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## Maternal Control and Sensitivity, Child Gender, and Maternal Education in Relation to Children's Behavioral Outcomes in African American Families

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### Abstract

This study examined relationships between mother-child interactions and children's behaviors in 119 urban African American mothers and their 6 - 7 year old children. Interactions during a cooking task and a follow-up child clean-up task were videotaped. Principal components analyses of behaviors during the cooking task yielded two factors in mothers (Sensitivity and Control), and three in children (Task Involvement, Responsiveness, and Communicative). Children's negativity during a clean up task was coded and mothers were interviewed about their children's problem behaviors. Parenting sensitivity was associated with positive child behaviors and parenting control was associated with negative child behaviors. Maternal education was associated with greater maternal sensitivity and less control. Child gender predicted their task involvement, responsiveness, communicativeness, negativity during clean-up, and behavior problems; maternal control and sensitivity mediated some of these relations. Findings underscore heterogeneity of African American parenting and factors that promote positive parenting and children's behavioral adjustment in early childhood.

### Keywords

African American mothers; Mother-child observations; Parenting sensitivity; Parenting control; Gender differences; Maternal education

### 1. Introduction

According to recent estimates, up to half of young school-age children lack basic social competencies such as following directions, working both independently and collaboratively, and communicating effectively with peers and teachers (e.g., Huffman & Speer, 2000; Langlois, 2004; Pianta & Caldwell, 1990). Children from low-income backgrounds are more likely to lag behind their peers in social skills and to display behavioral problems in school and at home (e.g., Achenbach, Howell, Quay, & Conners, 1991; McLoyd, 1998). Due to the stressors associated with high rates of unemployment and poverty, African American children

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are disproportionately at risk for developing behavior problems. African American boys in particular face risks that exceed most other groups of children in the U.S. (e.g., Graham, Bellmore, & Mize, 2006; Steinberg, Dornbusch, & Brown, 1992).

Positive forms of parenting, however, can buffer the deleterious effects of poverty and other risk factors that compromise children's behavioral adjustment. Parenting has been shown to both mediate and moderate links between distal factors and children's outcomes (e.g., Bailey, Delaney-Black, Covington, & Sokol, 2006; Ceballo, Ramirez, Hearn, & Maltese, 2003). In particular, aspects of mothers' "sensitivity", including warmth, flexibility, teaching, and responsiveness, predict children's academic readiness, self-regulation, and social competencies (e.g., Burchinal, 1997; Landry, Smith, Swank, Assel, & Vellet, 2001). In contrast, maternal behaviors that emphasize "control", including physical and verbal manipulation of children's behaviors and negative displays, anger and/or rejection, have been linked to negative child affect, low mother-child mutuality, and low child affection toward mothers (e.g., Egeland, Pianta, & O'Brien, 1993; Marfo, 1992).

Most theories of parenting, however, have been developed based on data from middle-income, European American families. Although there is general consensus that maternal sensitivity is beneficial to children of different ethnic and racial backgrounds, controversy exists with respect to the effects of maternal control (e.g., Deater-Deckard, Dodge, & Bates, 1996; McLoyd, 2000; Pettit, Bates, & Dodge, 1997). A number of researchers have argued that high control is a common socialization strategy in African American mothers that may yield benefits for children (Deater-Deckard & Dodge, 1997; Dodge, Pettit, & Bates, 1994; Jackson, 1997). Some studies, however, confound African American parenting with variables such as socioeconomic status and education, which themselves might account for between- and within-group variation in parenting. Consequently, there is continued need to examine sources of heterogeneity in African American parenting, and to relate this variation to children's behavioral outcomes. In response, we describe the structure of two parenting dimensions -- sensitivity and control -- in African American mothers of 6 year old children. We investigated associations between maternal education and child gender and these parenting dimensions, and examined the extent to which maternal sensitivity and control, maternal education, and child gender relate to observed and reported child behaviors.

### 1.1. Parenting sensitivity and control

Our first goal was to describe parenting sensitivity and control in African American mothers, and to examine associations between these behaviors to both positive and negative child behaviors. Parents of minority ethnic and racial groups generally score lower than European American parents on sensitivity and higher on various forms of control-oriented childrearing practices (such as harsh punishment, intrusiveness, and demandingness; McLoyd & Smith, 2002; Shumow, Vandell, & Posner, 1998, Whiteside-Mansell, Bradley, Little, Corwyn, & Spiker, 2001). Baumrind (1973) found that in contrast to European American parents, African American parents high on authoritarianism had girls who were more self-assertive and independent. Similarly, Deater-Deckard and colleagues (Deater-Deckard, Dodge, Bates, & Pettit, 1998) identified an interaction between ethnicity and parenting in relation to children's externalizing behaviors in kindergarten to third grade. Parents' physical disciplinary strategies predicted higher externalizing behavior in European American children, but not in African American children. In fact, there was a trend for African American children who received physical discipline to display lower aggression and externalizing behavior. Similar findings were obtained in a subsequent longitudinal study of European American and African American children followed from pre-kindergarten to grade 11 (Lansford, Deater-Deckard, Dodge, Bates, & Pettit, 2004). European American adolescents who had experienced higher levels of physical

discipline displayed higher externalizing behaviors, whereas the opposite pattern was obtained for African American adolescents.

In contrast to the above studies, others have found control to be inversely associated with children's outcomes in African American groups, mirroring findings observed in European American samples. For example, in a longitudinal study of low-income European American and African American parents of 3<sup>rd</sup> - 5<sup>th</sup> graders, parental harshness negatively related to various indices of child adjustment at 3<sup>rd</sup> and 5<sup>th</sup> grades in both racial groups (Shumow et al., 1998). In a study by the National Institute of Child Health and Human Development Study of Early Child Care with African American and European American participants, associations between parenting and child behaviors yielded identical patterns (Whiteside-Mansell et al., 2003). Specifically, intrusive and harsh maternal behaviors predicted greater externalizing and internalizing behaviors in both groups whereas responsive parenting was associated with greater child compliance and fewer problem behaviors.

There are several possible explanations for the conflicting findings regarding effects of maternal control in African American families. First, definitions of control vary across studies, ranging from harsh discipline and corporal punishment to intrusive or demanding behaviors. Researchers highlight the need to distinguish between parents who are “in control” and those who use psychological and behavioral control to pressure children to think or behave in specific ways (Grolnick, 2003), or who overwhelm children with excessive, noncontingent stimulation that interrupts or changes the child's activities (Ispa, Fine, Halgunseth, Harper, Robinson, Boyce et al., 2004). Behaviors that are overly controlling may actually undermine the skills and behaviors that parents hope to promote in their children (e.g., Biringen & Robinson, 1991; Grolnick, 2003; Isabella & Belsky, 1991; Ispa et al., 2004; Smith & Pederson, 1988). Second, a number of researchers highlight the need to *jointly* consider maternal control and sensitivity, since high control in the context of high warmth can have neutral or positive consequences for African American children (e.g., Brody et al., 1999; McLoyd & Smith, 2002; Spieker, Larson, Lewis, Keller, & Gilchrist, 1999). In one study of African American, European American, and groups of more acculturated and less acculturated Mexican American mothers, intrusive control was associated with decreased child engagement and dyadic mutuality in all groups, except for African Americans (Ispa et al., 2004). The relationship between maternal intrusiveness and child negativity, however, held only for dyadic pairs in which the mother also scored low on warmth. Similarly, the term “no nonsense parenting” has previously been used to describe parenting that is characterized by physical punishment (e.g., spanking) and restraint that occur in the context of warm or affectionate parenting behaviors (Young, 1974). No-nonsense parenting in low-income, single African American mothers and their 6- to 9-year old children living in the rural South involved high levels of parental control coupled with a great deal of maternal affection (Brody et al., 1999).

## 1.2. Maternal education, child gender, and parenting

A second goal was to examine associations between maternal education, child gender, and parenting control and sensitivity. Education strongly relates to income (Smetana, 2000) and is the most stable predictor of class (Featherman, Spenner, & Tsunematsu, 1988). Even after controlling for occupation or income, education holds predictive validity for parenting (Alwin, 1984; Richman, Miller, & LeVine, 1992). Maternal education may relate to parenting because stressful living conditions, which often accompany poverty and lower education, may lead to an overly controlling style of interacting with children (e.g., Dix, 1991; Ispa et al., 2004). Parents with less education are more likely to physically punish and/or abuse their children (Kelley, Sanchez-Hucles, & Walker, 1993; Straus, Gelles, & Steinmetz, 1980). Both mothers' and fathers' educational attainment is associated with sensitive parenting in early childhood (Tamis-LeMonda, Shanon, Cabrera, & Lamb, 2004). Middle-class, educated African

American parents have been described as exhibiting less control than their lower-class counterparts (Davis, Delameter, Shaw, La Greca, Edison, Perez-Rodriguez et al., 2001; Kelley, Power, & Wimbush, 1992; McLoyd, 1990; Wilson, Kohn, Curry-El, & Hinton, 1995). In a study of working class and middle-income African American mothers, more educated mothers were more likely to engage in child-centered discipline, challenging the view that African American parents are usually authoritarian (Bluestone & Tamis-LeMonda, 1999). African American parents with less education are reportedly more fearful that their children will engage in antisocial behavior (Kelley et al., 1992), which in turn may lead parents to engage in more authoritarian parenting.

In addition to maternal education, child gender might relate to maternal sensitivity and/or control in African American families. There is a large literature documenting differences in boys' versus girls' behavior problems across ages and tasks, with a general consensus that boys are more prone to behavior problems than are girls. For example, in one meta-analysis of over 150 studies, boys were found to have higher risk taking tendencies than girls (Byrnes, Miller, & Schafer, 1999), and in another meta-analysis of over 30 years of research, boys were found to be more easily aroused, less able to regulate their emotions, and displayed higher levels of aggression than girls (Knight, Guthrie, Page, & Fabes, 2002). Gender differences in children's behavior might be explained in part by the differential treatment of boys versus girls by mothers. Mothers of boys might engage in more controlling behaviors due to their expectations about their boys' potential to engage in problem behaviors or high levels of risk taking, or in response to actual differences in boys' aggression, arousal, and activity levels. In particular, African American mothers of boys might be more controlling and less sensitive out of concern about the risks faced by African American boys.

The final goal was to examine mediating and moderating pathways to children's behaviors from measures of parenting control, sensitivity, maternal education, and child gender. In light of the relationships between maternal education and parenting, documented links between maternal education and child behaviors might be mediated by parenting control and sensitivity. A number of studies indicate that distal factors such as education and SES relate to children's development indirectly through parenting and that these associations attenuate when analyses control for parenting (e.g., Hoff, 2006). What remains missing from this work is an examination of whether parenting might also explain gender differences in child behaviors in African American communities. To the extent that mothers differ in their treatment of boys versus girls, parenting might mediate associations between child gender and children's behavioral outcomes. Alternatively, associations between maternal sensitivity and control and child behaviors might differ by maternal education or child gender, thereby supporting moderation.

### 1.3. The current study

To summarize, three goals framed this study. First, we sought to describe variation in parental control and sensitivity in a diverse group of African American mothers who were stratified across the full range of education (less than high school through college and beyond), thereby presenting a fuller picture of African American parenting than is typical in most extant studies. We expected to identify two factors in parenting that correspond to the constructs of control and sensitivity. Control was expected to be evidenced in a constellation of intrusive and harsh parenting behaviors that might interfere with children's autonomy (Ainsworth et al., 1978; Grolnick, 2003; Ispa et al., 2004), and sensitivity was expected to be expressed through a set of warm, supportive maternal behaviors that both responded to and promoted children's successful initiatives (Ainsworth et al., 1978; Tamis-LeMonda et al., 2004). We expected sensitivity to predict positive behaviors in children, but remained open as to the patterns of association that might exist for control. Moreover, because high control with high sensitivity has been found to benefit African American children (e.g., McLoyd & Smith, 2002), we tested

whether sensitivity moderated the influences of control on children's outcomes. Second, we asked whether parents' education and child gender would predict mothers' sensitivity and control. We expected to observe more control and less sensitivity in mothers who were less educated and in mothers of boys. Finally, we examined the joint and interactive contributions of maternal sensitivity and control, child gender, and maternal education to children's behaviors. We asked whether child gender and maternal education related to children's behaviors directly and/or through their influence on mothers' sensitivity and control.

## 2. Method

### 2.1. Participants

African American mothers ( $N = 119$ ; mean age = 34.2 years;  $SD = 7.18$ ) volunteered to participate in a larger investigation of children's temperament in relation to parent-child and teacher-child interactions. The mothers and children were part of a preventive trial testing the efficacy the INSIGHTS into Children's Temperament program (McClowry, Snow, & Tamis-LeMonda, 2003). Data reported in this paper were collected at baseline before the intervention began and were intended to generate knowledge on parent-child interactions in inner city families. Mothers received \$30 and the children received a small toy in appreciation for this participation. Six schools in a major urban school district participated in the study. The school district reported that approximately 86% of the children qualified for free lunch programs. Children were students in regular education 1<sup>st</sup> and 2<sup>nd</sup> grade classrooms.

Approximately one-third (30.3%) of mothers had less than a high school education. The remaining mothers had either completed high school or obtained a GED (38.7%) or had college or graduate training (31.1%). Sixty-one percent of mothers were employed outside the home. Thirty-three percent were married. All were the biological mothers to the children. The mean age of the children (53 females and 66 males) was 6.5 years ( $SD = .85$ ).

### 2.2. Procedure

During the second week of each semester, letters were sent home to all parents of first and second grade children in the regular education classrooms of teachers who had consented to participate in the larger study (70% of teachers). Teachers who declined typically noted that they were already involved in other after-school programs at the school or attending graduate courses, and therefore did not have time to be involved in the study. Parents agreeing to participate (approximately 7% of total possible parents) signed consent forms and attended two sessions in a private room of the school for data collection. Although this represents a low rate of parent consent, the larger investigation required parents to participate in a parenting prevention program that entailed 10 sessions at their child's school in addition to baseline interviews and observations (reported here) and follow up interviews and observations. Many parents were working and could not make the parenting workshops, and were therefore not recruited into the study.

The first meeting lasted approximately 45 minutes. Parents reported demographic information (e.g., education, age, marital status, and race/ethnicity) and responded to the Parent Daily Report, which assessed their children's problem behaviors. Mother-child interactions during a cooking task followed by a clean-up task were videotaped during the second session. The videotaping experimenter, unaware of the goals of the study, followed a standard protocol for the cooking task, requesting that dyads prepare a cake batter, cook it in a microwave, and then wash the dishes. Completion of this task took approximately 20 minutes. For the clean-up task, the experimenter dumped a canister containing hundreds of plastic building blocks onto a table, and told the child that another child who had visited the classroom earlier had mixed up all of the blocks. The child was asked to please sort all of the pieces into different containers

according to the puzzle-piece size. Mothers were asked to remain in the room while their children cleaned up and that their children should put away all the puzzle pieces themselves.

Mother-child cooking interactions were coded using the Mother-Child Affect, Responsiveness and Engagement Scale (C-CARES, Tamis-LeMonda, 1999), which was based on an adaptation of the Meadow-Orlans (Schlesinger & Meadow, 1976) and the Mahoney (1992) Scales of Mother-Child Interaction. Mothers were coded on 12 items (positive affect, negative affect, positive verbal reinforcement, negative verbal reinforcement, participation with child, sensitivity/responsiveness, flexibility, intrusiveness, structure, amount of language, use of explanatory language, and use of imperative language) and children were coded on 12 items (positive affect, negative affect, emotional regulation, participation with mother, sensitivity/responsiveness to mother, activity level, involvement with task, persistence, amount of language, quality of language, amount of initiation, and competence in the task) using 5-point Likert scales ranging from 1 = “not observed” to 5 = “constantly observed” (See Appendix 1). Separate coders scored the mother items and child items so coders were blind to the ratings assigned to the other dyad member. Each coder determined a single score for each item after a minimum of three passes through the entire videotaped session. During the first pass, coders became familiar with the interaction. During the second pass, they rated the mother or child on each of the items. During the third pass, scores were double checked, and tapes were reviewed again, if necessary, before finalizing scores.

Children's verbal negativity (mostly in the form of whining and complaints) was coded during the clean-up task, also on a Likert scale of 1 = “not observed” to 5 = “constantly observed”. Two coders were trained to reliabilities of .80 kappa agreement or greater for all observations. Reliability checks continued throughout coding, with every eighth tape used for this purpose.

Child behavior problems were assessed using the Parent Daily Report (PDR) (Chamberlain & Reid, 1987) which consists of 31 items of child negative and aggressive behaviors. Mothers were asked by interview to indicate which problems her child exhibited over the last two weeks. Test-retest reliability of the PDR has been reported by its developers as .60 to .82. In this study, the internal consistency reliability based on the Kuder-Richardson was .89. The PDR takes about 3 minutes to complete.

### 3. Results

Results are organized around the three research questions. First, we describe mothers' control and sensitivity and present bivariate associations with children's behaviors. Second, we examine associations from child gender and mother's education to mothers' sensitivity and control. Third, we examine the joint contributions of parenting, education, and child gender in relation to children's behaviors, and ask whether parenting mediates associations between maternal education and/or gender, and children's behaviors.

#### 3.1. Mothers' control and sensitivity

Table 1 presents descriptive data on the 12 maternal behavioral items. Mothers' behaviors were characterized by substantial variability. On virtually all items, codes of mothers' behaviors spanned the full Likert-scale range of 1 to 5. An exception was the item of maternal negative affect, which was rarely observed in mothers. In general, mothers received the highest scores on positive items, such as communication amount, participation, and responsiveness, and the lowest scores on negative items.

We next explored whether two dimensions of mother interactions, sensitivity and control, could be identified from the ratings of mothers' behaviors during the cooking task. Scores for mothers' behaviors were subjected to a principal components analysis with varimax rotation. The two

factor solution yielded a meaningful structure that corresponded to the hypothesized dimensions of parenting. Together the factors accounted for 61.2% of the variance in maternal behaviors with eigenvalues of 6.01 and 1.32 (see right portion of Table 1). The first parenting factor, Sensitivity, was comprised of eight items: positive affect, positive verbal feedback, sensitivity, participation, structure, language amount, explanatory language, and the inverse of directive language ( $\alpha = .90$ ). The second parenting factor, Control, was comprised of four items: intrusiveness, inflexibility, negative affect, and negative verbal feedback ( $\alpha = .79$ ). Average scale scores were computed for each of the two factors by summing item values and dividing by the number of items in the factor (8 for sensitivity and 4 for control), thereby placing the two scales on common metrics of 1-5 range. Like the original items that comprised these composite scores, scale scores for Sensitivity and Control were characterized by high variability (ranges from 1.50 to 4.75 for Sensitivity and 1.0 to 3.93 for Control).

We next examined associations from the scale scores of Sensitivity and Control to children's behaviors. Prior to these analyses, the 12 child items coded from the cooking task were reduced through principal components factor analysis with varimax rotation. Three factors were identified, accounting for 67.6% of the total variance in the child observational items (see Table 2). The first factor, labeled Communicative ( $\alpha = .80$ ), reflected high scores on positive affect, language amount, communication style, and initiation. The second child factor, labeled Task Involvement ( $\alpha = .76$ ), was characterized by high scores on involvement in task, activity, persistence, and competence on task. The third factor, labeled Responsiveness ( $\alpha = .85$ ) reflected low scores on negative affect, high emotional regulation, high responsiveness to mother, and high participation with mother. Items for each dimension were summed to create scale scores, and were divided by the number of items per factor.

Next the associations between the maternal sensitivity and control scales and the five child behavior scales were examined: child communication, child responsiveness, child task involvement, child negativity during clean-up, and child behavior problems as rated by mothers on the PDR. Bivariate associations are presented in Table 3. Mothers' sensitivity was generally associated with positive child behaviors and mothers' control was associated with negative child behaviors. Specifically, mothers with higher scores on sensitivity had children who were more communicative, responsive, and task-oriented during the cooking task, and were less negative during clean-up. Mothers with higher scores on control had children who were less responsive and task-oriented during cooking, were more negative during clean-up, and had more behavior problems on the PDR.

### 3.2. Mothers' education and child gender in relation to parenting

We examined whether mothers' Sensitivity and/or Control would be predicted by mothers' education and by child gender. This was examined in a 3 (mother education level)  $\times$  2 (child gender)  $\times$  2 (parenting dimension: control – sensitivity) ANOVA, with education level and gender as between-participant factors and control and sensitivity scores as within-participant factors. This analysis revealed a main effect for parenting dimension,  $F(1, 113) = 60.47, p < .001$ , an interaction between child gender and parenting dimension,  $F(1, 113) = 5.83, p < .05$ , and an interaction between education level and parenting dimension,  $F(1, 113) = 4.45, p < .05$ .

The main effect for parenting dimension was due to mothers' higher overall sensitivity scores than control scores (see Table 3). However, the education by parenting dimension interaction revealed that this was only the case for mothers with a high school education or greater. Specifically, mothers with no high school degree exhibited equivalent levels of control and sensitivity whereas mothers with high school degrees and those with partial college or greater demonstrated more sensitivity than control.

Finally, the child gender by parenting behavior interaction reflected that mothers of boys exhibited less sensitivity and more control than mothers of girls,  $M_s$  ( $SDs$ ) = 2.90 (0.77) and 3.20 (0.74) for sensitivity with boys and girls, respectively, and 2.57 (0.65) versus 2.20 (0.68) for maternal control with boys and girls, respectively. The interaction between gender and maternal education and the three-way interaction between parenting dimension, education, and gender were not significant.

### 3.3. Associations between maternal education, child gender, parenting and children's behaviors

The third research question focused on the joint contributions of parenting Sensitivity and Control, maternal education, and child gender to the children's behaviors. Separate hierarchical regressions were conducted for each of the five child outcomes. These analyses included the four predictors (mothers' education, child gender, mother sensitivity, mother control; see Table 4). Step 1 included child gender and maternal education. Step 2 added mother sensitivity and control. Finally, interactions between (1) mothers' education and child gender, (2) between mothers' education and control and mothers' education and sensitivity, and (3) between child gender and control and child gender and sensitivity were explored in the last steps of regressions. The majority of interactions were not significant, and only significant interactions are reported. Additionally, because maternal education did not relate to any child behaviors in the first step of the regressions, it was not possible to test whether parenting mediated associations to children's outcomes (Baron & Kenny, 1986). However, it was possible to test whether parenting mediated associations between child gender and child behaviors, given that child gender did relate to certain of the child variables. This was done by comparing the effect sizes for gender in Models 1 and 2 in each of the regression analyses.

In Model 1 for child responsiveness, boys were less responsive, as indicated in the first step of the regression. In Model 2, maternal sensitivity was associated with more child responsiveness and mothers' control with less child responsiveness. The child gender effect attenuated to non-significance in Model 2, indicating that maternal behaviors mediated the link between child gender and child responsiveness. No interactions were significant in this model (See Table 4).

In terms of children's task involvement, child gender was again significant in Model 1, indicating that boys were less involved in the task than girls. In Model 2, maternal sensitivity was associated with children's task involvement, but maternal control did not relate to children's task involvement. The gender effect remained significant in Model 2, although it was partially mediated by parenting, as indicated in a significant reduction of the beta. Specifically, child gender explained over 11% of the variance in task involvement in Model 1, but this was attenuated by more than half to 5% after controlling for mothers' sensitivity. This suggests that the lower sensitivity of mothers of boys partially explains the lower task involvement of boys. No interactions were significant.

Analysis of Children's Communication showed a similar pattern. Child gender predicted communication in Model 1, and maternal Sensitivity (but not Control) predicted communication in Model 2. Moreover, there also was a significant interaction between mothers' Control and mothers' Sensitivity in relation to children's communication,  $\Delta F(1, 107) = 5.40$ ,  $p < .05$ . Further examination of the interaction indicated that Sensitivity related positively to children's communication,  $r = .40$ ,  $p < .01$ , only when Control was low; when mothers were Sensitive but also Controlling, there was no relation between mothers' sensitivity and children's communication,  $r = .04$ . Thus, counter to the idea that Control might relate positively to children's outcomes in the presence of high sensitivity, maternal Control actually hindered the benefits of Sensitivity on children's communications.



In contrast to the pattern of findings during the cooking task, mothers' Control was the only significant predictor of children's negativity during the clean-up task, and no interactions were significant. In terms of mothers' ratings on the Parent Daily Report (PDR), child gender related to behavior problems in Model 1 such that boys displayed more behavior problems than girls, and both Control and Sensitivity were associated with a higher level of behavior problems in Model 2. Although the association between Control and reported behavior problems was anticipated, the relation between Sensitivity and PDR scores was unexpected.

#### 4. Discussion

We examined relations between mothers' sensitivity and control, educational attainment, and child gender and children's behaviors in a group of urban African American families. Findings revealed substantial heterogeneity in African American parenting, modest to strong associations between maternal control and sensitivity and child behaviors, and modest to strong associations between maternal education, child gender, and parenting.

As a group, mothers were more sensitive than controlling in their interactions with their children, which challenges characterizations of African American mothers as primarily authoritarian. Moreover, sensitive parenting during the videotaped cooking task related positively to children's communicativeness, task involvement, and responsiveness, and continued to predict these measures after controlling for child gender, maternal control, and maternal education. In contrast, maternal control was associated with lower responsiveness in children, more child negativity during a clean-up task, and higher child behavior problems as rated by mothers on the Parent Daily Report. Notably, mothers who were more controlling during the cooking task had children who whined and complained more when asked to independently clean-up. Thus, maternal control was not predictive of children's observed behaviors but may have indicated a more generalized approach across tasks. Thus, mothers' control may have undermined precisely the behaviors they sought to elicit in their children, which accords with Grolnick's (2003) concerns about detrimental effects of control on children's autonomous functioning. However, the concurrent nature of the data precludes inferences of causality as it is also possible that children with higher negativity elicit more control from their mothers.

Although some have argued that control *in the context of warmth or sensitivity* yields positive effects on African American children, there was no evidence that sensitivity combined with control was beneficial in the present study. In fact, the only indication of moderation between sensitivity and control presented a very different picture. For the child factor of "communicative", which reflected children who were high in positive affect, spoke a lot, conveyed their thoughts clearly, and took initiative, the positive effects of mothers' sensitivity was *attenuated* by control. That is, maternal sensitivity was related to child communication only under conditions of low control. Thus, future studies should not only ask about whether and how mother sensitivity might alter the effects of control, but also about the conditions under which the benefits of sensitivity or warmth may be attenuated by mothers' control.

On the face of it, the absence of a moderating effect of sensitivity on control may appear to counter the findings of other research studies. For example, Ispa and colleagues (2004) found that warmth moderated the association between maternal intrusiveness and child negativity; specifically, the beta for the association between maternal intrusiveness and child negativity dropped from .19 to a nonsignificant .12 when the interaction of warmth and intrusiveness was included in models. Nonetheless, this relatively small attenuation does not reflect a *beneficial* impact of intrusiveness, which would be reflected instead in a negative association to child negativity. Researchers should be cautious about interpreting null effects as signaling the positive benefits of control under certain conditions.

Our second aim was to examine associations between mothers' education, child gender and measures of control and sensitivity. The finding that African American mothers with a high school education or more received higher scores on sensitive parenting is consistent with research linking nurturance to maternal educational attainment (e.g., Koblinsky, Morgan, & Anderson, 1997; Wilson et al., 1995). Similarly, mothers with less than a high school education received higher scores on controlling parenting behaviors, which is consistent with the findings of previous studies (Davis et al., 2001; Kelley et al., 1992; Wilson et al., 1995). The present study builds on this work by focusing on African American mothers across a range of education levels. Moreover, these findings speak to the necessity of disentangling race from education and SES in studies of African American parenting (see also Mandara, 2006). The majority of research on African American parenting has been conducted in families from lower socioeconomic strata. Insufficient attention to educational heterogeneity among African American families poses the danger that a picture of lower income African American life will predominate.

In terms of child gender, mothers of boys were more controlling and less sensitive than mothers of girls. Boys were less communicative, less responsive and less persistent during the cooking task, complained more during clean-up, and were rated by their mothers as having more behavior problems. These findings are consistent with studies on the prevalence of behavior problems in boys versus girls (e.g., Bettencourt & Miller, 1996; Lahey, Schwab-Stone, Goodman, Waldman, Canino, Rathouz et al., 2000) and add to the literature by revealing gender differences in children's behavior problems at much earlier ages (6.5 years) than typically documented.

Nonetheless, whereas some of the gender differences in children's behaviors maintained after controlling for mothers' sensitivity and control in regressions, certain associations were reduced and/or attenuated to nonsignificance after covarying mothers' control and sensitivity. At least at this young age, boys' lower responsiveness and task involvement relative to girls was partly mediated by mothers' increased use of control and lower sensitivity. It may be that African American mothers of boys are all too aware of the risks faced by African American male children, and are attempting to keep their male children in line through increased levels of control. However, at least for the child variables examined in this study, this strategy was not effective in enhancing positive behavior and reducing negative behaviors in boys. Alternatively, boys' behaviors might be more difficult for mothers to manage so that they exert more control in response. Efforts to understand the nature of these potential reciprocal relationships deserves more attention.

This study has certain limitations that may limit generalizations and suggestions for practice. Sampling was conducted from one inner city neighborhood, which may reduce the generalizability of findings. Moreover, the sample is based on a small percentage of mothers who agreed to participate in the larger study, which therefore leads to high selection bias. The cross-sectional nature of the study precludes causal interpretations and statements regarding the effects of parenting over time. As one example, it is unclear whether mothers modify their behaviors in line with actual differences in the behaviors of their children, or whether mothers' differential treatment of their children accounts for differences in children's behaviors. And although multiple methods were used (maternal report by interview and videotaped observations), the data might have been biased since mothers reported on their children's problem behaviors and also were observed engaging with their children. This may also account for the unexpected finding that mothers high in sensitivity, as well as those high in control, reported more behavior problems in children. Perhaps mothers who exhibit relatively high levels of sensitive *or* controlling behavior are more aware or observant of problem behaviors in their children, but they may call upon different behavioral strategies to deal with their perceptions of child problems.

Despite these limitations, the findings of this study have important methodological implications for research on African American parenting, and practical implications for parenting intervention programs. In terms of methods, observational techniques to assess mothers' control and sensitivity are rare in light of the expense and time associated with such procedures. Nonetheless, observational measures may offer a different perception from those obtained when parents are asked to report on their parenting styles. Self-report methodologies might contribute to respondent bias and answers that are rooted in social desirability, and may also lead to erroneous conclusions about the effects of maternal sensitivity versus control on children's behavior. In addition, there is an inherent challenge to probing parents for self-report about the *positive* dimensions of parenting. Observational methods may overcome some of these limitations by providing more objective insight into semi-naturalistic behaviors that represent everyday parental activities and engagements with children.

In terms of implications for practice, maternal education was a critical factor in explaining parenting. Mothers with at least a high school education were better able to remain sensitively invested in their children and likewise displayed lower levels of control. In turn, these parenting behaviors were associated with children's behaviors across measures. This indicates the importance of supporting mothers in their educational pursuits, and also sparks additional questions as to why education is linked to parenting. Finally, by 6 years of age (and likely much sooner), interactions between mothers and boys differs from interactions between mothers of girls, and boys display fewer positive behaviors and are rated as having more behavior problems. Parenting differences in sensitivity and control may explain some of the observed gender differences in children's behaviors. Since parenting behaviors are modifiable, they lend themselves to change in carefully designed preventive interventions. Programs that aim to increase parents' awareness of the benefits of sensitive versus controlling parenting, especially in the raising of boys, are worthy of attention.

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### Appendix 1: Codes for Mother and Child Behaviors during Cooking Task

Mother behavior items	Definition and examples
Positive affect	Caregiver demonstrates positive affect and emotional tone towards the child through facial expression (smiles, laughter), gestures (hugging), and voice.
Positive verbal	Caregiver makes encouraging statements of approval and affirmation towards the child, including praise and acknowledgement (e.g., "Good job!; I know it is difficult"), and other forms of positive reinforcement.
Responsiveness	Caregiver replies to child's verbal statements, questions, and nonverbal behaviors with contingent and appropriate responses. Examples include responding to the child's requests for help, handing over objects out of the child's reach as the child looks toward them, providing instructions that are keyed into the child's current focus and responsive to the child's initiations.
Participation	Caregiver is highly engaged with the child during the task, as expressed

Mother behavior items	Definition and examples
	through behaviors such as sitting close to child, attending to the child's actions, and maintaining focus on the child and task during the entire session.
Structuring	Caregiver structures the task for the child so as to facilitate the child's performance. This includes indicating where materials are that the child needed, placing objects within reach of the child, handing the next object to the child, or verbally indicating steps to the process of completing the task.
Communication amount	Amount of talk or verbal statements caregiver makes to the child. High scores represent a caregiver who talks to the child throughout the session. This category does not consider the form of language caregiver provides, but rather the sheer amount of talk.
Explanatory language	When speaking to the child, the caregiver displays a style of communication that contains high use of descriptive and explanatory language, as characterized by high use of labels, adjectives, adverbs, and questions to child (e.g., "Those are the ingredients for the cake"; "Where do you think the red piece goes?"; "Which utensil should we use?").
Directive language	When speaking to the child, the caregiver displays a style of communication that contains high use of imperatives (commands) and high use of pronouns rather than descriptive language (e.g., "Put that one there". "Get that one").
Negative affect	Caregiver demonstrates negative affect towards child through facial expressions (frowns, negative expression), gestures (pushing or pulling child), and voice tone (anger or harshness).
Negative verbal	Caregiver expresses disapproval towards the child verbally, including criticizing child ("You are making a mess") and discouraging statements or discontent ("I don't like what you're doing").
Intrusiveness	Caregiver displays high levels of control and intrusiveness during the interaction, by prohibiting child's actions, interrupting child's actions, and taking over the task. Examples include the caregiver hovering over the child, restricting the child's behaviors, taking objects away from the child, introducing new objects or actions while the child is engaged in something else, refusing to hand over objects to the child that are needed so that the caregiver can complete the project without the child actively participating.
Inflexibility	Caregiver is unable to "bend the rules" during interactions, and is inflexible by not accepting the child's initiatives. Examples include, insisting that the child engages in a particular activity selected by the mother, even if the child wishes to do something different, and not switching to a different strategy or task when the current strategy is not effective with the child.
<b>Child behavior items</b>	
Positive affect	The child displays positive affect and pleasure when engaging in the task as

Mother behavior items	Definition and examples
	expressed through facial expressions (smiles, laughter), tone of voice, body position, and gestures.
Language amount	Amount of talk or verbal statements by child during the session. High scores represent a child who is talkative throughout the session. This category does not consider the form of language, but rather the sheer amount of talk.
Communication style	Amount of talk or verbal statements child makes. High scores represent a child who is very verbal during the session by commenting on activities, asking for assistance or clarification, and speaking about non-task related topics.
Initiation	Child takes initiative in carrying through with the task, and seeks information/input/feedback from caregiver that is directed to the task, either verbally or through gestures. Examples might be a child pointing to the materials needed, or asking information about how to complete the task ("How do I crack the egg?").
Task involvement	Child demonstrates interest and engagement with the task materials, both verbally (by talking about the task) as well as non-verbally (by attending to the task and manipulating the materials).
Activity level	Child displays high activity level during the task, which may be directed toward the caregiver or task, but might also reflect general arousal and lack a focus. Examples include child moving around, fidgeting, continually manipulating the task materials, etc.
Task persistence	Child seeks out and explores aspects of the task materials visually and manually. Child maintains visual attention to the task, remains focused on the task, and carries through with task activities.
Task competence	Child demonstrates competence in the task by successfully completing various steps to the task (e.g., cracking eggs, combining ingredients).
Responsiveness	Child responds to and cooperates with the caregiver during the interaction. Child is accepting of the caregiver's directions, for example by following through on what the caregiver suggests or verbally acknowledging the caregiver's suggestions ("Yeah, I'll do that").
Participation	Child participates with the caregiver during the session, as expressed by verbal and nonverbal behaviors (e.g., talking to caregiver, looking at what caregiver is doing). The child initiates interactions with the caregiver ("How do you do this one?"; "Can you help me?") as well as follows through with caregiver initiated actions.
Emotion regulation	The child is able to maintain self-regulation both in actions and emotions. Child remains focused on the task, is not easily distractible, and remains calm rather than upset or angry throughout the session.
Negative affect	Child demonstrates negative affect through facial expressions (frowns, negative expression), gestures, and voice tone (e.g., angry and/or generally

Mother behavior items	Definition and examples
	unhappy, sad tones).

## References

- Achenbach TM, Howell CT, Quay HC, Conners CK. National survey of problems and competencies among four- to sixteen-year-olds: Parents' reports for normative and clinical samples. *Monographs of the Society for Research in Child Development* 1991;56(3):v-120.
- Ainsworth, M.; Blehar, M.; Waters, E.; Wall, S. *Patterns of attachment*. Erlbaum; Hillsdale, NJ: 1978.
- Alwin DF. Trends in parental socialization values: Detroit, 1958-1983. *American Journal of Sociology* 1984;90:359-381.
- Bailey BN, Delaney-Black V, Covington C, Sokol RJ. The role of maternal acceptance in the relation between community violence exposure and child functioning. *Journal of Abnormal Child Psychology* 2006;34(1):57-70. [PubMed: 16468089]
- Baron RM, Kenny DA. The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology* 1986;51:1173-1182. [PubMed: 3806354]
- Baumrind, D. The development of instrumental competence through socialization. In: Pick, AD., editor. *Minnesota symposium on child psychology*. Vol. 7. University of Minnesota Press; Minneapolis: 1973. p. 3-46.
- Bettencourt BA, Miller N. Gender differences in aggression as a function of provocation: A meta-analysis. *Psychological Bulletin* 1996;119(3):422-447. [PubMed: 8668747]
- Biringen Z, Robinson J. Emotional availability in mother-child interactions: A reconceptualization for research. *American Journal of Orthopsychiatry* 1991;61(2):258-271. [PubMed: 2048641]
- Bluestone C, Tamis-LeMonda CS. Correlates of parenting styles in predominately working- and middle-class African American mothers. *Journal of Marriage and the Family* 1999;61:881-893.
- Brody GH, Flor DL, Gibson NM. Linking maternal efficacy beliefs, developmental goals, parenting practices, and child competence in rural single-parent African American families. *Child Development* 1999;70:1197-1208. [PubMed: 10546340]
- Burchinal MR, Campbell FA, Bryant DM, Wasik BH, Ramey CT. Early intervention and mediating processes in cognitive performance of children of low-income African American families. *Child Development* 1997;68:935-954.
- Byrnes JP, Miller DC, Schafer WD. Gender differences in risk taking: A meta-analysis. *Psychological Bulletin* 1999;125(3):367-383.
- Ceballo R, Ramirez C, Hearn KD, Maltese KL. Community violence and children's psychological well-being: Does parental monitoring matter? *Journal of Clinical Child and Adolescent Psychology* 2003;32(4):586-592. [PubMed: 14710467]
- Chamberlain P, Reid JB. Parent observation and report of child symptoms. *Behavioral Assessment* 1987;9:97-109.
- Davis CL, Delamater AM, Shaw KH, La Greca AM, Edison MS, Perez-Rodriguez, et al. Parenting styles, regimen adherence, and glycemic control in 4- to 10-year-old children with diabetes. *Journal of Pediatric Psychology* 2001;26:123-129. [PubMed: 11181888]
- Deater-Deckard K, Dodge KA. Externalizing behavior problems and discipline revisited: Nonlinear effects and variation by culture, context, and gender. *Psychological Inquiry* 1997;8:161-175.
- Deater-Deckard K, Dodge KA, Bates JE. Physical discipline among African American and European American mothers: Links to children's externalizing behaviors. *Developmental Psychology* 1996;32:1065-1072.
- Deater-Deckard K, Dodge KA, Bates JE, Pettit GS. Multiple risk factors in the development of externalizing behavior problems: Group and individual differences. *Development and Psychopathology* 1998;10(3):469-493. [PubMed: 9741678]
- Dix T. The affective organization of parenting: Adaptive and maladaptive processes. *Psychological Bulletin* 1991;110(1):3-25. [PubMed: 1891517]

- Dodge KA, Pettit GS, Bates JE. Socialization mediators of the relation between socioeconomic status and child conduct problems. *Child Development*. Special Issue: Children and Poverty 1994;65(2): 649–665.
- Egeland B, Pianta R, O'Brien MA. Maternal intrusiveness in infancy and child maladaptation in early school years. *Development and Psychopathology* 1993;5(3):359–370.
- Featherman, D.; Spenner, K.; Tsunmatsu, N. Class and the socialization of children: Constancy, change, or irrelevance. In: Hetherington, EM.; Lerner, R.; Perlmutter, M., editors. *Child development in life-span perspective*. Erlbaum; Hillsdale, NJ: 1988. p. 67-90.
- Graham S, Bellmore AD, Mize J. Peer victimization, aggression and their cooccurrence in middle school: Pathways to adjustment problems. *Journal of Abnormal Child Psychology* 2006;34(3):363–378. [PubMed: 16648999]
- Grolnick, WS. *The psychology of parental control: How well-meant parenting backfires*. Erlbaum; Mahwah, NJ: 2003.
- Hoff E. How social contexts support and shape language development. *Developmental Review* 2006;26:55–88.
- Huffman LR, Speer PW. Academic performance among at-risk children: The role of developmentally appropriate practices. *Early Childhood Research Quarterly* 2000;15(2):167–184.
- Jackson JF. Issues in need of initial visitation: Race and nation specificity in the study of externalizing behavior problems and discipline. *Psychological Inquiry* 1997;8(3):204–211.
- Isabella RA, Belsky J. Interactional synchrony and the origins of infant-mother attachment: A replication study. *Child Development* 1991;62(2):373–384. [PubMed: 2055128]
- Ispa JM, Fine MA, Halgunseth LC, Harper S, Robinson J, Boyce L, et al. Maternal intrusiveness, maternal warmth and mother-toddler relationship outcomes: Variations across low-income ethnic and acculturation groups. *Child Development* 2004;75(6):1613–1631. [PubMed: 15566369]
- Kelley ML, Power TG, Wimbush DD. Determinants of disciplinary practices in low-income Black mothers. *Child Development* 1992;63:573–582. [PubMed: 1600823]
- Kelley ML, Sanchez-Hucles J, Walker RR. Correlates of disciplinary practices in working- to middle-class African-American mothers. *Merrill-Palmer Quarterly* 1993;39:252–264.
- Knight GP, Guthrie IK, Page MC, Fabes RA. Emotional arousal and gender differences in aggression: A meta-analysis. *Aggressive Behavior* 2002;28(5):366–393.
- Koblinsky SA, Morgan KM, Anderson EA. African-American homeless and low-income housed mothers: Comparison of parenting practices. *American Journal of Orthopsychiatry* 1997;67:37–47. [PubMed: 9034020]
- Lahey BB, Schwab-Stone M, Goodman SH, Waldman ID, Canino G, Rathouz PJ, et al. Age and gender differences in oppositional behavior and conduct problems: A cross-sectional household study of middle childhood and adolescence. *Journal of Abnormal Psychology* 2000;109(3):488–503. [PubMed: 11016118]
- Landry SH, Smith KE, Swank PR, Assel MA, Vellet S. Does early responsive parenting have a special importance for children's development or is consistency across early childhood necessary? *Developmental Psychology* 2001;37(3):387–403. [PubMed: 11370914]
- Langlois JH. Emotion and emotion regulation: From another perspective. *Child Development* 2004;75(2):315–316. [PubMed: 15056185]
- Lansford JE, Deater-Deckard K, Dodge KA, Bates JE, Pettit GS. Ethnic differences in the link between physical discipline and later adolescent externalizing behaviors. *Journal of Child Psychology and Psychiatry* 2004;45(4):801–812. [PubMed: 15056311]
- Mahoney, G. *Maternal behavior rating scale (revised)*. Family Child Learning Center; Tallmadge, OH: 1992.
- Mandara J. The impact of family functioning on African American males' academic achievement: A review and clarification of the empirical literature. *Teachers College Record* 2006;108(2):206–223.
- Marfo K. Correlates of maternal directiveness with children who are developmentally delayed. *American Journal of Orthopsychiatry* 1992;62(2):219–233. [PubMed: 1374595]
- McLoyd VC. The impact of economic hardship on black families and children: Psychological distress, parenting, and socioemotional development. *Child Development Special Issue: Minority Children* 1990;61(2):311–346.

- McLoyd, VC. Poverty: Childhood poverty. American Psychological Association; Washington, DC, US: 2000. New York, NY, US: Oxford University Press
- McLoyd VC, Smith J. Physical discipline and behavior problems in African American, European American and Hispanic children: Emotional support as a moderator. *Journal of Marriage and Family* 2002;64:40–53.
- McClowry SG, Snow DL, Tamis-LeMonda C. The efficacy of INSIGHTS in reducing behavior problems in inner city primary school children. 2008 Manuscript submitted for publication.
- Pettit GS, Bates JE, Dodge KA. Supportive parenting, ecological context, and children. *Child development* 1997;68(5):908–923.
- Pianta RC, Caldwell CB. Stability of externalizing symptoms from kindergarten to first grade and factors related to instability. *Development and Psychopathology* 1990;2(3):247–258.
- Richman AL, Miller PM, LeVine RA. Cultural and educational variations in maternal responsiveness. *Developmental Psychology* 1992;28:614–621.
- Schlesinger, HS.; Meadow, KP., editors. Final report: Studies of family interaction, language acquisition, and deafness. Office of Maternal and Child Health; Washington, DC: 1976.
- Shumow L, Vandell DL, Posner JK. Harsh, firm, and permissive parenting in low-income families: Relations to children's academic achievement and behavioral adjustment. *Journal of Family Issues* 1998;19(5):483–507.
- Smetana JG. Middle-class African American adolescents' and parents' conceptions of parental authority and parenting practices: A longitudinal investigation. *Child development* 2000;71(6):1672–1686. [PubMed: 11194265]
- Smith PB, Pederson DR. Maternal sensitivity and patterns of infant-mother attachment. *Child Development* 1988;59(4):1097–1101. [PubMed: 3168617]
- Spieker SJ, Larson NC, Lewis SM, Keller TE, Gilchrist L. Developmental trajectories of disruptive behavior problems in preschool children of adolescent mothers. *Child Development* 1999;70(2):443–458. [PubMed: 10218265]
- Steinberg L, Dornbusch SM, Brown BB. Ethnic differences in adolescent achievement: An ecological perspective. *American Psychologist* 1992;47:723–729. [PubMed: 1616171]
- Straus, MA.; Gelles, RJ.; Steinmetz, SK. Behind closed doors: Violence in the American family. Doubleday/Anchor; New York: 1980.
- Tamis-LeMonda CS. Caregiver-Child, Affect, Responsiveness, and Engagement Scale. 1999 Unpublished Manual.
- Tamis-LeMonda CS, Shannon JD, Cabrera NJ, Lamb ME. Fathers and mothers at play with their 2- and 3-year-olds: Contributions to language and cognitive development. *Child Development* 2004;75(6):1806–1820. [PubMed: 15566381]
- Whiteside-Mansell L, Bradley RH, Little TD, Corwyn RF, Spiker D. An examination of cross-racial comparability of mother-child interaction among African American and Anglo American families. *Journal of Marriage and Family* 2001;63(3):767–778.
- Whiteside-Mansell L, Bradley RH, Tresch Owen M, Randolph SM, Cauce AM. Parenting and children's behavior at 36 months: Equivalence between African American and European American mother-child dyads. *Parenting: Science and Practice* 2003;3(3):197–234.
- Wilson MN, Kohn LP, Curry-El J, Hinton ID. The influence of family structure characteristics on the child-rearing behaviors of African American mothers. *Journal of Black Psychology* 1995;21:450–462.
- Young VH. A Black American socialization pattern. *American Ethnologist* 1974;1(2):405–413.



**Table 1**

Summary of means (*SD*) for observed maternal behaviors and factor loadings for maternal sensitivity and control behaviors during the cooking task

Behavior	Mean ( <i>SD</i> )	Factors <sup>a</sup>	
		Sensitivity	Control
Positive Affect	2.80 (1.11)	.70	
Positive Verbal	2.16 (1.11)	.67	
Responsiveness	3.39 (0.88)	.59	
Participation	3.81 (0.92)	.74	
Structuring	3.59 (0.99)	.66	
Communication Amount	3.71 (0.81)	.81	
Explanatory Language	2.32 (1.01)	.77	
Directive Language (Reverse scored)	3.53 (1.02)	.63	
Negative Affect	1.29 (0.30)		.75
Negative Verbal	2.09 (0.95)		.85
Intrusiveness	3.15 (1.02)		.69
Inflexibility	2.47 (1.02)		.74

<sup>a</sup>Extraction method: Principal component analysis; Rotation method: Varimax with Kaiser normalization.

**Table 2**Descriptive statistics and factor loadings<sup>a</sup> of child behaviors during the cooking task

Child behavior	Mean (SD)	Communicative	Task involvement	Responsiveness
Positive Affect	3.09 (1.14)	.738		
Language Amount	3.07 (0.86)	.867		
Communication Style	2.85 (0.93)	.710		
Initiation	2.96 (0.99)	.742		
Involvement	4.12 (0.78)		.838	
Activity Level	4.03 (0.86)		.684	
Task Persistence	3.54 (0.89)		.861	
Task Competence	3.74 (0.88)		.767	
Responsiveness	3.99 (0.92)			.866
Participation	3.49 (0.82)			.687
Emotion Regulation	3.79 (0.92)			.845
Negative Affect	1.35 (0.72)			-.450

<sup>a</sup>Extraction method: Principal component analysis; Rotation method: Varimax with Kaiser normalization

**Table 3**

Mean (*SD*) scores and bivariate associations for mother and child behaviors

Variable	Mean	SD	2	3	4	5	6	7
1. Maternal Sensitivity	3.03	0.77	-.66***	.24**	.47***	.46***	-.26***	-.01
2. Maternal Control	2.41	0.66	--	-.08	-.42***	-.48***	.37***	.20*
3. Child Communicative	2.99	0.78		--	.42***	.16	.05	-.03
4. Child Task Involved	3.86	0.71			--	.47***	-.11	-.01
5. Child Responsiveness	3.98	0.64				--	-.28**	-.11
6. Child Negativity Clean-up	0.18	0.20					--	.20*
7. PDR	8.64	5.39						--

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p < .001$ .

**Table 4**

Summary of regression analyses for maternal education, child gender, and mothers' sensitivity and control scores predicting children's behaviors ( $N = 119$ )

Dependent variable Step/Predictor	Model 1			Model 2		
	B	$\beta$	F(2,116)	B	$\beta$	F(4, 114)
<b>Child responsiveness</b>						
1 Gender	1.18	.23*		.54	.10	
Mothers' education	.28	.09	3.73*	-.08	-.03	
2 Maternal sensitivity				.81	.24*	
Maternal control				-1.14	-.30***	10.941***
<b>Child task involvement</b>						
1 Gender	1.58	.34***		1.11	.24**	
Mother's education	.13	.04	7.97***	-.17	-.06	
2 Maternal sensitivity				.99	.33**	
Maternal Control				-.50	-.15	12.22***
<b>Child communicative</b>						
1 Gender	1.24	.20*		1.21	.19*	
Mother's education	.58	.15	3.87*	.47	.12	
2 Maternal sensitivity				1.22	.30*	
Maternal control				.80	.19	.11
<b>Child clean-up negativity</b>						
1 Gender	-.07	-.17+		-.03	-.08	
Mother's education	-.02	-.08	2.14	-.01	-.01	
2 Maternal sensitivity				.01	.03	
Maternal control				.10	.32**	.14
<b>Maternal ratings PDR</b>						
1 Gender	-2.12	-.20*		-1.67	-.16+	
Mother's education	-.22	-.03	2.43+	-.14	-.125	

Dependent variable Step/Predictor	Model 1				Model 2	
	B	β	R <sup>2</sup> Total	F(2,116)	B	β
2 Maternal sensitivity	1.68	.24*				
Maternal control	2.60	.33*	.10			3.16*

+  $p < .10$ .

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*\*  $p < .001$ . (two-tailed) true?