional adjustment, and emotional adjustment was tested as a

moderator of the relationship between child exposure to PTEs and social competence.

Gender effects of these relationships also were tested, on an exploratory basis. The

results of the current study suggest that exposure to PTEs involving interpersonal

violence are predictive of parent-reported emotional adjustment, and also that teacher-

reported emotional adjustment moderates the relationship between exposure to PTEs and

teacher-reported social competence. This research contributes to existing literature,

particularly on the relationship between emotional adjustment and social competence,

which is rarely studied through the lens of economic disadvantage and exposure to PTEs.

ACKNOWLEDGEMENTS

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CHAPTER 1

BACKGROUND AND SIGNIFICANCE

Preschool-Age Children's Exposure and Reactions to PTEs

While it was previously believed that very young children are too young to be affected by potentially traumatic events (PTEs), a growing body of literature suggests that they are both at risk for exposure to PTEs and for developing an array of developmental problems following such exposures (Brom et al., 2009; Mongillo et al., 2009). In a recent study with a diverse, representative sample of urban and suburban families, more than one-quarter of children between the ages of 24 and 48 months had experienced at least one PTE; however, this rate jumped to 49 percent among those living in poverty (Briggs-Gowan et al, 2010b). Facing economic risk, along with living in a single-parent household and having a parent with depressive symptoms, are powerful predictors of exposure to PTEs for preschool-age children (Linares et al., 2001). While economically-disadvantaged children are already at risk for negative behavioral and socio-emotional outcomes, exposure to PTEs may be associated with concurrent and future child symptomatology above and beyond the effects of living in poverty (Briggs-Gowan et al., 2010a; Margolin et al., 2010).

Different categories of PTEs, such as interpersonal trauma, non-interpersonal trauma, and traumatic loss, may result in distinct emotional and behavioral responses (Briggs-Gowan et al., 2010b). Depending on the type of PTE exposure, preschool-age children

are likely to follow differential trajectories of psychopathology and resilience (Graham-Bermann et al., 2008; Briggs-Gowan et al., 2010a; Margolin et al., 2010). For example, PTEs that entail interpersonal violence – such as being the victim of physical assault, or witnessing domestic or community violence – are strongly predictive of depression, separation anxiety, PTSD, and conduct problems, and marginally predictive of ADHD symptoms in preschool-age children while non-interpersonal PTEs – such as experiencing a natural disaster or transportation accident – may be predictive of specific phobias only (Briggs-Gowan et al., 2010a). Related research suggests that interpersonal PTEs and PTEs involving family members are the most likely to be associated with PTSD symptomatology in young children (Luthra et al., 2009; Graham-Bermann et al., 2008). In a sample of middle-class, school-age children, exposure to domestic violence was associated with externalizing but not internalizing behavior problems while exposure to community violence was associated with internalizing problems, externalizing problems, and depressive symptoms (Malik, 2008). Given the high incidence of both community violence exposure and domestic violence exposure among preschoolers living in urban areas who face economic risk, similar research focused specifically on this population is necessary. While some researchers focus specifically on exposure to one type of PTE (for example, intimate partner violence), this study will contribute to the field by considering children's exposure to a wide range of PTEs.

Gender effects, particularly differential rates of exposure to PTEs and associated outcomes for boys and girls, are of interest to many preschool trauma researchers. However, Graham-Bermann et al. (2009) concluded that the findings to date, at least in regard to exposure to intimate partner violence, have been inconclusive. Similarly,

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Crusto et al. (2010) and Mitchell et al. (2009) found no difference in rates of PTE

exposure or posttraumatic stress between preschool-age boys and girls. On the other

hand, previous work also suggests that school-age boys may experience more

externalizing behaviors and girls more internalizing behaviors following severe trauma

exposure (Dulmus & Hilarski, 2006). Commonly, researchers explore gender effects of

exposure to PTEs without putting forth a formal hypothesis (e.g., Schwartz & Proctor,

2000) and a similar approach will be taken in the current study. In doing so, particularly

within a sample of low-income preschoolers, the present study will contribute to the

exploration of gender-based PTE differences.

Social Competence

While social skills are specific behaviors that are acquired and performed, social

competence is a broader construct that encompasses the environments, values, and

judgments – the context – in which social skills are enacted (Gresham et al., 2001). In

other words, social competence is not merely possessing social skills, but making good

decisions about when and how to apply them to specific situations, like at home and in

the classroom. Consistent with this definition, Lillivist et al. (2009) found that Swedish

preschool teachers identified intrapersonal skills, including self-esteem, empathy,

autonomy, participation/engagement, and problem-solving, and interpersonal

relationships, including interaction, popularity, peer-group leadership status, and

communication, as the main components of social competence. It is critical to assess

social competence in young children because of its persisting and predictive properties

(Eisenberg et al., 1997). In a recent study of economically disadvantaged Latino

preschoolers, social competence was strongly associated with future academic

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achievement (Oades-Sese et al., 2011); moreover, children who have positive social experiences in daycare and preschool are more likely than those who have had negative experiences to be less aggressive, to have more friends, and to be considered popular in the 3rd grade (NICHD, 2008). The benefits of early social competence extend into later childhood, adolescence, and even adulthood, and include desirable vocational outcomes, educational attainment, self-regulatory skills, and mental health (Caspi et al., 1998; Hebert-Myers et al., 2006; Obradović et al., 2010).

Given the long-term impact of social competence at an early age, it is important to understand how it might be related to early exposure to PTEs, particularly for children who already face a significant degree of economic risk. As discussed earlier, children's exposure to PTEs is associated with internalizing and externalizing symptomatology in ways that inhibit children's social development. Internalizing problems, like anxiety, might inhibit prosocial behavior and age-appropriate peer interactions; similarly, externalizing behavior problems like tantrums might negatively influence the way that children are regarded and included in play activities by peers. However, not all children who experience PTEs go on to develop behavior problems. Thus, emotional adjustment, including both internalizing and externalizing domains, will be explored as a potential moderator of the relationship between exposure to PTEs and social competence outcomes in young children.

It is important to note here that social competence is a strengths-based construct. Some research purports to study social competence while including weakness-based components within it, such as social problems, negative peer interactions, externalizing behavior, or social withdrawal (Katz et al., 2007; Diener & Kim, 2004). While social

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competence might involve the absence of some negative behaviors, the absence of such behaviors by itself does not constitute social competence. The proposed study will capture children's social behaviors on a continuum and assess social competence using strengths-based measures.

Emotional Adjustment

It is widely believed that exposure to PTEs may result directly in negative emotional and behavioral outcomes among children of all ages. While this effect may be especially significant for very young children who face economic risk, some studies (e.g., Katz et al., 2007) test only future emotional adjustment and not emotional adjustment concurrent with the PTE exposure. In the current study, emotional adjustment will be studied for a possible direct relationship with exposure to PTEs, as well as for a potential moderating effect on the relationship between exposure to PTEs and social competence. Emotional adjustment, including emotional expressiveness, emotion knowledge, and emotion regulation, has been studied widely as a predictor of concurrent and future social competence in preschool-age children (Denham, 2003). A hallmark study by Eisenberg et al. (1997) revealed that high levels of emotional regulation, paired with low levels of non-constructive coping, negative emotionality, and emotional intensity, were associated with concurrent and future social competence. While this relationship has been widely studied in normative samples, it is understudied among preschoolers who face economic risk and PTE exposure.

Traditionally, researchers have tested components of emotional adjustment, including emotional regulation and emotional awareness, as mediators – not moderators – of the relationship between exposure to types of PTEs and social competence (Katz et al., 2007;

Schwartz & Proctor, 2000). These researchers are guided by the well-researched understanding that exposure to PTEs may pose a threat to children's emotional adjustment and result in internalizing and externalizing behavior problems (Shahinfar et al., 2000). In turn, the behavior problems associated with poor emotional adjustment (Howell et al., 2010) may lead to difficulty approaching peers, gaining peer acceptance, and interacting with peers in an age-appropriate manner. However, the relationship between exposure to PTEs and emotional and behavioral dysregulation is not deterministic: resilience studies have suggested that some children who are exposed to PTEs and other risk factors, like poverty, demonstrate positive emotional adjustment and social competence, in spite of the exposure (Masten & Coatsworth, 1998; Kim-Cohen et al., 2004; Howell et al., 2010; Scheeringa & Zeanah, 2001). In a recent study by Howell et al. (2010), prosocial skills and emotional regulation were studied together as "resilience" in young children who had been exposed to intimate partner violence; factors such as strong parenting skills were found to promote resilience. The results of this study demonstrate that young children might be exposed to PTEs and contextual risk factors and yet demonstrate age-appropriate emotional adjustment. In light of these findings, emotional adjustment will be tested as a moderator of the relationship between exposure to PTEs and social competence in the current study.

Parent Affective Symptoms as a Moderator of Exposure to PTEs and Emotional Adjustment

Previous research has demonstrated the importance of considering parent-level factors when assessing the relationship between preschoolers' exposure to PTEs and subsequent child emotional adjustment. In fact, parent affective symptoms may have a

greater impact than characteristics of the PTE itself on child outcomes following exposure among very young children (Schecter & Wilheim, 2009). Hussey et al. (2006) point out that children typically learn basic trust and social reciprocity from their caregivers, which they apply to all future relationships. However, exposure to PTEs at a very early age can threaten their capacity to develop social reciprocity, which can lead to maladaptive attempts to control relationships and environments (Hussey et al., 2006). Scheeringa and Zeanah (2001) found support for several models that explain the role of parental factors in the relationship between child exposure to PTEs and child emotional adjustment. In the "minimal" model, preschool-age children are directly exposed to PTEs but do not experience any subsequent maladaptive adjustment; they are resilient. In the "vicarious traumatization" model, the parent is exposed to a PTE that the child is not. However, this exposure negatively impacts the parent's behaviors toward his or her child, and in turn, the child displays some of the same outcomes, as though he or she had been exposed to the PTE himself or herself. In the "moderating" model, which is of particular interest to the current study, the quality of the parent-child relationship moderates the child's exposure to PTEs and his or her subsequent adjustment. Additionally, Scheeringa and Zeanah suggest the "compound" model, which combines the vicarious traumatization and moderating models. In the current study, parent affective symptoms – an established predictor of parent-child relationship quality – will be tested as a moderator of the relationship between child exposure to PTEs and emotional adjustment.

In addition to testing the above models, Scheeringa and Zeanah (2001) were also concerned with how both parent and child PTSD symptomatology might affect the parent-child relationship. They put forth three patterns: the

withdrawn/unresponsive/unavailable pattern, in which parent PTSD interferes with their parenting behaviors; the overprotective/constricting pattern, in which a child's exposure to PTE(s) traumatizes the parent and in turn, the parent takes drastic and irrational measures to protect the child from any other harm; and the reenacting/endangering/frightening pattern, in which the child is exposed to PTE(s), the parent becomes traumatized and in turn, engages in problematic behaviors (e.g., asking intrusive questions) that retraumatize the child. These arguments would suggest, then, that children's emotional response to traumatic events may be particularly elevated when their parents are also experiencing psychological distress; alternatively, children whose parents are emotionally healthy may be better able to cope with PTE exposure in a way that does not result in emotional maladjustment. When providing support to families in which a child has been exposed to PTEs, contemporary research emphasizes that the first line of action should be to address parental PTSD symptoms, if they are present (Lieberman et al., 2005; Scheeringa & Zeanah, 2001). This is critical because the parent-child relationship is a primary agent of change for preschool-age children, parents are more likely to respond to their children in a sensitive manner once their symptoms have been addressed, and the parent-child relationship is central to how young children perceive and process their own exposure to PTEs.

Significant research has explored parents' well-being as both a mediator and a moderator of the relationship between child exposure to PTEs and emotional adjustment. Briggs-Gowan et al. (2010a) found support for parent affective symptoms as a mediator: parental depressive and anxiety symptoms mediated the relationship between child exposure to violent PTEs and both child depression and conduct problems. Other studies

explore the potential moderating effect of parent affective symptoms. For example, Goldfinch (2009) articulates how compromised parental well-being may moderate the relationship between child exposure to PTEs and emotional adjustment: "If a parent is unable to tolerate negative emotion, and becomes distressed by this the child cannot practice labeling and managing disappointment, frustration or anger… a child who cannot express negative emotions has no opportunity to practice resolution of the conflict, sadness or disappointment. This will lead to less skill in emotion management, and less effective social skills." Furthermore, Howell et al. (2010) found that parenting practices and maternal mental health, including depressive and PTSD symptoms, moderated young children's prosocial skills and emotional regulation following exposure to intimate partner violence. In the current study, parent affective symptoms, including symptoms of depression, anxiety, and PTSD, will be tested as a moderator of the relationship between children's exposure to PTEs and their emotional adjustment. Parent affective symptoms will be tested this way due to their effect on the parent-child relationship and the critical function of this relationship in light of child exposure to PTEs (Lieberman et al., 2005).

Specific Aims and Conceptual Models

1. To determine how child exposure to potentially traumatic events is related to child

    emotional adjustment and child social competence.
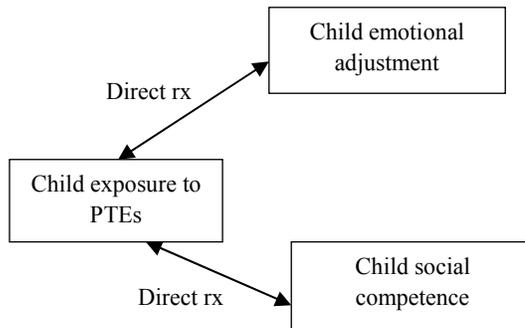
Figure 1. Child Exposure to PTEs Will Be Tested for Main Effects on Child Emotional
Adjustment and Child Social Competence.

2. To determine whether parent affective symptoms, particularly depressive, anxiety,

    and PTSD symptomatology, moderates the relationship between child exposure to

    PTEs and child emotional adjustment.
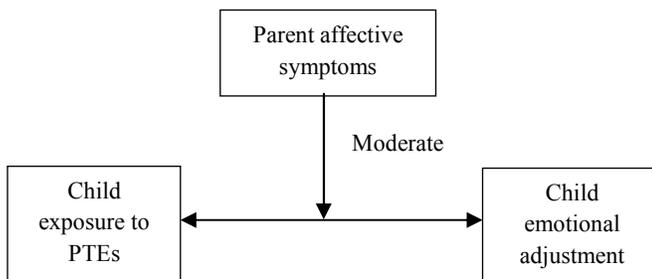
Figure 2. Parent Affective Symptoms Will Be Tested as a Moderator of the Relationship
Between Child Exposure to PTEs and Child Emotional Adjustment.

3. To determine whether emotional adjustment moderates the relationship between child exposure to PTEs and child social competence.
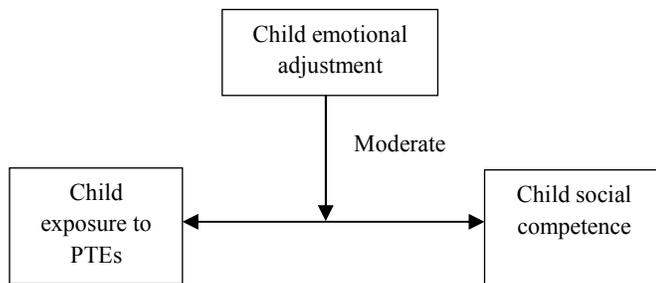
Figure 3. Child Emotional Adjustment Will Be Tested as a Moderator of the Relationship Between Child Exposure to PTEs and Child Social Competence.

4. On an exploratory basis, to test potential gender differences in the relationship between exposure to PTEs and emotional adjustment, and between exposure to PTEs and social competence.
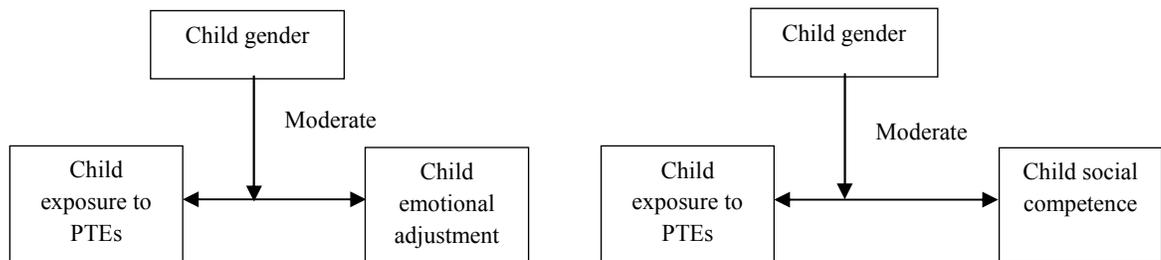
Figure 4. On an Exploratory Basis, Child Gender Will Be Tested as a Moderator of the Relationship Between Child Exposure to PTEs, and Child Emotional Adjustment and Child Social Competence.

CHAPTER 2

RESEARCH DESIGN AND METHODS

Participants

Participants were 63 parents and their preschool-aged children who were retained for

a second visit as part of the larger School Transitions Study (Abbey Eisenhower,

Principle Investigator), a study of the transition to preschool and kindergarten among

economically disadvantaged families. There was an attrition rate of 19% between the

first and second time points (n=15). Inclusion criteria included having a child between

the ages of 3 and 5 at the time of enrollment who was entering preschool or kindergarten

in the fall, and living at or below 185% of the federal poverty level. The majority of

participants were recruited in person at Boston-area WIC clinics; other participants

contacted the study office after seeing flyers at WIC offices, or were referred by friends

or family.

Child participants were, on average, 4 years and 10 months old (range: 41-83 months,

SD = 9.38 months) and 55.6% were female. In response to an open-ended question about

racial identity, which was then coded by the author, children were identified by their

parents as the following: 39.7% Black, 38.1% Latino, 11.1% White, 11.1% multiracial.

A vast majority of child participants were born in the mainland United States (93.7%);

those born abroad emigrated from the Dominican Republic (3.2%), Portugal (1.6%), and

Puerto Rico (1.6%). Additionally, 93.7% of the child participants completed their

assessments in English; the others completed theirs in Spanish, based on parent report of children's dominant language. A majority of children had some school experience: 82.5% had attended at least one year of school or preschool since the age of 3. Among these children, the majority had most recently attended a Head Start program (42.3% of school-attending sample) or a public elementary school's preschool program (38.5% of school-attending sample). Children had, on average, 1.70 years of school experience (SD = 1.10). Prior to attending school, a considerable percent of the child participants (31.7%) had received early intervention services, primarily for speech and language development. At the time of assessment, 6.3% of the children were receiving special education services.

Caregivers were 96.8% biological mothers, plus two kinship legal guardians. They were, on average, 30.8 years old (range: 20-63 years, SD = 8.48 years). A majority (57.1%) immigrated to the mainland United States from countries including the Dominican Republic (n = 18), Cape Verdean Islands (n = 5), France (n = 1), Guatemala (n = 1), Haiti (n = 1), Honduras (n = 1), Portugal (n = 1), and Ukraine (n = 1). Sixty-three percent of caregivers identified a language other than English as their native language(s), including Spanish (34.9%), both English and Spanish (6.3%), Cape Verdean Creole (7.9%), Haitian Creole (3.2%), Portuguese Creole (3.2%), Portuguese (3.2%), and Ukrainian (1.6%). As they did for the child participants, caregivers responded to an open-ended question about race, which was then coded by the author, and self-identified as the following: 42.9% Latino, 38.1% Black, 15.9% White, and 3.2% multiracial. A majority of parent participants (55.6%) were raising their children in single-parent households.

Families faced significant economic risk: two-thirds reported an annual income at or below $25,000, with 39.7% earning at or below $15,000 per year, with an average household size of 3.75 individuals depending on this income. Half of parents (49.2%) were employed in a paid job, and 41.9% of those were working full- time. A vast majority of parents (82.5%) had at least a high school diploma; 36.9% had attended college.

All parents of the 71.2% of school-attending children in the sample gave permission to contact their children's teachers. In total, 37 teachers participated in the current study, reporting on 71.2% of school-attending children. On average, teachers reported 12.24 years of teaching experience (SD = 8.12, range 3-40). The majority of teachers had a master's degree (54.1%, n = 20). Thirty-two teachers were female (86.5%), 2 were male (5.8%), and 3 did not report their sex. Teachers responded to the same open-ended question about race as did the parents, and their responses were coded by the author as the following: White (62.2%), Latino (16.2%), and Black (10.8%); 4 did not provide their race.

Procedures

Participants were enrolled in the School Transitions Study in two cohorts. Families completed an initial assessment visit at UMass Boston in the summer prior to beginning the preschool or kindergarten school year; they returned for a second assessment visit approximately 6 months into the school year. Data were collected by one clinical psychologist, graduate students in clinical and counseling psychology, and a team of trained undergraduate research assistants.

Data for the current study were drawn from the second family visit, which lasted three hours and included parent interview and questionnaires, structured child assessment, and parent-child interaction tasks. Teacher data were collected via mailed questionnaire packets shortly after the visit. Families received $95 and a developmental report for completing the visit and teachers received $25 for submitted packets.

Assessments

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). The TESI-PRR is designed for assessing the potentially traumatic experiences of children ages 0 to 6 years. The TESI-PRR is a revision of the original TESI-PR, which has adequate test–retest reliability with kappas ranging from 0.50 to 0.79 (Ford et al. 2000). For the current study, a checklist was derived from a semi-structured interview script; parents responded yes or no to indicate whether their children had experienced 24 different types of PTEs over the course of their lifetime and during the previous year (e.g., "Has your child ever experienced the death of someone close to him/her?" and, "Has your child ever seen someone use a weapon to threaten or hurt a family member?") The discrepancy between the total number of items (30) and the number of unique PTEs assessed by the TESI-PRR (24) exists because for some events, witnessing is assessed separately from experiencing personally (e.g., in the case of a serious accident). While there currently are no psychometric data available for the TESI-PRR, it was used in recent studies to assess the experiences of urban preschoolers facing economic risk and of youth exposed to intimate partner violence, including preschool-age children (Crusto et

al., 2010; Lang & Stover, 2008). Three types of PTE exposure were explored in the current study: total lifetime exposure (including all 30 items, interpersonal event exposure (subset of 22 items), and interpersonal violence exposure (subset of 14 items). The TESI-PRR alpha level for the current sample was 0.86.

Child Emotional Adjustment

The Child Behavior Checklist 1.5-5 (CBCL; Achenbach & Rescorla, 2000) was used to assess emotional adjustment. The CBCL is a parent-report measure that is widely used in research and clinical settings. It contains 99 items, indicating child problems and listed in alphabetical order (from "aches and pains without medical cause" to "worries"). For each item, the child's parent indicated whether it was not true (0), somewhat or sometimes true (1), or very true or often true (2), now or within the past two months. In addition to the parent report, teachers completed the Caregiver-Teacher Report Form (CTRF; Achenbach & Rescorla, 2000) which is the 99-item companion measure to the parent-report CBCL. Both the CBCL and CTRF produce three broadband scale scores and seven narrowband scale scores. Since the aim of the current study is to assess children's overall emotional adjustment as opposed to patterns of symptomatology, only the Total Problems broadband score of the CBCL and CTRF will be used in analyses. The CBCL total score is highly correlated with other measures of behavior problems (Achenbach & Rescorla, 2000) and had an internal reliability of 0.94 in the current sample. The internal reliability of the CTRF total score was similarly high in the current sample, at 0.98.

In addition to the CBCL, the Dysregulation Coding System will be used to assess children's emotional adjustment. This coding system was developed to assess children's

ability/inability to regulate emotions and behaviors in relation to contextual demands. Previously implemented by Hoffman et al. (2006), the Dysregulation Coding System has shown high overall inter-rater reliability (r = .90) and is similarly high in the current study (r = 0.86). A coding team consisting of one graduate student and one undergraduate research assistant watched videotaped parent-child tasks and rate children's emotional regulation and behavioral dysregulation on a scale from 0 (demonstrating very high self-regulatory skills) to 4 (demonstrating very low self-regulatory skills). The Dysregulation Coding System was applied to observational data collected from three parent-child tasks: the emotional discourse task (Fenning et al., 2011), the shared literacy task (Frosch, Cox, & Goldman, 2001), and the previously unpublished marble run task. For the 3-minute emotional discourse task, caregivers were prompted to think of a recent, specific time that the child felt upset and then the dyad had a discussion about that instance. For the 8-minute shared literacy task, dyads read a series of text-less storybooks by Mercer Meyer; for coding purposes, this data was separated into two 4-minute segments. For the 5-minute marble run task, children were instructed to replicate an age-appropriate marble run tower using multicolored building pieces; parents were told that they could give their child whatever help they thought he or she needed. The overall Dysregulation score presented in the analyses below is the average of the children's emotional and behavioral dysregulation scores across the four coded segments.

Parent Affective Symptoms

In the current study, parents' well-being is operationalized as depressive symptoms, anxiety symptoms, and PTSD symptoms. The self-report, 20-item Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977) was used to assess parents' depressive symptoms, including mood, somatic complaints, and cognitions. Participants responded to a list of statements (i.e., "I was bothered by things that usually do not bother me,") and to indicate on a scale from 1 (rarely/none of the time) to 4 (most/all of the time) how often they experience each one. The CES-D is designed for use with the general population, correlates highly with other measures of depression, has very high internal consistency, and had an alpha reliability of 0.85 in a sample of low-income parents of very young children (Gross et al., 2003). The alpha reliability of the CES-D in the current sample was 0.79. The current study relies on the total depressive symptoms score.

The self-report, 21-item Beck Anxiety Inventory (BAI; Beck, Epstein, Brown & Steer, 1988) was used to assess parents' anxiety symptoms. In the BAI, symptoms are listed individually (e.g., "wobbliness in legs") and parents reported on a scale from 0 ("not at all") to 3 ("severely") how often they experience each one. A recent study with white and Latino nonclinical samples indicated good internal consistency, with all alphas above 0.88; in clinical samples, internal consistency has been reported as high as 0.92, with test-retest reliability of .75 over one week intervals (Contreras et al., 2004; Beck et al., 1998). The test also has good discriminant validity in differentiating individuals with anxiety disorders from those without. The present study utilizes the BAI total anxiety symptoms score. The BAI alpha level for the current sample was 0.77.

An adapted version of the self-report, 4-item Primary Care PTSD Screen (Prins, Ouimette, Kimerling et al., 2003) was used to assess parents' PTSD symptoms. The original measure is widely used in primary care and other medical settings and has better discriminant validity than more general screening tools (Ouimette et al., 2008). Likewise, a recent study of civilian adults revealed that the Primary Care PTSD Screen has adequate sensitivity and specificity (>80%) and compares favorably to other available PTSD screens (Freedy et al., 2010). The measure includes an introductory sentence to cue respondents to traumatic events: "In your life, have you ever had any experience that was frightening, horrible, or upsetting that, in the past month, you…" It does not contain a full inventory of PTEs; instead, participants responded to items about their subsequent feelings and behaviors (e.g., "…have had nightmares about it or thought about it when you did not want to?") In the original measure, respondents must respond to each question simply with "yes" or "no". However, in the current screen, respondents chose from four options, ranging from "not at all/only one time" to "5 or more times per week/almost always". This revised format was adopted to increase variability among parents' responses. In the current study, we use the total PTSD score, calculated as the sum of all items. The alpha level for this measure in the current sample was 0.62.

Child Social Competence

Children's social skills – a component of social competence – were assessed using the parent form of the Social Skills Rating System (SSRS; Gresham & Elliott, 1990). The SSRS is a 38-item measure that asks parents to rate the frequency of behaviorally specified social skills on a 3-point rating scale: 0 (not true of the child), 1 (sometimes true), and 2 (often true). The SSRS yields scores that can be converted to standard scores

(M = 100; SD = 15). The measure contains four subscales – Cooperation, Assertion, Responsibility, and Self-control – but children's total scores are of primary interest in the current study. Additionally, participating teachers completed the teacher form of the SSRS, which has identical scoring and similar items as the parent form but without the Responsibility subscale. We will use the total scores of each assessment, which had high internal consistency ($\alpha = 0.87$ for parents, $\alpha = 0.88$ for teachers) as well as good discriminate validity in the validation sample (Gresham et al., 1987; Gresham et al., 2011). In the current sample, the alpha level for the parent-report SSRS was 0.91 and the alpha level for the teacher report was 0.93.

Social competence was also assessed using the child-report Berkeley Puppet Interview (BPI; Ablow & Measelle, 1995), a semi-structured interview assessing young children's perceptions of the family environment, social skills and behaviors, and other domains. Given the focus of the current study, only the social subscales (Peer Acceptance & Rejection; Bullying by Peers) will be included in analyses. During the BPI administration, children are interviewed with two identical dog hand puppets named "Iggy" and "Ziggy." Throughout the interview, puppets offer opposing statements about themselves and then ask the child, "How about you?" For example, one puppet says, "Kids at school are nice to me," and the second puppet says, "Kids at school are not nice to me. How about you?" Children are not required to choose a puppet or to say which puppet they are most like; rather, children can respond however is most natural to them, be it verbally or nonverbally. The two statements presented are designed to reflect the positive and negative ends of different behaviors and attributes. Based on the degree to which children's responses parallel one of the puppet's statements, responses are coded

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on a 7-point scale, where very positive perceptions (e.g., "Kids are really nice to me") are coded on one endpoint of the scale ('7') and very negative perceptions (e.g., "Kids are really mean to me") are coded on the other end-point ('1'). In the current study, all interviews were videotaped and later coded twice by a graduate student and/or a research assistant. Average inter-rater agreement across all items has been reported at .84 (Spearman r, range = .70 - 1.0; Measelle et al., in press) and was 0.99 for the current study (for wave 1 participants; it was 0.97 for wave 2 participants). Children's perceived acceptance by peers, as reported in the BPI, has been associated with teacher and mother ratings of peer acceptance (Measelle 1998).

Sociodemographics

The Family & Child Background Information Survey was prepared specifically for this study; caregivers reported on family socioeconomic, racial, ethnic, and cultural factors (e.g., parental and child language preferences, immigration history, parental education, employment, family income, racial and ethnic identities); family composition (e.g., number and age of siblings, others living in the home); and the child's school history (e.g., type of school, hours per week attending school, special education services).

Data Procedures

In the current study, missing data is reconciled with multiple imputation (MI). MI is a statistical technique that approximates missing data values based on available variables in the data set. For MI, multiple data sets with complete data (accounting for the previously missing data) are generated, analyses are performed within each one, and the pooled results are reported. For this study, SPSS 19.0 was used to perform MI on the scaled-score level, in cases where participants completed fewer than 70% of the scale

items. It is important to note a drawback of using SPSS 19.0 in the current study: standardized betas are not produced or reported. A breakdown of imputed data is as follows: 1.6% of parent SSRS scores, 34.9% of teacher SSRS scores, 33.3% of teacher CTRF Internalizing, Externalizing, and Total scores, 30.2% of BPI Peer Acceptance and Rejection scores, 31.7% of BPI Bullied scores, 1.6% of Marble Run emotional/behavioral dysregulation scores, 14.3% of Emotion Discourse emotional/behavioral dysregulation scores, 14.3% of Shared Literacy emotional/behavioral dysregulation scores, and 14.3% of across-activity emotional/behavioral dysregulation scores. Data were not imputed for TESI-PRR, CBCL, CES-D, BAI, or PTSD Screen scores, as all parents (n = 63) completed at least 70% of items on each of these measures. In cases where teacher data was missing, CTRF and SSRS scale scores were imputed, but only for children who had been enrolled in kindergarten, preschool, or daycare. Teacher data was not imputed for children who had no previous school experience or a caretaker outside the home.

Analyses were performed to compare participants for whom data were completed and for whom data were missing and therefore imputed. Children for whom Dysregulation data were imputed were significantly younger than children who had complete data [$t(61)$ = 2.02, $p < 0.05$]. Similarly, children who had missing BPI Peer Acceptance and Rejection data were significantly younger [$t(61)$ = 4.04, $p < 0.001$] than children who had complete data; they also had significantly younger parents [$t(60)$ = 2.33, $p < 0.05$], fewer years of school experience, and were more likely to complete their assessment in Spanish [$\chi^2(1, N = 63)$ = 4.08, $p < 0.05$].

Keeping in mind that linear regression carries four assumptions (linearity of the relationship between the independent and dependent variables, independence of the

errors, homoscedasticity of the errors, and normality of the error distribution,) it was

necessary to ensure that these assumptions were met. While tests of the original data met

the first two assumptions, they did not consistently meet the second two, partly due to the

considerable percentage of children who had no previous exposure to PTEs (thus, a score

of zero on the TESI) and the small range of Dysregulation scores. Therefore, inverse

transformations were applied to TESI scores and log transformations were applied to

Dysregulation and Parent Affective Symptoms scores. With these corrections, the data

largely met the assumptions of linear regression. The few instances in which these

assumptions were violated are indicated in the text with footnotes.

CHAPTER 3

RESULTS

Rates of Exposure to Potentially Traumatic Events (PTEs)

The majority of child participants (71.4%) had been exposed to at least one

potentially traumatic event (PTE). On average, children were exposed to 2.17 (range: 0-

13, SD = 2.38) events out of the 30 included in the TESI-PRR. As shown in Table 1, the

most frequently endorsed events were: death of someone close (22.2%), seeing/hearing

people outside the home fighting (22.2%), separation from a caregiver under stressful

circumstances (20.5%), serious medical procedure/life-threatening condition (19.0%),

and seeing/hearing family members fighting (17.5%). Interpersonal events were most

common, with 64.6% of the entire sample experiencing at least one lifetime interpersonal

event, including traumatic loss (44.4%; e.g., death of a close friend/family member) and

interpersonal violence (36.5%; e.g., seeing/hearing family members fighting). The

majority of children (61.9%) had directly *experienced* at least one event; just under half

(46.7%) had *witnessed* an event. Non-interpersonal events (e.g., natural disaster,

transportation accident) were relatively less common, with 34.9% of children

experiencing at least one. Being kidnapped, direct exposure to war or terrorism, sexual

abuse/assault, and witnessing sexual abuse/assault were not endorsed by any parent.

With respect to sociodemographic characteristics, girls were significantly more

likely than boys to have been exposed to lifetime PTEs [$r(63) = -0.25$, $p < 0.05$].

Although child age was not associated with PTE exposure, parental age was positively correlated with overall PTE exposure [$r(63) = 0.40$, $p < 0.001$], exposure to interpersonal events [$r(63) = 0.34$, $p < 0.01$], and interpersonal violence events [$r(63) = 0.28$, $p < 0.05$]. These relations held true even when child age was covaried, to account for the possibility that older parents may have older children. With regard to parent immigration status, children of native-born parents were more likely to be exposed to interpersonal events [$r(63) = -0.26$, $p < 0.05$] and interpersonal violence [$r(63) = -0.26$, $p < 0.05$]. Children living in single-parent households were more likely than children living in two-parent households to be exposed to overall lifetime PTEs [$r(63) = -0.33$, $p < 0.01$], interpersonal events [$r(63) = -0.28$, $p < 0.05$], and interpersonal violence events [$r(63) = -0.28$, $p < 0.05$]. Exposure to PTEs was not associated with child age, parent employment status, or household income.

Table 1

Rates of Child Exposure to Potentially Traumatic Events (PTEs) by Category.

Event	Prevalence (%)
Interpersonal – Violence	**36.5**
Seen or heard people outside family fighting/community violence exposure	22.2
Seen or heard family members fighting	17.5
Seen someone hit, push, or kick a family member	11.1
Repeatedly yelled at or threatened	6.3
Physical assault	4.8
Seen or heard family members threaten to seriously harm each other	4.8

Direct threat of serious physical harm	3.2
Been mugged/present while a family member was mugged	3.2
Period of lacking appropriate care/basic necessities	1.6
Attack with a weapon	1.6
Kidnapping of close friend/family member	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
Interpersonal – Other	**27.0**
Death of close friend/family member	22.2
Separation from parent/caregiver for more than a few days/under very stressful circumstances	20.6
See a family member taken away/imprisonment	9.5
Severe illness or injury of close friend/family member	12.7
Attempted suicide/self-harm of close friend/family member	6.3
Direct exposure to war	0
Seen or heard actual acts of war or terrorism on TV or radio	7.9
Other Events	**40.0**
Serious medical procedure/life threatening illness/overnight hospital stay	19.0
Seen a serious accident where someone could have been/was severely injured or died	9.5
Serious accident where someone could have been/was severely	6.3

injured or died

Attack by dog or other animal	6.3
Natural disaster (e.g. tornado, fire, hurricane)	1.6
Stressful event related to immigration	1.6
Other stressful experience	11.1

Relations Among Variables of Interest

To measure the relations among measures of emotional adjustment, correlations between parent-reported CBCL Total Problems, teacher-reported CTRF Total Problems, and Dysregulation were computed. The only statistically significant correlation was found between CBCL Total Problems and Dysregulation [$r(63) = 0.31$, $p < 0.05$]; based on the limited correlations observed, the emotional adjustment variables were not aggregated into a composite variable; CBCL Total Problems, CTRF Total Problems, and Dysregulation were each examined in separate emotional adjustment models.. See Table 2 for means and standard deviations and Table 3 for correlations among these variables.

To measure relations among measures of social competence, correlations between the parent SSRS, teacher SSRS, and the Peer Acceptance and Rejection BPI subscale were run (Table 4). A significant correlation was found between parent SSRS and teacher SSRS [$r(63) = 0.27$, $p < 0.05$] but neither was correlated with BPI Peer Acceptance and Rejection scores; thus, these three scores were examined separately. The BPI Peer Acceptance and Rejection subscale was not significantly correlated with the BPI Bullied subscale, so the BPI Bullied subscale was omitted from subsequent analyses

Table 2

Descriptive Statistics of Emotional Adjustment, Social Competence, and Parent Affective Symptoms Variables.

	N[1]	Range	M	SD	Median	% Borderline/Clinical
CBCL Total	63	30-76	46.17	10.50	44	3.20/7.90
CTRF Total	37	29-69	47.58	9.73	44	11.1/11.1
Dysregulation	54	0-2.75	1.03	0.80	0.81	—
SSRS Parent	62	54-131	95.13	18.67	95	—
SSRS Teacher	36	69-131	99.44	15.22	101	—
BPI Peer Acceptance & Rejection	44	20-36	29.54	5.09	30.60	—
CES-D	63	1-37	10.60	7.49	8	— /19.50
BAI	63	0-17.85	4.06	4.44	2	— /12.30
Primary Care PTSD Screen	63	0-6	0.70	1.38	0	—

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[1] Although all missing data were imputed on the total score level, these descriptive statistics reflect the original sample.

Table 3

Correlation Coefficients for the Three Measures of Child Emotional Adjustment.

	CBCL Total	CTRF Total	Dysregulation
CBCL Total	—	-0.12	0.31*
CTRF Total		—	0.09
Dysregulation			—

*Correlation significant at the .05 level (2-tailed).

Table 4

Correlation Coefficients for the Three Measures of Child Social Competence.

	Parent SSRS	Teacher SSRS	BPI Peer Acceptance & Rejection
Parent SSRS	—	0.27*	-0.03
Teacher SSRS		—	-0.12
BPI Peer Acceptance & Rejection			—

*Correlation significant at the .05 level (2-tailed).

Table 5

Correlation Coefficients for the Three Measures of Parent Affective Symptoms.

	CES-D	BAI	Primary Care PTSD Screen
CES-D	—	0.55**	0.34**†
BAI		—	0.18
Primary Care PTSD Screen			—

**Correlation significant at the .01 level (2-tailed).
† Correlation is no longer statistically significant when outliers are removed.

A number of demographic variables were tested as potential covariates for inclusion

in regression models examining the associations between exposure to PTEs and

emotional adjustment; exposure to PTEs and social competence; parent affective

symptoms and emotional adjustment; and emotional adjustment and social competence..

These variables included child sex, child age, parent age, parent immigration status,

parent employment status (full-time, part-time, or not working), parent education level,

single parenthood status, and income. Bivariate correlations revealed that having a parent

who immigrated to the United States was associated with lower PTE exposure

(interpersonal events [$r(63) = -0.26$, $p < 0.05$] and interpersonal violent events [$r(63) = -

0.26$, $p < 0.05$] only) and greater social competence (teacher SSRS only, $r(63) = 0.35$, $p <

0.01$). Single parenthood status was associated with greater PTE exposure (overall events

[$r(63) = -0.33$, $p < 0.01$], interpersonal events [$r(63) = -0.28$, $p < 0.05$], and interpersonal

violence events [$r(63) = -0.28$, $p < 0.05$]) and decreased emotional adjustment (CBCL

Total only, $r(63) = -0.32$, $p < 0.05$). Covariates were included in the regression models

only if they were significantly correlated with both the independent variable and the dependent variable. Therefore, immigration status (for Specific Aims 1 and 4) and single parent status (for Specific Aims 3 and 4) were entered as covariates where relevant.

Tests of Specific Aim 1: PTE Exposure, Emotional Adjustment, and Social Competence

A series of linear regressions were performed to determine whether children's lifetime exposure to potentially traumatic events (PTEs) was associated with their emotional adjustment and social competence. For each regression, the emotional or social outcome variable was entered as the dependent variable. Covariates (when applicable) were entered in the first step, and the independent variable (exposure to PTEs) was entered in the second step to test the primary hypothesis of this study, that trauma exposure would be associated with social-emotional adaptation.

Exposure to interpersonal violence PTEs approached significance as a predictor of CBCL Total Scores [$B = -7.08$, $t(60) = -1.66$, $p = 0.10$] and explained a significant amount of variance in this measure [$R^2 = 0.14$, $F(2, 60) = 4.85$, $p = 0.01$]. However, CBCL Total scores were not associated with lifetime exposure to PTEs [$B = -4.66$, $t(60) = -1.15$, $p > 0.10$] or for exposure to interpersonal PTEs [$B = -1.41$, $t(60) = -0.34$, $p > 0.10$]. Exposure to PTEs, including interpersonal events, interpersonal violence events, and total lifetime events, did not account for significant variance in the other measures of emotional adjustment, nor in the measures of social competence (see Tables 6-15).

Table 6

Summary of Linear Regression Analysis for Total PTE Exposure Predicting Parent-Reported Total Problems T Score on the CBCL.

Variable	B	SE B
Step 1		
Single Parent Status	-6.61**	2.55
Step 2		
Single Parent Status	-5.60*	4.05
Total Exposure to PTEs	-4.66	4.05

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.10$ for Step 1; $\Delta R^2 = 0.02$ for Step 2.

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, $^{\dagger}p \leq 0.10$

Table 7

Summary of Linear Regression Analysis for Interpersonal PTE Exposure Predicting Parent-Reported Total Problems T Score on the CBCL.

Variable	B	SE B
Step 1		
Single Parent Status	-6.61**	2.55
Step 2		
Single Parent Status	-6.30*	2.72
Exposure to Interpersonal PTEs	-4.66	4.05

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.10$ for Step 1; $\Delta R^2 = 0.00$ for Step 2.

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, [a]$p \leq 0.10$

Table 8

Summary of Linear Regression Analysis for Interpersonal Violence PTE Exposure Predicting Parent-Reported Total Problems T Score on the CBCL.

Variable	B	SE B
Step 1		
Single Parent Status	-6.61**	2.55
Step 2		
Single Parent Status	-5.17*	2.66
Exposure to Interpersonal Violence PTEs	-7.08†	4.27

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.10$ for Step 1; $\Delta R^2 = 0.04$ for Step 2.

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, $^\dagger p \leq 0.10$

Table 9

Summary of Linear Regression Analysis for Total PTE Exposure Predicting Teacher-Reported Total Problems T Score on the CTRF.

Variable	B	$SE\ B$
Step 1a		
Total Exposure to PTEs	-5.04	3.64
Step 1b		
Interpersonal PTEs	-2.24	3.77
Step 1c		
Interpersonal Violence PTEs	-3.41	4.00

Note. Letters denote separate regression analyses. The results are presented together here to conserve space.

Note. R^2 values were averaged across the five imputed data sets. They are the following: $R^2 = 0.03$ for Step 1a; $R^2 = 0.01$ for Step 1b; $R^2 = 0.01$ for Step 1c.

Table 10

Summary of Linear Regression Analysis for PTE Exposure Predicting Dysregulation.

Variable	B	$SE\ B$
Step 1a		
Total Exposure to PTEs	-0.06	0.16
Step 1b		
Interpersonal PTEs	0.04	0.16
Step 1c		
Interpersonal Violence PTEs	-0.10	0.17

Note. Letters denote separate regression analyses. The results are presented together here to conserve space.

Note. R^2 values were averaged across the five imputed data sets. They are the following: $R^2 = 0.00$ for Step 1a; $R^2 = 0.00$ for Step 1b; $R^2 = 0.01$ for Step 1c.

Table 11

Summary of Linear Regression Analysis for PTE Exposure Predicting Parent-Reported Social Skills Standard Score on the SSRS.

Variable	B	SE B
Step 1a		
Total Exposure to PTEs	-6.64	7.08
Step 1b		
Interpersonal PTEs	-7.23	7.11
Step 1c		
Interpersonal Violence PTEs	5.59	7.59

Note. Letters denote separate regression analyses. The results are presented together here to conserve space.

Note. R^2 values were averaged across the five imputed data sets. They are the following: $R^2 = 0.01$ for Step 1a; $R^2 = 0.02$ for Step 1b; $R^2 = 0.01$ for Step 1c.

Table 12

Summary of Linear Regression Analysis for Total PTE Exposure Predicting Teacher-Reported Social Skills Standard Score on the SSRS.

Variable	*B*	*SE B*
Step 1		
Total Exposure to PTEs	1.75	4.78

Note. R^2 values were averaged across the five imputed data sets. $R^2 = 0.00$ for Step 1.

Table 13

Summary of Linear Regression Analysis for Interpersonal PTE Exposure Predicting Teacher-Reported Social Skills Standard Score on the SSRS.

Variable	*B*	*SE B*
Step 1		
Parent Immigration Status	8.15**	2.92
Step 2		
Parent Immigration Status	8.79**	2.98
Interpersonal PTEs	-4.88	4.55

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.12$ for Step 1; $\Delta R^2 = 0.02$ for Step 2.

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, $^{\dagger}p \leq 0.10$

Table 14

Summary of Linear Regression Analysis for Interpersonal Violence PTE Exposure Predicting Teacher-Reported Social Skills Standard Score on the SSRS.

Variable	B	$SE\ B$
Step 1		
Parent Immigration Status	8.15**	2.92
Step 2		
Parent Immigration Status	8.41**	3.04
Interpersonal Violence PTEs	-4.88	4.55

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.12$ for Step 1; $\Delta R^2 = 0.01$ for Step 2.

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, $^{\dagger}p \leq 0.10$

Table 15

Summary of Linear Regression Analysis for PTE Exposure Predicting Child-Reported Social Adjustment Raw Score on BPI Peer Acceptance and Rejection Scale.

Variable	*B*	*SE B*
Step 1a		
Total Exposure to PTEs	-0.07	1.76
Step 1b		
Interpersonal PTEs	-1.66	1.75
Step 1c		
Interpersonal Violence PTEs	-1.87	1.83

Note. Letters denote separate regression analyses. The results are presented together here to conserve space.

Note. R^2 values were averaged across the five imputed data sets. They are the following: $R^2 = 0.00$ for Step 1a; $R^2 = 0.02$ for Step 1b; $R^2 = 0.02$ for Step 1c.

Tests of Specific Aim 2: PTE Exposure and Emotional Adjustment Moderated by Parent Affective Symptoms

A series of linear regressions were performed to determine whether parent affective symptoms moderate the relationship between child exposure to PTEs and child emotional adjustment. In these regressions, the predictor variables (exposure to PTEs and parent affective symptoms; centered z scores) were entered in the first step, the interaction term was entered into the second step, and the emotional adjustment variable of interest was entered as the dependent variable.

Parent affective symptoms and exposure to interpersonal violence PTEs were associated with CBCL Total scores, but not CTRF Total or Dysregulation scores (see Tables 16-24). However, there was not evidence that parent affective symptoms moderate the relationship between child exposure to PTEs and our measures of emotional adjustment.

Table 16

Summary of Linear Regression Analysis for Total PTE Exposure and Parent Affective Symptoms Variables Predicting Parent-Reported Total Problems T Score on the CBCL.

Variable	B	SE B
Step 1		
Total Exposure to PTEs	-1.29	1.25
Parent Affective Symptoms	4.18**	1.25
Step 2		
Total Exposure to PTEs	-1.29	1.29
Parent Affective Symptoms	4.18**	1.26
Interaction term: Total Exposure to PTEs and Parent Affective Symptoms	-0.02	1.28

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.20$ for Step 1; $\Delta R^2 = 0.00$ for Step 2.

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, [†]$p \le 0.10$

Table 17

Summary of Linear Regression Analysis for Interpersonal PTE Exposure and Parent Affective Symptoms Variables Predicting Parent-Reported Total Problems T Score on the CBCL.

Variable	*B*	*SE B*
Step 1		
Exposure to Interpersonal PTEs	-0.81	1.22
Parent Affective Symptoms	4.41***	1.25
Step 2		
Exposure to Interpersonal PTEs	-0.80	1.24
Parent Affective Symptoms	4.41***	1.23
Interaction term: Exposure to Interpersonal PTEs and Parent Affective Symptoms	0.13	1.24

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.20$ for Step 1; $\Delta R^2 = 0.00$ for Step 2.

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, [†]$p \leq 0.10$

Table 18

Summary of Linear Regression Analysis for Interpersonal Violence PTE Exposure and Parent Affective Symptoms Variables Predicting Parent-Reported Total Problems T Score on the CBCL.

Variable	B	SE B
Step 1		
Exposure to Interpersonal Violence PTEs	-2.35*	1.19
Parent Affective Symptoms	4.15***	1.19
Step 2		
Exposure to Interpersonal Violence PTEs	-2.30	1.20
Parent Affective Symptoms	4.18***	1.19
Interaction term: Exposure to Interpersonal Violence PTEs and Parent Affective Symptoms	-1.00	1.19

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.03$ for Step 1; $\Delta R^2 = 0.00$ for Step 2.

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, †$p \leq 0.10$

Table 19

Summary of Linear Regression Analysis for Total PTE Exposure and Parent Affective Symptoms Variables Predicting Teacher-Reported Total Problems T Score on the CTRF.

Variable	*B*	*SE B*
Step 1		
Total Exposure to PTEs	-1.43	1.26
Parent Affective Symptoms	0.86	1.25
Step 2		
Total Exposure to PTEs	-1.61	1.30
Parent Affective Symptoms	0.86	1.25
Interaction term: Total Exposure to PTEs and Parent Affective Symptoms	-0.84	1.29

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.04$ for Step 1; $\Delta R^2 = 0.01$ for Step 2.

Table 20

Summary of Linear Regression Analysis for Interpersonal PTE Exposure and Parent Affective Symptoms Variables Predicting Teacher-Reported Total Problems T Score on the CTRF.

Variable	*B*	*SE B*
Step 1		
Exposure to Interpersonal PTEs	-0.55	1.26
Parent Affective Symptoms	1.17	1.23
Step 2		
Exposure to Interpersonal PTEs	1.17	1.23
Parent Affective Symptoms	0.86	1.25
Interaction term: Exposure to Interpersonal PTEs and Parent Affective Symptoms	-1.06	1.25

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.02$ for Step 1; $\Delta R^2 = 0.02$ for Step 2.

Table 21

Summary of Linear Regression Analysis for Interpersonal Violence PTE Exposure and Parent Affective Symptoms Variables Predicting Teacher-Reported Total Problems T Score on the CTRF.

Variable	B	SE B
Step 1		
Exposure to Interpersonal Violence PTEs	-0.87	1.26
Parent Affective Symptoms	1.11	1.23
Step 2		
Exposure to Interpersonal Violence PTEs	-0.87	1.27
Parent Affective Symptoms	1.12	1.24
Interaction term: Exposure to Interpersonal Violence PTEs and Parent Affective Symptoms	-0.12	1.25

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.03$ for Step 1; $\Delta R^2 = 0.00$ for Step 2.

Table 22

Summary of Linear Regression Analysis for Total PTE Exposure and Parent Affective Symptoms Variables Predicting Dysregulation.

Variable	*B*	*SE B*
Step 1		
Total Exposure to PTEs	-0.01	0.06
Parent Affective Symptoms	0.03	0.05
Step 2		
Total Exposure to PTEs	-0.02	0.06
Parent Affective Symptoms	0.03	0.05
Interaction term: Total Exposure to PTEs and Parent Affective Symptoms	-0.03	0.06

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.01$ for Step 1; $\Delta R^2 = 0.01$ for Step 2.

Table 23

Summary of Linear Regression Analysis for Interpersonal PTE Exposure and Parent Affective Symptoms Variables Predicting Dysregulation.

Variable	B	SE B
Step 1		
Exposure to Interpersonal PTEs	0.02	0.06
Parent Affective Symptoms	0.04	0.05
Step 2		
Exposure to Interpersonal PTEs	0.02	0.06
Parent Affective Symptoms	0.04	0.05
Interaction term: Exposure to Interpersonal PTEs and Parent Affective Symptoms	-0.02	0.06

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.01$ for Step 1; $\Delta R^2 = 0.01$ for Step 2.

Table 24

Summary of Linear Regression Analysis for Interpersonal Violence PTE Exposure and Parent Affective Symptoms Variables Predicting Dysregulation.

Variable	B	$SE\ B$
Step 1		
Exposure to Interpersonal Violence PTEs	-0.03	0.05
Parent Affective Symptoms	0.03	0.05
Step 2		
Exposure to Interpersonal Violence PTEs	-0.02	0.05
Parent Affective Symptoms	0.03	0.05
Interaction term: Exposure to Interpersonal Violence PTEs and Parent Affective Symptoms	-0.04	0.05

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.02$ for Step 1; $\Delta R^2 = 0.01$ for Step 2.

Tests of Specific Aim 3: PTE Exposure and Social Competence, Moderated by Emotional Adjustment

A series of linear regressions were performed to determine whether child emotional adjustment moderated the relationship between child exposure to PTEs and child social competence. Covariates, where appropriate, were entered into the first step of the regression, the predictor variables (exposure to PTEs and emotional adjustment; centered z scores) were entered in the second step, the interaction term was entered into the third step, and the social competence variable of interest was entered as the dependent variable.

Scattered main effects were found for exposure to PTEs, CBCL Total, CTRF Total, and Dysregulation on Parent SSRS score (see Tables 25-47 below). However, exposure to PTEs and emotional adjustment did not appear to interact to predict parents' reports of children's social competence. Main effects were found for CTRF Total on Teacher SSRS score, and there was a statistical trend for moderation of exposure to interpersonal violence PTEs and CTRF Total in predicting Teacher SSRS score. As shown in Figure 5, a relation was found between exposure to interpersonal violence PTEs and teacher-reported social skills, but only among children with the highest levels of teacher-reported behavior problems [$B = 5.98$, t = 2.49, p < 0.05] and not for children with moderate levels [$B = -4.47$, t = -1.55, p > 0.10] or low levels [$B = 25.15$, t = 1.30, p > 0.10]. Exposure to PTEs and emotional adjustment did not predict individually, or interact to predict children's reports of their own social competence.

Table 25

Summary of Linear Regression Analysis for Total PTE Exposure and CBCL Total T Score Predicting Parent-Reported Total Social Skills Standard Score on the SSRS[2].

Variable	B	SE B
Step 1		
Total Exposure to PTEs[3]	-4.16†	2.18
CBCL Total	-8.41***	2.20
Step 2		
Total Exposure to PTEs[4]	-3.67ᵃ	2.20
CBCL Total	-8.30***	2.19
Interaction term: Total Exposure to PTEs and CBCL Total	2.78	2.13

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.21$ for Step 1; $\Delta R^2 = 0.02$ for Step 2.

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, †$p \leq 0.10$

---

[2] This series of regressions violated the assumption of homoscedasticity of the errors, with Levene's statistic significant at p < 0.01 level. The original results are reported in this table. The CBCL Total variable was then dichotomized and retested, therefore meeting the assumption of homoscedasticity of the errors.
[3] Statistically non-significant predictor when CBCL Total is dichotomized and tested.
[4] Statistically non-significant predictor when CBCL Total is dichotomized and tested.

Table 26

Summary of Linear Regression Analysis for Interpersonal PTE Exposure and CBCL Total T Score Predicting Parent-Reported Total Social Skills Standard Score on the SSRS[5].

Variable	*B*	*SE B*
Step 1		
Exposure to Interpersonal PTEs	-3.53	2.15
CBCL Total	-7.95***	2.14
Step 2		
Exposure to Interpersonal PTEs	-3.46	2.11
CBCL Total	-7.79***	2.14
Interaction term: Exposure to Interpersonal PTEs and CBCL Total[6]	3.69†	2.04

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.17$ for Step 1; $\Delta R^2 = 0.07$ for Step 2.

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, $^{\dagger p \leq 0.10}$

---

[5] This series of regressions violated the assumption of homoscedasticity of the errors, with Levene's statistic significant at $p < 0.01$ level. The original results are reported in this table. The CBCL Total variable was then dichotomized and retested, therefore meeting the assumption of homoscedasticity of the errors.
[6] Interaction effect is statistically non-significant when CBCL Total is dichotomized and tested.

Table 27

Summary of Linear Regression Analysis for Interpersonal Violence PTE Exposure and CBCL Total T Score Predicting Parent-Reported Total Social Skills Standard Score on the SSRS[7].

Variable	B	SE B
Step 1[8]		
Exposure to Interpersonal Violence PTEs	-0.46	2.28
CBCL Total	-7.56**	2.30
Step 2		
Exposure to Interpersonal Violence PTEs	-0.65	2.29
CBCL Total	-7.22**	2.34
Interaction term: Exposure to Interpersonal Violence PTEs and CBCL Total	1.83	2.22

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.16$ for Step 1; $\Delta R^2 = 0.01$ for Step 2.

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, [†]$p \leq 0.10$

---

[7] This series of regressions violated the assumption of homoscedasticity of the errors, with Levene's statistic significant at $p < 0.01$ level. The original results are reported in this table. The CBCL Total variable was then dichotomized and retested, therefore meeting the assumption of homoscedasticity of the errors.

[8] Similar findings for this family of regression analyses when CBCL Total is dichotomized and tested.

Table 28

Summary of Linear Regression Analysis for Total PTE Exposure and CTRF Total T Score Predicting Parent-Reported Total Social Skills Standard Score on the SSRS .

Variable	B	SE B
Step 1		
Total Exposure to PTEs	-3.02	2.32
CTRF Total	-4.73*	2.41
Step 2		
Total Exposure to PTEs	-3.14	2.34
CTRF Total	-4.72*	2.42
Interaction term: Total Exposure to PTEs and CTRF Total	-1.46	2.45

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.08$ for Step 1; $\Delta R^2 = 0.01$ for Step 2.

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, $^{\dagger}p \leq 0.10$

Table 29

Summary of Linear Regression Analysis for Interpersonal PTE Exposure and CTRF Total T Score Predicting Parent-Reported Total Social Skills Standard Score on the SSRS.

Variable	B	SE B
Step 1		
Exposure to Interpersonal PTEs	-2.72	2.30
CTRF Total	-4.41†	2.39
Step 2		
Exposure to Interpersonal PTEs	-2.71	2.31
CTRF Total	-4.33†	2.41
Interaction term: Exposure to Interpersonal PTEs and CTRF Total	-0.74	2.32

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.07$ for Step 1; $\Delta R^2 = 0.00$ for Step 2.

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, $^{\dagger}p \leq 0.10$

Table 30

Summary of Linear Regression Analysis for Interpersonal Violence PTE Exposure and CTRF Total T Score Predicting Parent-Reported Total Social Skills Standard Scores on the SSRS.

Variable	*B*	*SE B*
Step 1		
Exposure to Interpersonal Violence PTEs	1.29	2.32
CTRF Total	-4.05†	2.43
Step 2		
Exposure to Interpersonal Violence PTEs	1.39	2.36
CTRF Total	-3.90	2.47
Interaction term: Exposure to Interpersonal Violence PTEs and CTRF Total	-0.95	2.44

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.06$ for Step 1; $\Delta R^2 = 0.00$ for Step 2.

***p < 0.001, **p < 0.01, *p < 0.05, $^{\dagger}p \leq 0.10$

Table 31

Summary of Linear Regression Analysis for Total PTE Exposure and Dysregulation Predicting Parent-Reported Total Social Skills Standard Score on the SSRS [9].

Variable	*B*	*SE B*
Step 1		
Total Exposure to PTEs	-2.35	2.33
Dysregulation[10]	-3.64	2.40
Step 2		
Total Exposure to PTEs	-2.22	2.36
Dysregulation[11]	-3.60	2.43
Interaction term: Total Exposure to PTEs and Dysregulation	0.57	2.75

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.05$ for Step 1; $\Delta R^2 = 0.00$ for Step 2.

---

[9] This series of regressions violated the assumption of homoscedasticity of the errors, with Levene's statistic significant at $p < 0.01$ level. The original results are reported in this table, although the Dysregulation variable was then dichotomized and retested. Largely, the results of these subsequent analyses did not differ significantly from the results reported in the table above.

[10] Approaching significance when Dysregulation is dichotomized and retested.

[11] Approaching significance when Dysregulation is dichotomized and retested.

Table 32

Summary of Linear Regression Analysis for Interpersonal PTE Exposure and Dysregulation Predicting Parent-Reported Total Social Skills Standard Score on the SSRS[12].

Variable	B	SE B
Step 1		
Exposure to Interpersonal PTEs	-2.24	2.34
Dysregulation[13]	-3.45	2.42
Step 2		
Exposure to Interpersonal PTEs	-2.24	2.35
Dysregulation[14]	-3.43	2.43
Interaction term: Exposure to Interpersonal PTEs and Dysregulation	1.15	2.55

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.06$ for Step 1; $\Delta R^2 = 0.00$ for Step 2.

---

[12] This series of regressions violated the assumption of homoscedasticity of the errors, with Levene's statistic significant at $p < 0.01$ level. The original results are reported in this table, although the Dysregulation variable was then dichotomized and retested. Largely, the results of these subsequent analyses did not differ significantly from the results reported in the table above.

[13] Approaching significance when Dysregulation is dichotomized and retested.

[14] Approaching significance when Dysregulation is dichotomized and retested.

Table 33

Summary of Linear Regression Analysis for Interpersonal Violence PTE Exposure and Dysregulation Predicting Parent-Reported Total Social Skills Standard Score on the SSRS[15].

Variable	*B*	*SE B*
Step 1		
Exposure to Interpersonal Violence PTEs	1.47	2.34
Dysregulation[16]	-3.40	2.47
Step 2		
Exposure to Interpersonal Violence PTEs	1.45	2.35
Dysregulation[17]	-3.34	2.48
Interaction term: Exposure to Interpersonal Violence PTEs and Dysregulation	1.51	2.53

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.04$ for Step 1; $\Delta R^2 = 0.01$ for Step 2.

---

[15] This series of regressions violated the assumption of homoscedasticity of the errors, with Levene's statistic significant at $p < 0.01$ level. The original results are reported in this table, although the Dysregulation variable was then dichotomized and retested. Largely, the results of these subsequent analyses did not differ significantly from the results reported in the table above.

[16] Approaching significance when Dysregulation is dichotomized and retested.

[17] Approaching significance when Dysregulation is dichotomized and retested.

Table 34

Summary of Linear Regression Analysis for Total PTE Exposure and CBCL Total T Score Predicting Teacher-Reported Total Social Skills Standard Score on the SSRS[18].

Variable	*B*	*SE B*
Step 1		
Total Exposure to PTEs	0.24	1.62
CBCL Total	-1.44	1.55
Step 2		
Total Exposure to PTEs	0.12	1.63
CBCL Total	-1.46	1.57
Interaction term: Total Exposure to PTEs and CBCL Total	-0.67	1.57

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.02$ for Step 1; $\Delta R^2 = 0.00$ for Step 2.

---

[18] This series of regressions violated the assumption of homoscedasticity of the errors, with Levene's statistic significant at $p < 0.01$ level. The original results are reported in this table, although the CBCL Total variable was then dichotomized and retested. The results of these subsequent analyses did not differ significantly from the results reported in the table above.

Table 35

Summary of Linear Regression Analysis for Interpersonal PTE Exposure and CBCL
Total T Score Predicting Teacher-Reported Total Social Skills Standard Score on the
SSRS[19].

Variable	B	SE B
Step 1		
Parent Immigration Status	8.15**	2.92
Step 2		
Parent Immigration Status	9.25**	2.96
Exposure to Interpersonal PTEs	-1.96	1.50
CBCL Total	-2.13	1.42
Step 3		
Parent Immigration Status	9.17**	3.02
Exposure to Interpersonal PTEs	-1.95	1.51
CBCL Total	-2.14	1.43
Interaction term: Exposure to Interpersonal PTEs and CBCL Total	-0.30	1.43

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.12$ for Step 1; $\Delta R^2 = 0.05$ for Step 2; $\Delta R^2 = 0.01$ for Step 3.

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, †$p \leq 0.10$

---

[19] This series of regressions violated the assumption of homoscedasticity of the errors, with Levene's statistic significant at $p < 0.01$ level. The original results are reported in this table, although the CBCL Total variable was then dichotomized and retested. The results of these subsequent analyses did not differ significantly from the results reported in the table above.

Table 36

Summary of Linear Regression Analysis for Interpersonal Violence PTE Exposure and CTRF Total T Score Predicting Teacher-Reported Total Social Skills Standard Score on the SSRS[20].

Variable	B	SE B
Step 1		
Parent Immigration Status	8.15**	2.92
Step 2		
Parent Immigration Status	5.47*	2.52
Exposure to Interpersonal Violence PTEs	-1.01	1.17
CTRF Total	-7.29***	1.12
Step 3		
Parent Immigration Status	5.02*	2.52
Exposure to Interpersonal Violence PTEs	-0.68	1.14
CTRF Total	-6.97***	1.09
Interaction term: Exposure to Interpersonal Violence PTEs and CTRF Total[21]	-2.26*	1.05

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.12$ for Step 1; $\Delta R^2 = 0.04$ for Step 2; $\Delta R^2 = 0.02$ for Step 3.

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, †$p \leq 0.10$

---

[20] This series of regressions violated the assumption of homoscedasticity of the errors, with Levene's statistic significant at $p < 0.01$ level. The original results are reported in this table, although the CTRF Total variable was then dichotomized and retested. Largely, the results of these subsequent analyses did not differ significantly from the results reported in the table above.

[21] When the CTRF Total variable was dichotomized, this beta weight went from statistically significant to approaching significance ($p < 0.10$).

Figure 5

Interaction Between Interpersonal Violence PTE Exposure and CTRF Total T Score Predicting Teacher-Reported Total Social Skills Standard Score on the SSRS.
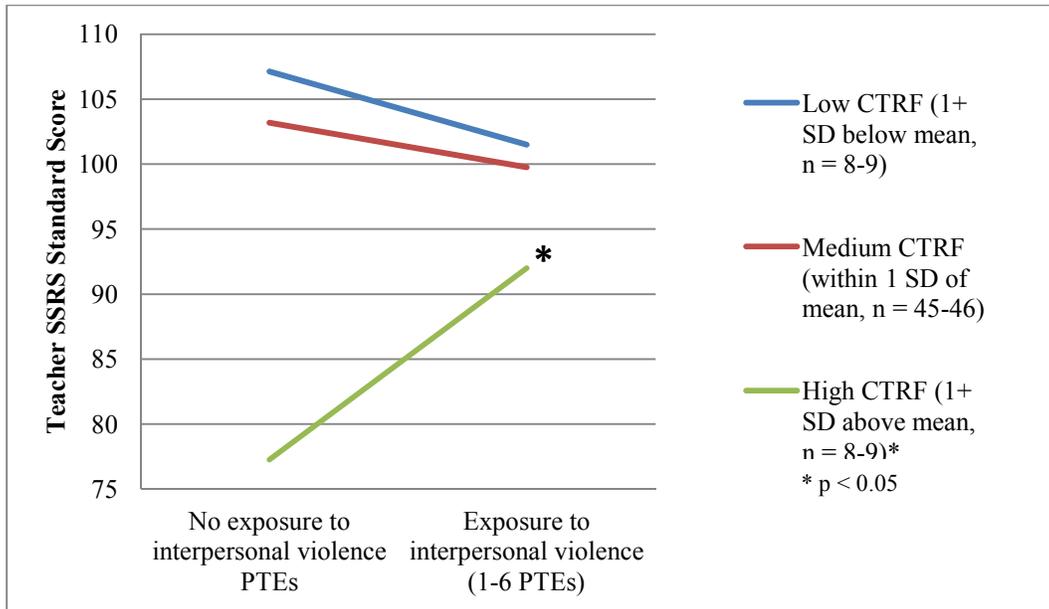
Table 37

Summary of Linear Regression Analysis for Total PTE Exposure and Dysregulation
Predicting Teacher-Reported Total Social Skills Standard Score on the SSRS.

Variable	*B*	*SE B*
Step 1		
Total Exposure to PTEs	0.56	1.60
Dysregulation	0.00	1.59
Step 2		
Total Exposure to PTEs	0.64	1.61
Dysregulation	0.06	1.61
Interaction term: Total Exposure to PTEs and Dysregulation	0.91	1.65

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.01$ for Step 1; $\Delta R^2 = 0.00$ for Step 2.

Table 38

Summary of Linear Regression Analysis for Interpersonal PTE Exposure and Dysregulation Predicting Teacher-Reported Total Social Skills Standard Score on the SSRS.

Variable	B	$SE\ B$
Step 1		
Parent Immigration Status	8.15**	2.92
Step 2		
Parent Immigration Status	8.81**	3.00
Exposure to Interpersonal PTEs	-1.63	1.51
Dysregulation	0.14	1.52
Step 3		
Parent Immigration Status	8.85**	3.02
Exposure to Interpersonal PTEs	-1.63	1.53
Dysregulation	0.15	1.53
Interaction term: Exposure to Interpersonal PTEs and Dysregulation	0.22	1.58

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.12$ for Step 1; $\Delta R^2 = 0.02$ for Step 2; $\Delta R^2 = 0.01$ for Step 3.

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, [†]$p \leq 0.10$

Table 39

Summary of Linear Regression Analysis for Interpersonal Violence PTE Exposure and Dysregulation Predicting Teacher-Reported Total Social Skills Standard Score on the SSRS.

Variable	B	SE B
Step 1		
Parent Immigration Status	8.15**	2.92
Step 2		
Parent Immigration Status	8.42**	3.07
Exposure to Interpersonal Violence PTEs	-0.55	1.51
Dysregulation	0.03	1.52
Step 3		
Parent Immigration Status	8.33**	3.09
Exposure to Interpersonal Violence PTEs	-0.54	1.52
Dysregulation	0.02	1.54
Interaction term: Exposure to Interpersonal Violence PTEs and Dysregulation	-0.51	1.52

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.12$ for Step 1; $\Delta R^2 = 0.01$ for Step 2; $\Delta R^2 = 0.00$ for Step 3.

***$p < 0.001$, **$p < 0.01$, *$p < 0.05$, †$p \leq 0.10$

Table 40

Summary of Linear Regression Analysis for Total PTE Exposure and CBCL Total T Score Predicting Child-Reported Social Adjustment Raw Score on BPI Peer Acceptance and Rejection Scale.

Variable	*B*	*SE B*
Step 1		
Total Exposure to PTEs	-0.09	0.60
CBCL Total	-0.29	0.58
Step 2		
Total Exposure to PTEs	-0.07	0.62
CBCL Total	-0.29	0.59
Interaction term: Total Exposure to PTEs and CBCL Total	0.14	0.58

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.01$ for Step 1; $\Delta R^2 = 0.00$ for Step 2.

Table 41

Summary of Linear Regression Analysis for Interpersonal PTE Exposure and CBCL Total T Score Predicting Child-Reported Social Adjustment Raw Score on BPI Peer Acceptance and Rejection Scale.

Variable	B	SE B
Step 1		
Exposure to Interpersonal PTEs	-0.60	0.58
CBCL Total	-0.36	0.57
Step 2		
Exposure to Interpersonal PTEs	-0.61	0.59
CBCL Total	-0.37	0.57
Interaction term: Exposure to Interpersonal PTEs and CBCL Total	-0.34	0.56

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.02$ for Step 1; $\Delta R^2 = 0.01$ for Step 2.

Table 42

Summary of Linear Regression Analysis for Interpersonal Violence PTE Exposure and CBCL Total T Score Predicting Child-Reported Social Adjustment Raw Score on BPI Peer Acceptance and Rejection Scale.

Variable	B	$SE\ B$
Step 1		
Exposure to Interpersonal Violence PTEs	-0.72	0.59
CBCL Total	-0.48	0.59
Step 2		
Exposure to Interpersonal Violence PTEs	-0.76	0.60
CBCL Total	-0.41	0.60
Interaction term: Exposure to Interpersonal Violence PTEs and CBCL Total	0.37	0.57

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.03$ for Step 1; $\Delta R^2 = 0.01$ for Step 2.

Table 43

Summary of Linear Regression Analysis for Total PTE Exposure and CTRF Total T Score Predicting Child-Reported Social Adjustment Raw Score on BPI Peer Acceptance and Rejection Scale.

Variable	B	SE B
Step 1		
Total Exposure to PTEs	0.02	0.59
CTRF Total	0.22	0.59
Step 2		
Total Exposure to PTEs	0.00	0.60
CTRF Total	0.22	0.60
Interaction term: Total Exposure to PTEs and CTRF Total	-0.16	0.59

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.01$ for Step 1; $\Delta R^2 = 0.00$ for Step 2.

Table 44

Summary of Linear Regression Analysis for Interpersonal PTE Exposure and CTRF Total T Score Predicting Child-Reported Social Adjustment Raw Score on BPI Peer Acceptance and Rejection Scale.

Variable	*B*	*SE B*
Step 1		
Exposure to Interpersonal PTEs	-0.53	0.58
CTRF Total	0.17	0.58
Step 2		
Exposure to Interpersonal PTEs	-0.53	0.58
CTRF Total	0.20	0.58
Interaction term: Exposure to Interpersonal PTEs and CTRF Total	-0.23	0.56

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.02$ for Step 1; $\Delta R^2 = 0.00$ for Step 2.

Table 45

Summary of Linear Regression Analysis for Interpersonal Violence PTE Exposure and CTRF Total T Score Predicting Child-Reported Social Adjustment Raw Score on BPI Peer Acceptance and Rejection Scale.

Variable	*B*	*SE B*
Step 1		
Exposure to Interpersonal Violence PTEs	-0.56	0.58
CTRF Total	0.15	0.58
Step 2		
Exposure to Interpersonal Violence PTEs	-0.55	0.58
CTRF Total	0.16	0.59
Interaction term: Exposure to Interpersonal Violence PTEs and CTRF Total	-0.07	0.59

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.02$ for Step 1; $\Delta R^2 = 0.00$ for Step 2.

Table 46

Summary of Linear Regression Analysis for Total PTE Exposure and Dysregulation Predicting Child-Reported Social Adjustment Raw Score on BPI Peer Acceptance and Rejection Scale.

Variable	*B*	*SE B*
Step 1		
Total Exposure to PTEs	-0.04	0.58
Dysregulation	-0.27	0.58
Step 2		
Total Exposure to PTEs	-0.01	0.59
Dysregulation	-0.25	0.58
Interaction term: Total Exposure to PTEs and Dysregulation	0.31	0.60

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.01$ for Step 1; $\Delta R^2 = 0.00$ for Step 2.

Table 47

Summary of Linear Regression Analysis for Interpersonal PTE Exposure and Dysregulation Predicting Child-Reported Social Adjustment Raw Score on BPI Peer Acceptance and Rejection Scale.

Variable	B	$SE\ B$
Step 1		
Exposure to Interpersonal PTEs	-0.54	0.58
Dysregulation	-0.25	0.57
Step 2		
Exposure to Interpersonal PTEs	-0.55	0.58
Dysregulation	-0.25	0.58
Interaction term: Exposure to Interpersonal PTEs and Dysregulation	0.30	0.62

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.02$ for Step 1; $\Delta R^2 = 0.01$ for Step 2.

Table 48

Summary of Linear Regression Analysis for Interpersonal Violence PTE Exposure and Dysregulation Predicting Child-Reported Social Adjustment Raw Score on BPI Peer Acceptance and Rejection Scale.

Variable	B	SE B
Step 1		
Exposure to Interpersonal Violence PTEs	-0.61	0.57
Dysregulation	-0.32	0.57
Step 2		
Exposure to Interpersonal Violence PTEs	-0.61	0.57
Dysregulation	-0.32	0.58
Interaction term: Exposure to Interpersonal Violence PTEs and Dysregulation	0.27	0.59

Note. R^2 values were averaged across the five imputed data sets. They are the following:

$R^2 = 0.02$ for Step 1; $\Delta R^2 = 0.01$ for Step 2.

Tests of Specific Aim 4: Exploring Potential Moderating Effect of Child Gender on PTE Exposure, Emotional Adjustment, and Social Competence

First, independent samples t-tests were used to compare rates of PTE exposure between boys and girls in the sample. The results of these tests show that girls had been exposed to significantly more total lifetime PTE events [$t(61) = -2.02$, $p < 0.05$] and marginally more interpersonal events [$t(61) = -1.90$, $p = 0.06$] and interpersonal violent events [$t(61) = -1.84$, $p = 0.07$]. Second, independent samples t-tests showed that boys and girls did not differ on any measure of emotional adjustment or social competence. Next, linear regressions were performed to test gender as a potential moderator of the effects of exposure to PTEs on emotional adjustment and social competence. Covariates, where appropriate, were entered into the first step of the regression, the predictor variables (exposure to PTEs, z scores; and child gender) were entered in the second step, the interaction term was entered into the third step, and the emotional adjustment or social competence variable of interest was entered as the dependent variable.

The results of these linear regressions did not reveal any significant interaction effects between child gender and exposure to PTEs in predicting either emotional adjustment or social competence. Thus, no support was found for Specific Aim 4.

Table 49

Summary of Significant Findings for Specific Aims

Specific Aims	Support Found	Significant Findings
1: To determine how child exposure to PTEs is related to child emotional adjustment and child social competence.	**Partially Supported**	Exposure to interpersonal violence PTEs was a marginally significant predictor of CBCL Total scores; no other type of PTE exposure was found to predict emotional adjustment or social competence outcomes.
2: To determine whether parent affective symptoms, particularly depressive, anxiety, and PTSD symptomatology moderates the relationship between child exposure to PTEs and child emotional adjustment.	**Not Supported**	No interaction effects between exposure to PTEs and parent affective symptoms to predict child emotional adjustment.
3: To determine whether emotional adjustment moderates the relationship between child exposure to PTEs and child social competence.	**Partially Supported**	There was a marginally significant interaction effect between exposure to interpersonal violence PTEs and CTRF Total in predicting Teacher SSRS score.
4: On an exploratory basis, to test potential gender differences in the relationship between exposure to PTEs and emotional adjustment, and between exposure to PTEs and social competence.	**Not Supported**	No significant interaction effects were found between child gender and exposure to PTEs in predicting either their emotional adjustment or social competence.

CHAPTER 4

DISCUSSION

The current study reports unique findings related to young children's exposure to potentially traumatic events (PTEs). While the majority of the research in the field emphasizes differences between young children who have and have not been exposed to PTEs – particularly the symptomatology of exposed children – the current study tells a different story. Our findings suggest that children living in the adverse circumstances of poverty who are and are not exposed to PTEs may be more alike than different, particularly in regard to their emotional and social development. The lack of significant differences between children who had been exposed to PTEs and those who had not is, in itself, a compelling finding. The following discussion will examine the patterns of children's exposure to PTEs, an analysis of each of the specific aims, and a consideration of strengths, weaknesses, and future directions of the current study.

The rate of lifetime exposure to PTEs among our child participants was strikingly high, with 71.4% experiencing at least one event. Seeing that 64.6% of our participants were exposed to at least one interpersonal event, the vast majority of children who had been exposed to PTEs had been exposed to one of an interpersonal nature. It follows that very few participants had been exposed exclusively to non-interpersonal PTEs. Therefore, in spite of the existing research that suggests that preschoolers have different profiles of symptomatology following exposure to interpersonal versus non-interpersonal

PTEs, we did not compare these types of exposures. Instead, we focused on exposure to all PTEs, then interpersonal PTEs, and then interpersonal violence PTEs, which encompassed increasingly smaller, more specific groups.

Examining exposure to interpersonal violence PTEs as an independent variable was of particular interest, as increased exposure among economically disadvantaged children has been reported in previous literature (Finkelhor et al., 2005). Consistent with this research, exposure to interpersonal violence PTEs – but not total lifetime PTEs or interpersonal PTEs – was found to be a direct predictor of emotional adjustment and social competence variables in tests of Specific Aims 1 and 3. These findings support that there is something different, and more detrimental, about PTEs involving interpersonal violence.

Consistent with previous studies, exposure to interpersonal violence PTEs predicted CBCL Total scores, albeit marginally. Exposure to PTEs was not a significant predictor of either of the other measures of emotional adjustment, although CBCL Total was positively correlated with Dysregulation. Given that exposure to PTEs was correlated with only the parent-report measure of emotional adjustment, it is possible that parents who know that their children have been exposed to PTEs view their children as having more negative behaviors and report them accordingly. It was surprising to find that exposure to PTEs did not account for significant variance in teacher or child reported indicators of child emotional adjustment or any measures of child social competence.

Parents who themselves reported greater affective symptoms were more likely to report greater difficulties in their children's emotional adjustment. However, parent affective symptoms did not moderate the relationship between child exposure to PTEs

and emotional adjustment. While exposure to PTEs was not a significant predictor of children's emotional adjustment, parent affective symptoms proved to be a robust predictor of emotional adjustment, but only of parent reported children's behavior problems. Exposure to PTEs and parent affective symptoms did not interact to explain any differences in children's teacher-reported behavior problems or in children's dysregulation during the parent-child interaction task.

There was some limited support for the role of exposure to PTEs and parent-reported emotional adjustment on both teacher- and parent-reported social competence. However, only one moderation model tested approached significance, with exposure to interpersonal violence PTEs and CTRF Total interacting to predict Teacher SSRS scores. It is reasonable that teacher-reported variables would be linked this way, as teachers are more likely to be aware of behaviors that can be observed in children's school context. Examining the interaction more closely, it appears that children who have fewer teacher-reported behavior problems are susceptible to social skills decrements when exposed to interpersonal violence PTES, whereas children with greater behavior problems do not experience poorer social skills when exposed. This is a surprising finding, but it may be that we are seeing multiple patterns of coping with exposure to interpersonal violence PTEs. While some children in the current sample may have responded by displaying significant behavior problems, others may have responded by showing slightly lower social skills but no behavior problems. It is important to consider that this was a significant finding in the context of many non-significant ones, so that replication of the interaction between interpersonal violence PTEs and teacher-reported emotional adjustment in predicting teacher-reported social competence in another sample would

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help to rule out Type I error. Exposure to PTEs did not significantly predict child-reported Peer Acceptance and Rejection on the BPI. It is notable – perhaps even positive – that exposure to PTEs did not seem to be related to how children self-reported their relationships with peers.

The fact that girls in the sample experienced significantly more PTEs than boys, yet had comparable levels of emotional adjustment and social competence, is an unexpected finding and inconsistent with previous literature. Comparable rates of PTE exposure have been reported between young boys and girls (Mitchell, Lewin, & Joseph, 2009), and it is important to consider reasons why girls' exposure may have been elevated in this sample. One possible explanation for the different rates of exposure might involve different coping styles between boys and girls. Ornduff and Monahan (1999) point out that young children's coping skills for exposure to PTEs may be limited, and might include strategies such as avoidance or magical thinking. We did not assess for children's coping skills in the current study, although it may be the case that boys engaged in behaviors that enabled them to avoid exposure to PTEs whereas girls engaged in behaviors that made them more vulnerable. Particularly in the case of interpersonal violence PTEs between family members, girls may have been more inclined to stay proximally close to loved ones and in turn, experience greater exposure as compared to boys, who may have been more inclined to distance themselves. Similar patterns have been observed by Buss et al. (2008), who found that young girls are more likely than young boys to seek contact with their mothers in distressing situations. Situations preceding PTEs can be very distressing and had they sought the proximity of their

mother, it is easy to see how this may have resulted in the observed increased rate of exposure among girls.

Given the gender differences in PTE exposure and yet the similar, normative rates of emotional adjustment and social competence, child sex was tested for possible interaction effects in Specific Aim 4. The results of these tests of moderation were non-significant, thus consistent with the mixed and limited current research in this area. The findings of this study may suggest that young boys and girls process their exposure to PTEs in comparable ways. However, it may also be the case that there were some variables contributing to girls' resilience, allowing them to demonstrate similar levels of emotional adjustment and social competence in light of their increased exposure to PTEs. Additional research is needed to explore just which variables these may be.

Strengths and Limitations

The current study has many strengths, particularly its economically, racially, and ethnically diverse sample of preschool-age children. While exposure to PTEs during early childhood is a growing area of research, many studies focus on the experiences of white, middle-class children. It is incorrect to assume that the experiences of these populations generalize, particularly to children who face the salient stressor of economic disadvantage. A related strength of the current study is its high-risk community sample instead of a sample consisting of children recruited specifically because of their past exposure to PTEs. This gives us a better understanding of rates and types of exposure to PTEs, and how they are associated with children's development, in the greater context of children who face economic risk. The non-referred nature of our sample also may account for differences in findings between the current study and those previously

published. The current study is also strengthened by its inclusion of standardized, normed measures (e.g., CBCL and SSRS) as well as innovative new measures (e.g., BPI,) both of which were appropriate and well-matched for the current sample. Additionally, the inclusion of data from multiple sources – parents, teachers, observer ratings of dyadic data, and children themselves – distinguish the current study from previous studies, many of which rely heavily on parent-report data. However, given the cross-sectional and non-experimental design of the study, we are not able to determine whether PTE exposure has a causal relationship to child adjustment. Additionally, under-reporting of exposure to PTEs, partly due to desirability effects on the part of the parent participants, is a common limitation when conducting research in this field. Although the rate of exposure to PTEs was considerably high in the current sample, it is reasonable to suspect that this rate may be even higher.

Related to assessment of exposure to PTEs, it is important to revisit the fact that we adapted the TESI-PRR from a structured interview to a checklist questionnaire for parents to complete, on behalf of their children. Exposure to PTEs was assessed in this way to fit within the larger study goals, which did not specifically include trauma. Future research would benefit from a more in-depth examination of the nature of PTE exposure among young, at-risk children, including the severity and frequency of such exposures.

Future Directions

It is essential to continue looking at multiple outcomes – not exclusively symptomatology – of exposure to PTEs during early childhood, and to assess these outcomes longitudinally. In doing so, it is important to continue tracking exposure to PTEs, so that patterns of exposure can be analyzed, and so that the effects of early

childhood trauma can be teased apart from those of PTEs experienced later in life. While symptomatology is important to consider, it is helpful to measure other developmental outcomes too, particularly ones that include space for positive growth, like social competence.

Although we examined parent affective symptoms as a moderator of the relationship between child exposure to PTEs and child emotional adjustment, parents' own exposure to PTEs – and relationship with their affective symptoms – was not explored in the current study. To build off the work of Scheeringa and Zeanah (2001), it would be helpful to study child and parent exposure to PTEs together to understand how it may shape child development. Related to this point, it was found that parents' affective symptoms were a stronger predictor of child outcomes even than exposure to PTEs. This should be explored in future studies and in ways that help reduce reporting bias (i.e., parent-reported symptoms predicting parent-reported child outcomes).

Child emotional adjustment was found to moderate only partially the relationship between exposure to PTEs and social competence, and only in specific settings. To understand the relationship between exposure to PTEs and social competence better, it is necessary to test other potential moderators and perhaps meditational models too (particularly if exposure to PTEs is expected to be associated with a decline in children's social competence.) In carrying out this research, it is important to focus on third variables in the same vein as emotional adjustment, which can be targeted through intervention and be manipulated to bring about better child outcomes.

While the current study incorporates children's own views on their social competence, via peer acceptance and rejection, it does not include sociometric data

collected from the participating children's classmates and peers. Collecting this data,

particularly from very young children, would be very challenging; however, it is

presented here as a future direction because it could add a valuable dimension to the

social competence construct. Future research that examines the relationship between

exposure to PTEs and social competence would be strengthened not only by

incorporating children's own perceptions, but also the perceptions of their peers.

APPENDIX

TRAUMATIC EVENTS SCREENING INVENTORY – PARENT REPORT REVISED (TESI-PRR)

Listed below are a number of difficult or stressful things that sometimes happen to children. For each question, circle yes or no in the first column to indicate whether your child has experienced this **in his/her entire life**, and circle yes or no in the second column to indicate whether your child has experienced this **in the past year**.

	Has this happened to your child *in her/her entire life?*		Has this happened to your child *in the past year?*	
Has your child ever ***been in*** a serious accident where someone could have been (or actually was) severely injured or died? (e.g. serious transportation accident, fall, fire)	YES	NO	YES	NO
Has your child ever ***seen*** a serious accident where someone could have been (or actually was) severely injured or died? (e.g. serious transportation accident, fall, fire)	YES	NO	YES	NO
Has your child ever been attacked by a dog or other animal?	YES	NO	YES	NO
Has your child ever ***been in*** a natural disaster where someone could have been (or actually was) severely injured or died? (e.g. tornado, fire, hurricane)	YES	NO	YES	NO
Has your child ever experienced the severe illness or injury of someone close to him/her?	YES	NO	YES	NO
Has your child ever experienced the death of someone close to him/her?	YES	NO	YES	NO
Has your child ever undergone any serious medical procedures or had a life threatening illness, or any other medical problem that may have felt life-threatening to your child? Or been treated by a paramedic, seen in an emergency room, or hospitalized overnight for a medical condition?	YES	NO	YES	NO

Has your child ever been separated from you or another person whom your child depends on for love or security for more than a few days or under very stressful circumstances? (e.g. foster care, immigration, war, major illness)	YES	NO	YES	NO
Has someone close to your child ever attempted suicide or harmed him/herself?	YES	NO	YES	NO
Has someone ever physically assaulted your child, like hitting, pushing, choking, shaking, biting, or burning? Or punched your child and caused physical injury or bruises?	YES	NO	YES	NO
Has someone ever attacked your child with a gun, knife, or other weapon?	YES	NO	YES	NO
Has someone ever directly threatened your child with serious physical harm?	YES	NO	YES	NO
Has someone ever mugged or tried to steal from your child? Or has your child been present when a family member or other caregiver was mugged?	YES	NO	YES	NO
Has anyone ever kidnapped your child? (including a parent or relative)	YES	NO	YES	NO
Has anyone ever kidnapped someone close to your child? (including a parent or relative)	YES	NO	YES	NO
Has your child ever *seen or heard* people <u>outside your family</u> fighting, hitting, pushing, or attacking each other? Or *seen or heard* violence such as beatings, shootings, or muggings that occurred in <u>settings that are important to your child</u>, such as school, your neighborhood, or the neighborhood of someone important to your child?	YES	NO	YES	NO
Has your child ever *seen or heard* people <u>in his/her family</u> physically fighting, hitting, slapping, kicking, or pushing each other?	YES	NO	YES	NO
Has your child ever *seen or heard* people <u>in his/her family involved in violence using a weapon, such as</u> shooting with a gun or stabbing, or using any other kind of dangerous weapon?	YES	NO	YES	NO

Has your child ever *seen* someone use a weapon to threaten or hurt a family member?	YES	NO	YES	NO
Has your child ever *seen or heard* people in his/her family threaten to seriously harm each other?	YES	NO	YES	NO
Has your child ever *seen* someone hit, push, or kick a family member?	YES	NO	YES	NO
Has your child ever *known or seen* that a family member was arrested, jailed, imprisoned, or taken away (like by police,	YES	NO	YES	NO
Has your child ever been *directly* exposed to war, armed conflict, or terrorism?	YES	NO	YES	NO
Has your child ever *seen or heard* actual acts of war or terrorism (i.e. not movies)	YES	NO	YES	NO
Has someone ever made your child see or do something sexual (like touching in a sexual way, exposing self or masturbating in front of the child, engaging in sexual intercourse)?	YES	NO	YES	NO
Has your child ever been present when someone was being forced to engage in any sort of sexual activity?	YES	NO	YES	NO
Has your child ever repeatedly been told that he/she was no good, yelled at in a scary way, or had someone threaten to abandon, leave or send him/her away?	YES	NO	YES	NO
Has your child ever gone through a period when he/she lacked appropriate care (like not having enough to eat or drink, lacking shelter, being left alone when he/she was too young to care for him/herself, or being left with a caregiver who was abusing drugs)?	YES	NO	YES	NO
Has your child ever experienced a stressful event related to immigration?	YES	NO	YES	NO
Have any other stressful things happened to your child? (Please describe):	YES	NO	YES	NO

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