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Supportive and Intrusive Parenting During Early Childhood: Relations with Children's Fear Temperament and Sex

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Abstract

The current study examined the extent to which child sex and fear reactivity were linked to mothers' observed use of supportive and intrusive parenting behaviors. Two dimensions of observed fear reactivity were considered, distress (i.e., fearfulness) and approach (i.e., fearlessness). The sample consists of 160 predominantly African American, low-income families that included mothers, one sibling approximately two-years-old, and the closest aged older sibling who was approximately four-years-old. Results from fixed-effects within-family models indicate that above and beyond the main effect of child engagement on observed parenting behaviors, child sex moderated associations between two dimensions of fear reactivity and mothers' observed parenting. Specifically, mothers were observed to be less supportive during interactions with girls rated as high on fear approach, and more intrusive during interactions with girls rated as high on fear distress. These patterns suggest that during early childhood, girls' individual characteristics may be more closely linked to mothers' parenting quality than boys' characteristics.

Keywords

early childhood; economically disadvantaged; fear; parenting; sex differences; siblings; temperament

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The social stressors stemming from economic disadvantage are associated with increased levels of intrusive (i.e., harsh, parent-centered) and decreased levels of supportive (i.e., sensitive and responsive) parenting behaviors (e.g., Conger & Donnellan, 2007). Experiencing less supportive parenting and more intrusive parenting increases risks for developing preschool behavior problems (e.g., Shaw, Gilliom, Ingoldsby & Nagin, 2003). Beyond the influence of contextual stressors associated with socioeconomic disadvantage, parenting behaviors also result from mutually reinforcing interactions, such that parents and children influence each other. Sources of variation in parent-child interactions are best studied using within family models because these models account for parenting by the same parent of multiple siblings within the family (Jenkins, McGowan & Knafo-Noam, 2016). In the present study, we consider how two child characteristics, fear temperament and child sex, are linked to the quality of parenting children receive among a predominantly African

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American low-income sample. We build upon existing research by applying within-family models of mothers' parenting observed during interactions with toddler and preschool-aged siblings to rigorously test interactive influences of child sex and observed fear reactivity on mothers' supportive and intrusive parenting behaviors.

Child Fearful Temperamental Characteristics and Parenting Behaviors

Temperament is a complex, multidimensional concept which includes individual differences in emotional reactivity (e.g., positivity, negative affect, fear, and sadness) and regulation (e.g., approach vs. avoidance; Posner & Rothbart, 2000). Children's temperamental characteristics are linked to parenting quality. For example, high levels of temperamental reactivity and negative affect have been associated with exposure to harsher and less positive parenting (del Vecchio & Rhoades, 2010). More specific to the present study, fearful temperament may be a particularly salient child characteristic in economically disadvantaged contexts. In the present study, we considered children's *fearfulness* measured by the intensity of their expressions of distress, and their *fearlessness*, measured by the intensity of their approach behaviors, during an observational fear paradigm.

Children show variability in fear responses. Fear distress, or *fearfulness*, is characterized by negative emotional reactions to typical fear-evoking situations (Posner & Rothbart, 2000). In contrast, *fearlessness* is indexed by high levels of approach behaviors during situations that typically produce a fear response (Hirshfield-Becker et al., 2003; Waller, Shaw & Hyde, 2016). Fearlessness and fearfulness are not two ends on a spectrum of fear responsivity because they tap into different aspects of temperament (i.e., reactivity versus regulation) and levels of physiological arousal (Kiel & Buss, 2014; Posner & Rothbart, 2002). Fear distress and fear approach work together to influence child development because they simultaneously contribute to child behaviors in fearful situations (Colder et al., 2002), but they may be uniquely linked to parenting because they require different parental responses to manage children's behavior.

Fearful reactions likely evoke distinct patterns of parenting responses. For example, Wilson and Durbin (2012) reported that three to six year-old children who showed more fear reactivity in general during observational assessments had mothers who made fewer social bids and were less responsive to children's bids during dyadic interactions. Mothers also have been found to respond to their children's fearfulness with intrusive and over-protective behaviors, thus minimizing children's responses and opportunities to regulate their own emotions (Kiel & Buss, 2011; Rubin et al., 2002). While parents may intend to protect their children by discouraging fear reactions that have negative social and immediate personal implications, or by sheltering their children from experiencing this distress, unsupportive or intrusive parenting behaviors increase risks for maladaptation over time for children fearful (Kiel & Buss, 2010) and fearless (Waller et al., 2016) children by undermining healthy emotion regulation development and social interactions. Thus, parental responses are inextricably linked to dyadic processes that increase the risks for problematic development.

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Fear Reactivity and Parenting in Economically Disadvantaged Communities

Parent-child interactions are influenced by social contexts. Economically disadvantaged parents, especially African American parents, face unique challenges in raising their children and likely adapt their parenting, including their responses to children's characteristics and behaviors, to match the demands of the environment (e.g., Garcia Coll et al. 1996). For example, parents may discourage expressions of sadness because in urban, dangerous neighborhoods, sadness may communicate vulnerability (Nelson et al., 2012; O'Neal & Magai, 2005). When parents show discouraging responses to children's negative emotional expressions, their behaviors could be perceived as generally intrusive (i.e., parent-centered) and unsupportive. How parents respond to the fearless or fearful reactions of their children influences their children's social adjustment.

Parents of children residing in socioeconomically disadvantaged or dangerous contexts, may actively attempt to inhibit their children's approach behaviors, or fearless behaviors, in an effort to protect their children from entering potentially harmful and dangerous situations. Mothers also may be especially likely to discourage fearlessness if the risks of engaging with fear-inducing situations are quite dangerous. Moreover, children high in fearlessness may be unlikely to learn the negative consequences of harmful behavior (Waller et al., 2016), suggesting they may require more adult behavioral control. As a result, fearless children may require vigilant attending by mothers and fearless/high approach child behaviors may evoke more harsh control and less supportiveness. Similarly, children who show high levels of fearfulness, manifested as distress, may also be at increased risk for victimization and pose unique challenges for mothers. Mothers of fearful children may attempt to actively discourage distress reactivity or shield their children from situations in which children may be perceived as vulnerable targets. Thus, dangerous contexts may pose unique challenges for mothers of either fearless or fearful children, but both reactions from children may evoke harsh, controlling and unsupportive parenting behaviors that are designed to punish approach or stop distress.

Among economically disadvantaged mothers who are likely facing multiple stressors, child characteristics that present caregiving challenges may influence the quality of parenting. For example, Chang and Fine (2007) reported that among a large sample of low-income mothers, children's difficult temperament, above and beyond other individual and contextual stressors, differentiated mothers with parenting stress trajectories that increased from toddlerhood to preschool from those whose trajectories decreased during this time. Further supporting links between maternal stress, parenting responses and child temperament, Kiel and Buss (2013) reported that among a middle class sample of mothers of toddlers, children's observed inhibited temperament was positively associated with observed intrusive parenting only among mothers with cortisol response patterns reflecting high stress reactivity. Most research considering how child temperament characteristics are linked to caregiving quality have focused on negative reactivity in general, rather than focusing specifically on fear reactivity. In high-poverty urban settings, such as the setting for the present study, child fear reactivity may be a particularly salient influence on mothers' behaviors. A comprehensive approach to linking children's characteristics to parenting behaviors must account for interactions among multiple child characteristics. In the present

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study, we consider how child sex may influence parenting independently and in interaction with fear reactivity.

Child Sex Differences in Temperament and Parenting Quality

Evidence regarding child sex-based differences in mothers' parenting is mixed (see Leaper (2002) for a review). In general, mothers tend to be more supportive and engaged during interactions with their daughters than with their sons, but the magnitude of the sex difference is typically small, particularly in unstructured settings (Leaper, 2002). However, these studies primarily only consider child sex differences and ignore other child characteristics, like temperament, that may interact with child sex to influence parenting behaviors. In general, girls have been found to evidence more temperamental fearfulness than boys, especially when observational ratings rather than parent reports are used (Chaplin & Aldao, 2013; Olino et al., 2012). Girls may evidence more fearfulness because parents are more tolerant of fearful displays in daughters rather than sons (e.g., Root & Denham, 2010). For instance, Buss and colleagues (2008) found that two year-old boys, but not girls, with higher fear responses displayed more proximity seeking behaviors during interactions with their mothers, yet mothers were observed to be less responsive when their sons showed signs of high intensity fear. To date, most of the research on mothers' responses to children's emotional expressions is limited to White, middle-class samples, despite the fact that socialization responses likely vary according to sociocultural norms of appropriate gender-typed behavior (Chaplin et al., 2010; Nelson et al., 2012). Both sociocultural norms and sociocontexual demands (e.g., neighborhood disadvantage) may affect how parents respond to the fear-related behaviors exhibited by their sons and daughters.

Contextual Influences on Parenting Quality and Child Sex and Temperament Links

Recent theoretical and empirical work suggests that African American mothers may parent their sons and daughters differently, and that these differences may partially account for sex differences in behavior and achievement (e.g., Barnett & Scaramella, 2013; Mandara, Murray, Telesford, Varner, & Richman, 2012). While all parents use socialization practices aimed at preparing their children to navigate successfully the cultural and societal challenges they will likely face, ethnic minority parents face multiple contextual risks and may use parenting practices that promote optimal development in the face of racism, discrimination and restricted opportunities (Garcia Coll et al., 1996). Given increased risks that low-income African American boys face as compared to girls regarding poor school achievement, increased behavior problems, and greater exposure to discrimination, violence and distrust, adaptive parenting by African American mothers may involve different expectations and socialization goals for their sons than for their daughters (e.g., Hill, 2002; Hughes et al., 2006).

African American mothers have been found to use more warm and supportive behaviors with daughters and more controlling behaviors with sons (Barnett & Scaramella, 2013; Mandara et al., 2012; Tamis-LeMonda et al., 2009), perhaps to actively control their sons' behavior and to prevent achievement and behavior problems. For example, within a sample

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of African American six to seven year-old children, Tamis-LeMonda and colleagues (2009) reported that mothers were less sensitive and more controlling with boys than girls. Further, based on observations of African American mother-child preschool aged dyads, Barnett & Scaramella (2013) reported that mothers were more supportive with daughters than sons. The present study extends this work by considering child sex effects on parenting in the context of other child characteristics, specifically fear reactivity.

Given greater exposure to racism and discrimination that African American boys as compared to girls likely experience (e.g., Mandara et al., 2012), African American mothers may respond more strongly to fear reactivity from their sons than their daughters. For example, Nelson and colleagues (2012) found that African American mothers of 5 year-old boys perceived more negative consequences for expressions of submissive emotions and reported more unsupportive responses to those emotions than African American mothers of girls and as compared to White mothers of boys and girls. At the same time, African American mothers of boys may be particularly concerned that their sons' fearlessness will lead to danger. Clearly, sociocultural differences in maternal responses to children's fear temperament is understudied.

Even less research has considered sociocontextual demands and parenting responses to fear. A number of possible scenarios may explain mothers' responses to variations in their children's fear expressions. Fearful reactivity may be perceived as a liability in an impoverished, violent neighborhood, especially for boys. Combined with sociocultural norms which discourage fear expressions in boys, mothers may be more prone to strong negative reactions to their sons' fearfulness, particularly distress, because such emotional reactions may communicate vulnerability and weakness. Excessive fearlessness also may be discouraged by mothers as fearless behaviors may place their sons in dangerous, violent situations. Alternatively, low-income mothers may show little gender differentiation in their responses to children's fear, as they may encourage all children to be tough and wary in order to stay safe in dangerous neighborhood contexts (Chaplin et al., 2010).

Goals of the Present Study

The present study examined whether levels of mothers' observed supportive and intrusive parenting varied as a function of child sex and fear reactivity using a within family sibling design. Within family sibling designs provide a rigorous test of child sex differences in parenting because the extent to which parents interact similarly with children of various ages and sexes can be empirically evaluated, while controlling for factors that are constant across siblings (e.g., maternal stressors related to economic disadvantage; Conley, Pfeiffer & Velez, 2007; Jenkins et al., 2016). We test these within family models in a predominantly low-income African American sample in which fear responses may be particularly salient to mothers. Mothers in the present sample report frequent exposure to neighborhood danger. For example, reflecting on the last year, 72% reported cars were speeding, 56% reported adults argued loudly, 54% indicated neighbors complained about crime, 48% saw strangers drunk or high near their homes, and 37% witnessed drug deals. The following two hypotheses were evaluated.

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Hypothesis 1: Higher levels of fear distress (i.e., fearfulness) and higher levels of approach (i.e., fearlessness) will be associated with less supportive parenting and more intrusive parenting because these child behavioral tendencies may present challenges to parents, and parents may be concerned that more fearful children may be perceived by others as easy targets for victimization, while more fearless children may be more likely to place themselves in dangerous situations.

Hypothesis 2: Child sex will moderate the expected associations between fear reactivity and observed parenting. Mothers may have considerable concerns for the welfare of their sons if those sons respond in gender atypical ways (i.e., high fear distress reactivity), or in ways that may evoke danger (i.e., actively approaching a fearful situation). We expected the magnitude of the association between parenting quality and fear reactivity to be stronger among boys than girls. Specifically, we hypothesized that lower levels of supportive parenting and higher levels of intrusive parenting will be associated with more fearfulness and fearlessness for boys only.

Method

Participants

Participants (*N* = 160 families; 320 children, 160 mothers) were from a study of families recruited from urban Head Start centers when younger siblings were approximately 24-months-old and older Head Start-enrolled siblings were 3–4 years-old. Children averaged 24 (younger child: mean = 24.16 months; SD = 1.77 months) and 49 months (older sibling: mean = 49.00 months; SD = 7.63 months) of age. The sample consisted of 146 boys and 174 girls, including 90 mixed-sex pairs. Families were predominantly African American (91%) and low-income (mean income-to-needs-ratio = 1.06, SD = 0.70). Mothers averaged 25.33 years (SD = 3.36), and 76 percent of mothers earned a high school diploma or GED. Approximately 44 percent of mothers were married or living with a romantic partner.

Procedure

All study procedures were approved by the Institutional Review Board of the affiliated researchers. Mothers completed questionnaires, and mothers and children participated in a filmed observational assessment lasting approximately one hour in the participants' homes. The present study includes data collected during one of the family interactional tasks and one of the child temperament tasks. In order to keep each child blind to the assessment activities and the reactions of siblings and/or mothers, children who were not participating in an activity were supervised by a project babysitter who set up a small pop-up tent such that the opening of the tent faced away from the assessment area. The tent was filled with new, attractive, and age-appropriate toys. Families were positioned so that mothers could see the tent and the babysitter at all times, but the child playing in the tent could not see the activity. Similarly, the child participating in an activity was unable to see activities inside the tent.

Parenting behaviors were observed from a matching game that mothers and children played together. The task was designed to be developmentally appropriate and ecologically valid for families with two preschool-aged siblings. The game was played with pretend plastic

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sandwich cookies that were separated. Players were each given 6 cookies that had a raised shape. Players then took turns picking a cream side cookie, which had matching shapes cut out of the cream. Once a cream cookie was selected, the player looked for a corresponding match with their own cookies. If the player made a "match" the two cookie sides were snapped together, and the player received a point. If the player did not have a match, the cream side went back into the jar and the other player took a turn. Mothers were first instructed how to play the game, and then given three minutes to teach the younger child the rules. If dyads completed the activity before three minutes were up, mothers were told to replay the game. The interviewer returned after three minutes with the older sibling. For the next three minutes, mothers were instructed to moderate the play between the two children and to keep score. The task was more difficult for the younger child than the older child. Notably, this approach to measuring parenting behaviors has been used (Barnett & Scaramella, 2013; 2015; Riley, Scaramella & McGoron, 2014) to predict concurrent and longitudinal levels of problem behaviors in the older and younger siblings in other studies.

Children's fear reactivity was measured during a two-minute structured fear task derived from the Laboratory Temperament Assessment Battery for preschoolers (Goldsmith et al., 1999) that is commonly used in early childhood research (e.g., Buss, 2011; Kiel & Buss, 2014). Mothers were not present during the task. Younger children completed the fear activity first and older siblings were assessed separately following identical procedures. Children who were not participating in the specific activities were blind to the assessments because they were supervised by a project babysitter playing with a variety of toys in a mini-pop up tent. Before beginning the fear reactivity task, children were instructed to sit on a designated spot on a floor mat and a remote control robot was placed approximately 18 inches from the child. The interviewer first turned the robot in a circle for approximately 30 seconds, and then paused for 15 seconds. Next, the robot roared 4 times (approximately 30 seconds in duration), then paused for 15 seconds. Finally, interviewers moved the robot to a spot approximately six inches from the child and then backwards to the end of the mat. This was repeated once (approximately 30 seconds). Interviewers then turned off the robot, informed the child that the robot was turned off, and invited the child to touch the robot. This task is designed to elicit diverse responses that highlight individual differences in children's reactivity in general, and more specifically in relation to fear-inducing situations. Importantly, this task has been shown to elicit high levels of fear in samples of toddlers and preschoolers (e.g., Buss, 2011), and thus responding with fear distress and lack of approach behaviors may be considered normative responses.

Measures

Mothers' supportive and intrusive parenting behaviors—Mothers' parenting behaviors were assessed during the matching task. Global observational ratings of mothers' parenting behaviors directed towards each child were made on six 7-point global rating scales revised from scales developed in the NICHD Study of Early Child Care and Youth Development (SECCYD) NICHD Early Child Care Research Network, 1999): sensitivity/responsiveness, intrusiveness, detachment/disengagement, positive regard for the child, negative regard for the child, and stimulation of cognitive development. Trained reliable coders, who were blind to other information about the families, scored the interactions for

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maternal behavior. Mothers' behaviors directed towards the younger and older child were coded separately by different coders. Mothers' behaviors toward the younger child was coded from the three-minute phase when the mother instructed the younger child about the game, and parental behavior toward the older child was coded from the three-minute phase during which two children played the game. Two criterion coders trained all other coders until excellent reliability (intra-class correlation (*ICC*) > 0.80) was maintained for each coder on each scale. Once reliability was met, a random selection of 30 percent of all interactions was double-coded. For those double-coded cases, each coding pair met to reconcile scoring discrepancies, reaching a final consensus score for each scale. The Inter-rater reliability (*ICC*) for those double-coded cases were as follows for the younger and older child, respectively: sensitivity/responsiveness = .91, .82; positive regard = .86, 80; cognitive stimulation = .86, .77; intrusiveness = .84, .83; and negative regard = .88, .86.

The supportive parenting composite (α = .73 for the younger child, and .74 for the older child) represents the mean of sensitivity/responsiveness, positive regard and cognitive stimulation scales. Higher scores on supportive parenting indicate parenting that is in-tune with the child, child-centered, aware of and responsive to the child's cues, warm, and appropriately stimulating. The intrusive parenting composite (α = .71 for the younger child and .66 for the older child) represents the mean of intrusive and negative regard (i.e., negative affect directed at the child) scales. Higher intrusive scores indicate parenting behaviors that are parent-centered, harsh, controlling, affectively negative and overly stimulating. These interactions may include parenting behaviors that focus on teaching the game or playing according to the mothers' rules, rather than responding to the child's abilities and interests.

Children's Engagement—Coders rated children's level of engagement with the mother during the same matching task in which mothers' parenting behaviors were measured using the same coder training and reliability procedures as described above. Child engagement was from the single child engagement scale in the NICHD SECCYD (NICHD Early Child Care Research Network, 1999). Children's behaviors were rated on a 7-point scale indicating the degree of the child's positive engagement with the mothers during the task. Higher scores indicate interactions in which the child was positively engaged with the mother, as evidenced by initiating, reciprocating and sustaining positive engagement with the mother. Children were assigned higher engagement scores if they repeatedly attempted engagement with the mother even if the mother was nonresponsive. Two criterion coders trained all other coders until excellent reliability (intra-class correlation (*ICC*) > 0.80) was maintained for each coder on each scale. Once reliability was met, a random selection of 30 percent of all interactions was double-coded. Inter-rater reliability was *alpha* = .93 for the younger child, and .80 for the older child. T-tests ($t = -1.11$ [318], $p < .01$) showed that younger children displayed lower mean levels of engagement than older children.

Children's fear reactivity—Trained coders rated children's fear reactivity as observed during the filmed robot task. The intensity of children's distress as well as behaviors reflecting approach were coded for three 10 second intervals across the three 30 second epochs (i.e., turning, roaring, still close to child). Inter-rater reliability was measured using

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Krippendorff's alpha (Hayes & Krippendorff, 2007) based on 25 percent of cases that were rated by two independent coders. The peak scores for distress and approach behaviors across the epochs were computed by averaging the peak rating from each of the three epochs.

Inter-rater reliability for the intensity of *distress* scale was .91 for the younger child and .76 for the older child. Distress vocalizations are restricted to children's communication of distress through verbalizations and vocalizations of anger, sadness, or distress. Negative vocalizations were rated on a 4-point scale ranging from 0 (no signs) to 3 (very intense). Inter-rater reliability estimates for the *approach* scale were .62 and .78 for the younger and older child, respectively. Ratings of the presence of approach behaviors also were made on a 4-point scale from 0 (no signs; standing still), to 1 (low; leaning or turning towards the robot), to 2 (mild; reaching or walking towards, to 3 (moderate/high; making neutral or positive physical contact with the robot). The scores in the two domains showed a consistent pattern of correlations across child age and gender. For example, across the entire sample scores for fear approach were only nominally correlated with fear distress ($r = -.18$, $p < .05$). Younger siblings were observed to have statistically significant higher fear distress scores and lower approach scores than older children. The mean score for distress reactivity for the younger child was 1.92 (SD = 1.07), indicating that there was considerable variability in distress reactivity. In contrast, the mean distress reactivity score for the older siblings was 1.12 (SD = 0.74), indicating generally less distress reactivity. Likewise, the mean approach scores were 1.50 (SD = 1.38) for the younger child, and 2.82 (SD = 0.64) for the older sibling.

Analytical Plan

Random effects regression models with Restricted Maximum Likelihood Estimates (REML) were computed to test study hypotheses. Multi-level modeling techniques extend multiple regression models and account for the possible non-independence of within-family data. In this case, siblings are nested within families. Failing to account for this nesting of data could lead to inflated standard errors and inaccurate parameter and model fit estimates (Bryk & Raudenbush, 1992). All continuous independent variables were grand mean centered. In order to examine the unique contributions that children's fear reactivity may make to mothers' observed parenting behaviors, we also considered children's observed levels of engagement with the mother during the semi-structured task. That is, we controlled for more proximal, concurrent child behaviors in order to test how fear reactivity observed in a separate task may be linked to mothers' interactive behaviors. Specifically, we examined the extent to which child engagement was directly associated with mothers' parenting behaviors. We also accounted for the extent to which child age explains systematic variation in parenting.

Two separate multi-level models with identical predictors were computed using IBM SPSS Statistics (v. 24) to model supportive and intrusive parenting behaviors. While we included marital status and income-to-needs ratio in the models as level-2 (family-level) covariates, neither variable was related to any of the dependent variables, and their inclusion failed to change the results. We dropped both variables from analyses for parsimony and to enhance statistical power. All of the independent variables included in the final model were level-1

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(individual child) variables. These measures were child sex, child age, child engagement, fear reactivity (distress and approach), and fear reactivity X child sex interactions. All continuous independent variables were centered prior to computing interaction terms. All statistically significant interactions were interpreted using standard pick-a-point techniques, which have been validated in multi-level models (Preacher, Curran & Bauer, 2006).

Results

As shown in Table 1, descriptive statistics were calculated separately for girls and boys and older and younger siblings, and means were compared across sex and across siblings using *T*-tests. On average, mothers demonstrated more support during interactions with girls than boys, and more intrusion with boys than girls. Importantly, these differences held across the younger and older siblings. In addition, girls were observed to be more engaged during the interaction with mothers among older and younger siblings. No sex differences in the means of observed fear distress or approach emerged.

Table 2 presents the results of the correlational analyses separately for girls and boys. In general, similar patterns of associations emerged. Intrusive and supportive parenting scores were inversely related for girls and boys. Further, child engagement was positively related to supportive parenting and inversely related to intrusive parenting for boys and girls. Fear distress was statistically significantly and positively correlated with mothers' intrusive parenting for girls and boys. Table 3 summarizes the results of correlational analyses separately for older and younger siblings. The patterns of correlations were similar for older and younger siblings, as supportive and intrusive parenting were inversely associated, and fear approach was unrelated to parenting. Fear distress was positively correlated with intrusive parenting for older siblings, but a Fisher r-to-z transformation ($z = 1.17$, $p = .12$) indicated that the correlations did not vary by child age. Only among younger siblings were fear approach and fear distress negatively correlated; a Fisher r-to-z transformation supported this conclusion ($z = -2.45$, $p < .05$).

Hypothesis testing using multi-level regression equations

Next, we describe the results of the multi-level modeling analyses predicting supportive parenting and intrusive parenting.

Supportive Parenting—Results of the unconditional-means model predicting supportive parenting indicated systematic nesting of supportive parenting within family. Statistically significant between family ($\tau_{00} = 0.14$, $z = 2.56$, $p < .01$) and within family (i.e., between sibling; $\sigma^2 = 0.78$, $z = 8.25$, $p < 0.001$) variance in mothers' supportive parenting emerged. The intra-class correlation (ICC) coefficient indicates that approximately 15 percent of the observed variance associated with supportive parenting was explained by between family variance, suggesting that most of the variability in supportive parenting is explained by differences in parenting within families.

Next, as shown in Table 4, child age, child sex, child engagement, the two measures of fear reactivity, and terms representing interactions between measures of fear reactivity and child sex were added to the model. Again, statistically significant within individual ($\tau_{00} = 0.15$, z

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= 2.51, p < .01) and within family (i.e., between sibling; σ^2 = 0.45, z = 7.81, p < 0.001) variation persisted. There were main effects of child engagement, which was positively associated with supportive parenting, and child age, which was inversely associated with supportive parenting. A statistically significant interaction between child sex and fear approach predicting mothers' supportive parenting emerged. The interaction term was decomposed by estimating the simple slopes of the association between fear approach reactivity and supportive parenting separately for boys and girls. As shown in Figure 1, approach was inversely associated with supportive parenting for girls (b = − 0.15, *p* = .04), but not for boys (b = 0.05, *p* =.51). That is, when girls were observed to display higher levels of fear approach behaviors in one context, their mothers were observed to exhibit less supportive parenting in a different context. At low and mean levels of fear approach, mothers used similar levels of supportive parenting with boys and girls, suggesting that for girls the supportive parenting advantage fades as fear approach increases. Examination of Regions of Significance, calculated by reversing the roles of child sex and fear approach such that the continuous variable (fear approach) was the moderator, indicated that the region of significance for fear approach was [.30 – 19.54]. Given the range of fear approach on the mean-centered scale ranged from −1.73 to 0.66, this means that the interaction between child sex and fear approach holds only at high observed values of fear approach. Consistent with the above interpretation, there are no differences in links between fear approach and supportive parenting for boys and girls who exhibit low fear approach (i.e., low fearlessness).

Intrusive Parenting—The unconditional means model predicting intrusive parenting indicated considerable within family variability (σ^2 = 1.33, z = 8.18 p < 0.001). However, the random intercept component was not statistically significant, indicating that all variability in the intrusive parenting individual children experienced was explained by child-level predictors. That is, no systematic nesting of intrusive parenting within families emerged; mothers did not use intrusive parenting with both of her children at similar levels.

Like the supportive parenting analyses, the next model considered the same set of independent variables to predict intrusive parenting. The random effects results indicated that the statistically significant within (σ^2 = 0.96 z = 7.98, p < 0.001) family variation was reduced, but not to non-significance. Consequently, unconsidered variables explain within family variation in intrusive parenting. Children who were more engaged and older experienced less intrusive parenting. Results also indicated a statistically significant interaction between child sex and fear distress. Following the same procedures used with supportive parenting, the interaction effect was decomposed. Children's observed fear distress was positively related to mothers' observed intrusive parenting for girls only. Specifically, as shown in Figure 2, more observed fear distress was linked to increased intrusive parenting exposure for girls (b = 0.22, *p* = .04), but not for boys (b = −0.02, *p* = . 85). The Region of Significance for fear distress was [1.23 – 3.31], indicating that sex differences in the association between fear distress and intrusive parenting were only observed at high values of fear distress, which ranged from −1.48 to 1.51 on the mean-centered scale. Similar to the results reported for supportive parenting, high fear distress

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reactivity seems to diminish any advantages girls had in exposure to intrusive parenting in comparison to boys.

Discussion

The present study considered the links between two child characteristics, sex and fear temperament, and mothers' observed supportive and intrusive parenting behaviors. We extended existing research in several important ways. First, we hypothesized that mothers' supportive and intrusive parenting would vary according to both the sex of her child and two different aspects of fear temperament (i.e., fearfulness and fearlessness). Second, we evaluated these hypotheses among economically disadvantaged, predominantly African American families with toddler and preschool aged children. Associations among children's fear reactivity and mothers' parenting behaviors were found to vary by child sex, although not as expected.

Researchers have speculated that parents socialize their sons and daughters differently, however, empirical work is generally inconclusive. One possible explanation for the lack of consistency in findings could be methodological. For instance, in the present study, when we used simple mean comparisons, boys were found to experience less supportive parenting and more intrusive parenting than girls. However, using the more rigorous within family regression analyses revealed that mothers treated their sons and daughters similarly within the same family. That is, no sex differences in exposure to supportive or intrusive parenting emerged.

Instead, parenting behaviors vary in accordance with unique combinations of child characteristics, which include both child sex and temperament. That is, parenting behaviors are differentially linked to temperamental characteristics in sons and daughters. In support of this perspective and contrary to our first hypothesis, neither fear distress nor fear approach were directly associated with levels of mothers' observed supportive or intrusive parenting in the multivariate models that included interactions between child sex and fear temperament. Child sex interacted with fear reactivity propensities to influence mothers' supportive and intrusive parenting. Again, not as expected, differences in children's fear responses were associated with systematic variations mothers' observed parenting only for girls. Specifically, mothers were observed to use harsher parenting (i.e., more intrusiveness) with daughters who, when confronted by a fearful situation in another context, responded with negative affect (i.e., fear distress). Additionally, mothers were observed to be less supportive with daughters who displayed more positive or surgency-related behaviors (i.e., fear approach) during a fearful situation observed in another context. Since there were no mean differences between boys and girls on fear distress and fear approach, mothers seemed to respond to the same temperamental characteristics of their sons and daughters differently. Furthermore, these findings emerged even after controlling for children's overall engagement with the mother during the task.

These findings extend other research on African American families examining sex differences in parenting. In general, African American mothers have been found to use less supportive and more negative parenting behaviors with boys in comparison to girls (Barnett

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& Scaramella, 2013; Mandara et al., 2012; Tamis-LeMonda et al., 2009). In this study, any advantages in exposure to more optimal parenting did not exist for girls with higher levels of fearfulness or fearlessness. Therefore, mothers may in fact be more sensitive to differences in fear temperament in their daughters than in their sons. That is, when girls display behaviors that make them more challenging to manage, mothers, especially those in the present economically disadvantaged sample who were likely facing multiple stressors, display less optimal parenting quality. Although fear was observed in a different context from parenting, it could be that children rated as high on fear distress make mothers more cautious about eliciting this distress, and therefore exert more parent-centered control. On the other hand, children with more fearless behaviors may exhibit lower-levels of arousal in general (Colder et al., 2002), and thus elicit less positive feedback and support from mothers. Alternatively, mothers may be more protective of their daughters with greater fear reactivity, both fearfulness and fearlessness, and this protective parenting may manifest as parent-centered parenting that is both low on supportiveness and high on intrusiveness (Kiel & Buss, 2010; 2011; 2014). Given the cross-sectional nature of the data, girls exposed to more intrusive and less supportive parenting may display greater fear reactivity, thus suggesting girls are more sensitive to the quality of parenting in terms of development of fear responses.

The findings from this study stand in contrast to emerging research reporting that mothers may be less supportive of their sons when they regularly exhibit fearful or submissive emotions (Nelson et al., 2012; O'Neal & Magi, 2005; Root & Denham, 2010). However, other studies have not considered these questions among economically disadvantaged, urban African American families, nor have they used a within family approach, relying instead on comparing parental responses across different mothers of boys and girls. Given the prevalence and formativeness of fear reactions during early childhood (e.g., Buss et al., 2008), parents have ample opportunities to socialize fear responses. Although the youngest children were only two-years old, in this high-risk setting, children were likely to have already encountered multiple fear-evoking situations, and mothers have likely already engaged in multiple responses that in turn have influenced children's current levels of fear reactivity.

The positive association between fear distress observed during a fear paradigm and mothers' intrusive parenting observed during a matching game suggests that girls with high levels of distress reactivity, who may need the most parental guidance and responsiveness, actually received the most intrusive parenting. In other words, this intrusive behavior may unintentionally exacerbate risks for maladaptive regulation (Barnett & Scaramella, 2015; Gilissen et al., 2008; Rubin et al., 2002). Gilissen and colleagues (2008) reported that temperamentally fearful four year-old children had the highest levels of physiological reactivity to fear-eliciting videos when they also experienced poor quality mother-child interactions.

In contrast to our expectations, girls who evidenced higher levels of observed fear approach during a fear task received the least supportive parenting from mothers during a matching game. In other words, mothers were less responsive to their daughters who exhibited more assertive and less intimidated (i.e., fearless) behavior during a separate fear-evoking

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situation. Perhaps these children defied mothers' gender-based expectations for their children's fearful responses, and thus mothers did not encourage these behaviors. Replicating this study in more advantaged samples, and tapping fear responses in more naturalistic situations may further illuminate the processes underlying the present pattern of findings. Importantly, recent longitudinal research reports that children characterized as high on fearlessness who are exposed to low-levels of supportive parenting in toddlerhood are at greater risk for displaying early childhood behavior problems (Barnett & Scaramella, 2015) and callous-unemotional traits later in development (Waller et al., 2016).

Study Strengths and Limitations

The present study has a number of strengths and limitations. First, the sibling design provided a rigorous test of child sex and temperament differences in mothers' parenting behaviors. Second, few other studies simultaneously consider the influences of two different dimensions of observed fear responsivity along with an observed global child behavior (i.e., engagement) on parenting behaviors. Different patterns of statistical significance emerged for approach versus distress in the fear task and engagement observed during the mother-child task, indicating that mothers' parenting is linked to children's specific behaviors (approach vs. distress) rather than an overall reactivity level. Third, shared method variance was virtually eliminated because independent observers rated mothers' parenting towards each sibling and each sibling's distress reactivity.

Despite these strengths, the study includes some limitations. First, the direction of effects is unclear. Specifically, mothers' parenting and children's fear responses were measured at the same time point. Although temperament characteristics are generally considered to be biologically-based individual traits present from birth, these levels of reactivity are somewhat plastic early in life (e.g., Posner & Rothbart, 2000). Determining if girls' approach responses and boys' distress responses evoked mothers' parenting, or if fear responses were a product of mothers' parenting is not possible. Moreover, parenting and fear were measured in different contexts. Future research should include longitudinal measures of parent and child behaviors. Second, although developmentally and ecologically valid, the parenting observation paradigm was in fact different for the older and younger siblings, and thus we are unable to make direct comparisons between mothers' parenting of one sibling versus the other sibling. Importantly, interactions between child sex and fear temperament held independent of child age. Third, we did not include measures of fathers' parenting. Finally, the results may not generalize to ethnically diverse and socioeconomically advantaged and samples.

Implications of the Present Study

The need to examine sex-specific pathways for risk and protection among children growing up in African American economically disadvantaged families is clear. Culturally and contextually sensitive intervention programs that work with mothers to build skills to respond to their sons' and daughters' individual temperament characteristics in ways that foster positive parent-child relationships may be particularly effective in promoting optimal parenting. Importantly, emerging research has focused on how parenting behaviors and children's temperament, including fear, interact to influence child development trajectories,

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with less focus on how those parent-child transactions may begin early in life. A greater understanding of parents' motives for engaging in specific behaviors with individual children is necessary to design effective intervention programs that are aligned with parenting goals and child needs.

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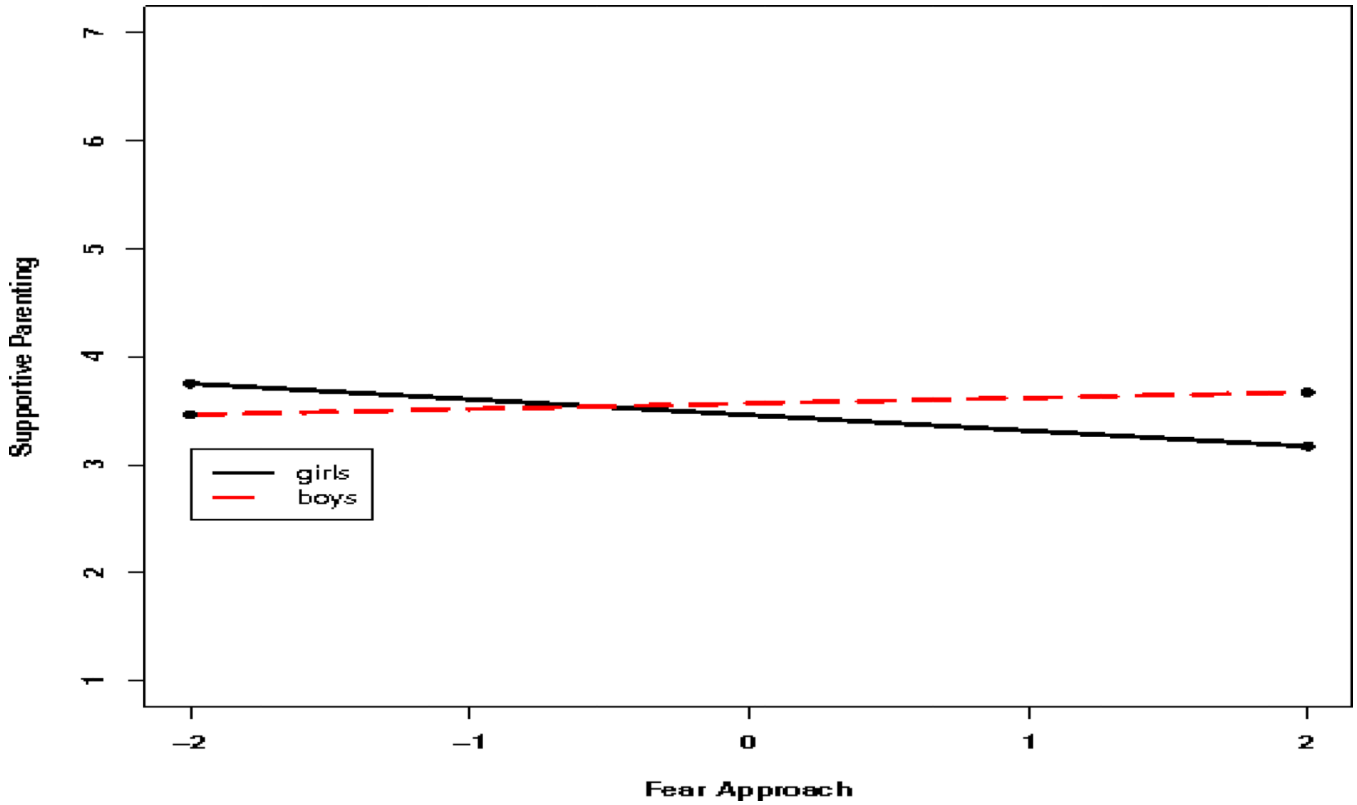

Figure 1.
Child Sex Moderates the Association between Fear Approach and Supportive Parenting.

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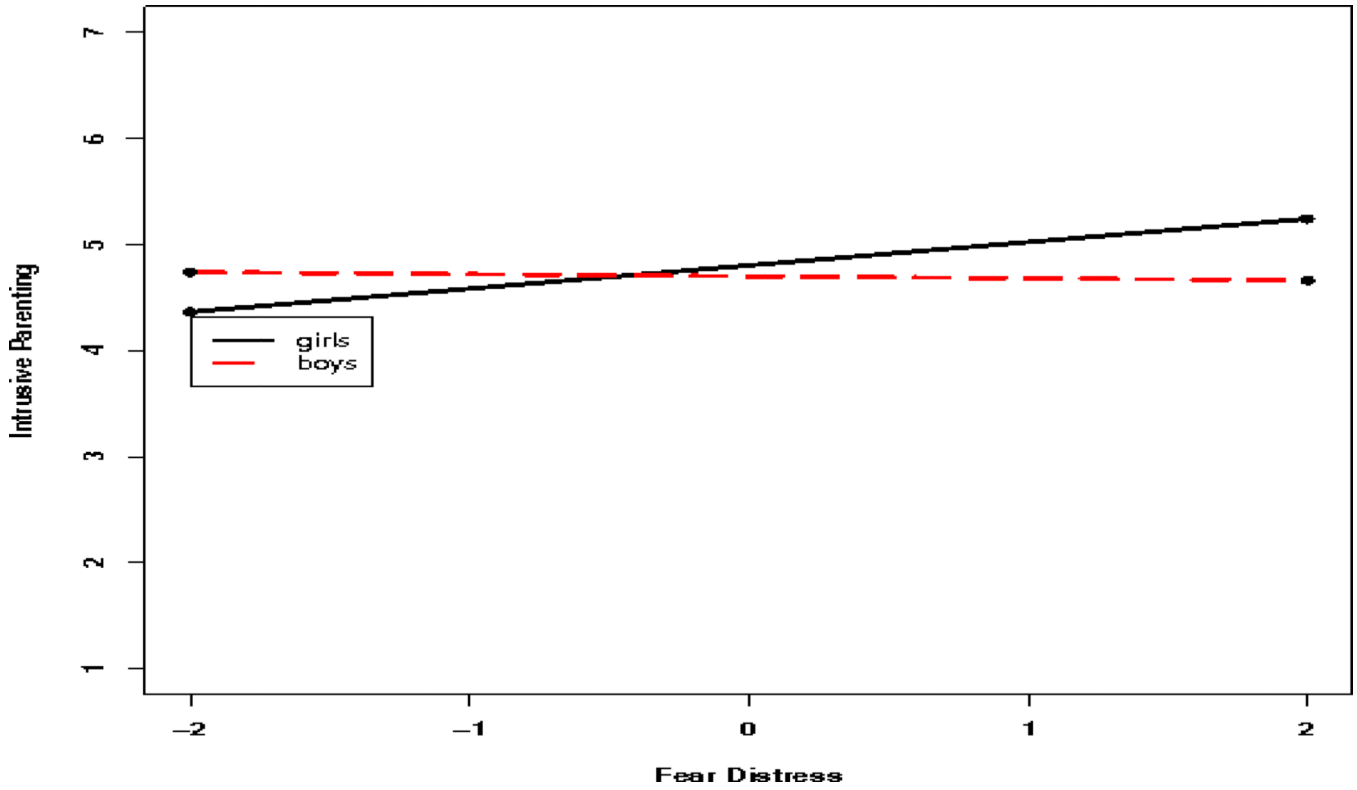

Figure 2.
Child Sex Moderates the Association between Fear Distress and Intrusive Parenting.

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Table 1

Means and standard deviations (SD) of study constructs by child age and sex.

	Younger Girls		Younger Boys		Older Girls		Older Boys		Total	
Variable	**M**	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**
Supportive Parenting [a,b,c]	3.29	1.02	2.74	0.96	3.36	1.02	2.67	0.93	3.05	1.23
Intrusive Parenting [a,b,c]	2.82	1.05	3.23	1.29	2.38	0.89	2.98	1.39	3.00	1.17
Fear Approach	2.11	1.29	2.24	1.21	2.82	0.63	2.82	0.65	2.17	1.26
Fear Distress	1.53	1.01	1.50	0.98	1.12	0.76	1.12	0.71	1.52	1.00
Child Engagement [a,b,c]	4.27	1.21	3.47	1.27	4.60	1.06	3.71	1.08	3.92	1.29

Note.

[a] statistically significant mean difference for younger girls and boys;

[b] statistically significant mean difference for older girls and boys;

[c] statistically significant mean difference for girls and boys across the sample

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Table 2

Bivariate correlations of study constructs for girls (above the diagonal) and boys (below the diagonal).

Variables	1	2	3	4	5	6
1. Mothers' Supportive Parenting	-	−.45***	.07	−.02	.63***	.05
2. Mothers' Intrusive Parenting	−.48***	-	−.08	.20*	−.33**	.09
3. Fear Approach	−.05	−.08	-	−.10	−.01	.23**
4. Fear Distress	−.01	.19*	−.10	-	−.05	−.14
5. Child Engagement	.59***	−.33***	.02	−.13	-	.30**
6. Child Age	−.05	−.11	.50***	−.36***	−.26**	-

Note.

*$p < .05$;

**$p < .01$,

***$p < .001$

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Table 3

Bivariate correlations of study constructs for older siblings (above the diagonal) and younger siblings (below the diagonal)

Variables	1	2	3	4	5	6
1. Mothers' Supportive Parenting	-	−.48***	−.05	−.01	.59***	.04
2. Mothers' Intrusive Parenting	−.54***	-	−.08	.19*	−.33**	−.10
3. Fear Approach	−.02	−.01	-	−.10	.01	.13
4. Fear Distress	−.03	.06	−.37**	-	−.05	−.14
5. Child Engagement	.72***	−.42***	−.01	−.13	-	.10
6. Child Age	−.07	.04	−.01	−.14	.02	-

Note.

* $p < .05$;

** $p < .01$,

*** $p < .001$

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Table 4

Fixed Effects from Multi-Level Models Predicting Mothers' Supportive and Intrusive Parenting.

	Supportive Parenting		*Intrusive Parenting*	
Fixed Effects	***b***	***SE***	***b***	***SE***
Intercept	3.46	0.18***	4.80	0.25***
Child Sex [a]	0.11	0.09	−0.10	0.13
Child Age	−0.01	0.01**	−0.01	0.01**
Child Engagement	0.52	0.04***	−0.31	0.06***
Fear Approach	−0.15	0.08*	0.05	0.11
Fear Distress	−0.06	0.07	0.22	0.11*
Fear Approach x Sex	0.20	0.09*	−0.12	0.14

Note.

[a] Child sex: 0 = *female*, 1 = *male*.

* $p < .05$.

** $p < .01$.

*** $p < .001$.