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Parenting, Race, and Socioeconomic Status: Links to School Readiness

This study examined the link between socioeconomic status (SES) and school readiness, testing whether parenting (maternal sensitivity and negative behavior/intrusiveness) and financial stress mediated this association and if race moderated these paths. Participants included 164 mother-child dyads from African American and European American families. Findings supported moderated mediation hypotheses: maternal sensitivity mediated the link between SES and school readiness for European Americans only; maternal negative/intrusive behaviors mediated the link between SES and school readiness for both European Americans and African Americans. These results indicate that the meaning and effects of parenting behaviors can vary by racial groups, and findings obtained for European American families cannot be assumed to apply to ethnic minority families as well. Among the implications of these findings is that programs aimed at increasing school readiness and closing the achievement gap need to be mindful of the cultural context in which children are raised.

The achievement gap continues to be a national concern, as low-income and ethnic minority children perform at levels below those of children from higher income families and European American children. The economic impact of the achievement gap is tremendous; the McKinsey & Company (2009) report notes that the persistence of these achievement gaps would be the economic equivalent of a permanent national recession. Federal funding of early education programs designed to enhance school readiness among at-risk children (due to race and income) is one way social policies are working to combat the achievement gap (e.g., Head Start). Consideration of the home environment, however, children's first learning context, is critical when exploring strategies to address the achievement gap, especially in light of research showing that these gaps are evident prior to when children begin formal schooling (Lee & Burkham, 2002). A recent report released by Child Trends (Halle et al., 2009) documents income, racial, and ethnic gaps as early as 9 and 24 months in the Early Childhood Longitudinal Study-Birth Cohort, a nationally representative sample of children. Yet, processes explaining the origins of these gaps remain unclear. Thus, research is needed that explores the processes through which income and race are linked to children's school readiness.

There is no one agreed upon definition of school readiness, as researchers have defined school readiness in many ways, including children's cognitive skills, socioemotional skills, and attentional skills (Duncan et al., 2007).

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Key Words: parenting, race, school readiness, socioeconomic status.

In the present study, the focus is on children's cognitive skills, specifically pre-academic knowledge in children 36 months of age, the age at which many children begin to attend preschool and early learning programs such as Head Start. Guided by the ecological model (Bronfenbrenner & Crouter, 1983) the current study posited that socioeconomic status and financial stress are distal factors that will be indirectly associated with children's pre-academic knowledge through their association with the proximal variables of parenting behaviors. Further, some researchers suggest that the meaning of certain aspects of parenting may vary by ethnicity (Garcia Coll, 1990). Therefore, the present study investigated whether race moderated the links between socioeconomic status, parenting, and pre-academic knowledge. That is, are the paths linking socioeconomic status (SES), parenting, and pre-academic knowledge similar or different between African American and European American families?

Socioeconomic Status and School Readiness

Researchers investigating school readiness have often considered the role of SES. Although there is no one agreed upon definition of SES, scholars have conceptualized SES as income, education, occupation, welfare recipient, or some combination of these factors. Some researchers prefer to use education because it tends to be more stable (Tamis-LeMonda, Briggs, McClowry, & Snow, 2009), especially compared to income, which may fluctuate over time (Dearing, McCartney, & Taylor, 2001). Although education and income are strongly related, SES measures that combine two or more indicators accounted for the greatest amount of variance in children's achievement (White, 1982).

Numerous research studies have found that children from low-SES households have lower school readiness and academic competence compared to their higher SES peers (Zill, Collins, West, & Hausken, 1995). Analyses of the Early Childhood Longitudinal Study-Kindergarten Cohort (ECLS-K) by West, Denton, and Germino-Hausken (2000) indicated that children from low-SES homes had a lower performance on cognitive and language assessments at kindergarten entry compared to children from higher income homes. Specifically, children with more highly educated mothers had higher average reading proficiency and print

familiarity than children from less educated homes. The pattern was similar for children who were in households that did not receive welfare services compared to children who were in households that did. Similarly, an examination of younger children (i.e., 24 months) in the Early Childhood Longitudinal Study-Birth Cohort found that infants and toddlers from low-income households scored lower on cognitive assessments compared to infants and toddlers from higher income households (Halle et al., 2009).

Parenting and School Readiness

A large body of research documents the strong link between SES and children's outcomes; as such, researchers have turned to determining the mechanisms that account for the associations between SES and children's school readiness. Parenting has been identified as a potential mediator, explaining the link between SES and children's cognitive and achievement outcomes (Davis-Kean, 2005; Lugo-Gil & Tamis-LeMonda, 2008). Parents with higher SES may have financial resources that allow them to provide stimulating and enriching environments for their children. Parental education may also affect how parents interact with their children. Parental educational attainment is associated with sensitive parenting in early childhood (Tamis-LeMonda, Shannon, Cabrera, & Lamb, 2004).

Studies have suggested that differences in parenting between socioeconomic groups are, in part, responsible for the disparities in children's development (Brooks-Gunn & Markman, 2005; Lugo-Gil & Tamis-LeMonda, 2008). For example, Hart and Risley (1992, 1995) found that low-income mothers compared to higher income mothers were less responsive to and interactive with their children, and Raviv, Kessenich, and Morrison (2004) found that maternal sensitivity was associated with children's language at 36 months. Further, sensitive and nurturing parenting has been linked to better school readiness outcomes for children, including early language knowledge and literacy development (Birch & Ladd, 1996; Dodici, Draper, & Peterson, 2003; Parker, Boak, Griffin, Ripple, & Peay, 1999; Pianta, 1997; Pianta, Nimetz, & Bennett, 1997; Pianta & Walsh, 1996). Tamis-LeMonda, Bornstein, and Baumwell (2001) found that maternal responsiveness during

infancy and early toddlerhood was associated with children's achievement of language milestones, and Mistry, Biesanz, Taylor, Burchinal, and Cox (2004) found that maternal sensitivity was significantly associated with expressive and comprehensive language skills at 36 months of age. In a sample of low-income African American children, Connell and Prinz (2002) found that parent-child interactions characterized as structured and responsive to the child's needs were positively related to school readiness.

Negative intrusive parenting has received less attention in studies of children's school readiness. This dimension of parenting behavior refers to the degree to which the parent interferes with the child's needs, interests, or behaviors above and beyond the developmental or safety needs of the child. Intrusive and controlling behaviors include unnecessarily restraining the child, consistently disrupting the child's efforts with the parent's own bids for attention, or verbally controlling the child with repeated and unnecessary direction. These behaviors reflect the parent's imposition of her or his own agenda onto the child and a failure to understand and recognize the child's effort to gain autonomy and self-efficacy (Egeland, Pianta, & O'Brien, 1993). Characterized by highly controlling and negative behavior directed toward the child, negative intrusiveness can undermine children's autonomy and confidence and has been linked to negative child outcomes, including regulatory and socioemotional problems (Heller & Baker, 2000; Mistry, Melsch, & Taheri-Kenari, 2003; Rubin, Burgess, Sawyer, & Hastings, 2003) and lower academic achievement (Culp, Hubbs-Tait, Culp, & Starost, 2000).

Maternal negativity is also related to SES. Belsky, Bell, Bradley, Stallard, and Stewart-Brown (2007) found that income-to-needs ratio and maternal education were negatively correlated with maternal negativity (negative regard or harshness), such that lower income and lower education were associated with more maternal negativity. Tamis-LeMonda et al. (2009) found that African American mothers with more education were more likely to use maternal sensitivity (e.g., positive affect, responsiveness) than maternal control (e.g., negative affect, intrusiveness) during parent-child interactions, whereas mothers with less education showed equivalent levels of sensitivity and control during parent-child interactions.

Lugo-Gil and Tamis-LeMonda (2008) examined parenting quality as the mechanism linking SES and cognitive development. Parenting quality was measured with direct assessments of parent-child interactions (maternal sensitivity, positive regard, and cognitive stimulation) and the quality of the home environment using the HOME scale. The researchers found that family resources, including family income and maternal education, indirectly affected children's cognitive development via parenting quality. Mistry, Biesanz, Chien, Howes, and Benner (2008) also examined linkages among SES, parenting, and children's cognitive development. In this study, SES was operationalized as income-to-needs ratio, maternal education, and welfare receipt; parenting included an observational assessment of maternal sensitivity, cognitive stimulation, and positive regard termed *maternal supportiveness* as well as language and literacy stimulation in the home environment, and parenting stress. Results indicated that SES significantly predicted maternal supportiveness, language and literacy stimulation, and parenting stress. Maternal supportiveness and language and literacy stimulation in turn predicted children's cognitive development. These studies provide empirical support for the role of parenting in explaining links between SES and children's cognitive development. This research, however, has focused on low-income populations, and it is unclear to what extent these relations hold across various levels of SES.

Race Variations in SES, Parenting, and School Readiness

Determining the linkage between SES, parenting, and school readiness is made more complex by the confound between SES and race. Over 60% of African American children in the United States under the age of 6 live in low-income households compared to 30% of White children (Kreider & Fields, 2005; National Center for Children in Poverty, 2007; Proctor & Dalaker, 2003). Duncan and Magnuson (2005) contended that the Black-White school readiness gap parallels the economic gap between racial groups, an indication of the difficulty in ascertaining the unique relations between SES and race and children's pre-academic knowledge. Work by Coley (2002) using the ECLS-K data set indicated that nearly all racial and ethnic gaps in reading and math disappeared when SES was taken into

account. Yeung and Conley (2008), however, did not find that family income mediated the Black-White score gap in language skills, literacy, and problem solving in children ages 3–12. Complicating this issue is the potential notion that the meaning of income or SES may not be equitable across racial groups because ethnic minority children are more likely to experience “a range of cumulative, chronic, and deleterious disadvantage” (Raver, Gershoff, & Aber, 2007, p. 112).

Further, the link between SES, parenting, and school readiness may vary by race. Studies have noted the differential association between parenting and child outcomes across ethnic groups (Baldwin, Baldwin, & Cole, 1990; Deater-Deckard & Dodge, 1997; Dornbusch, Ritter, & Steinberg, 1991). At times, African American parenting has been viewed as being harsher and stricter compared to European American parenting. When African American parenting is seen to occur within a broader sociohistorical context of poverty, prejudice, discrimination, and disenfranchisement, and to be more influenced by religion and familial values (Brooks-Gunn & Markman, 2005; Garcia Coll et al., 1996; Julian, McKenry, & McKelvey, 1994; McAdoo, 1988; Phinney & Landin, 1998), however, it is viewed as strength based.

Research also suggests that parenting may be linked differently to child outcomes for African American children compared to European American children (for reviews, see Bugental & Grusec, 2006; Ispa et al., 2004). In their examination of whether parenting and material resources were the mechanisms through which income was linked to children’s cognitive skills and socioemotional competence in kindergarten, Raver and colleagues (2007) found material resources to be a mediator across racial and ethnic groups, but they also found that parenting processes, such as warmth and provision of stimulating activities, mediated the link between income and children’s outcomes, with the magnitude of this finding varying across ethnic groups (unstandardized coefficient was 1.93 for European Americans and 1.31 for African Americans). Previous research indicates that observations of parenting, and African American parenting in particular, may include both sensitive and controlling behaviors (Tamis-LeMonda et al., 2009), sometimes called “no nonsense parenting” or “tough love” (Baldwin et al., 1990; Brody & Flor, 1998). Thus, there

is a need to examine whether parenting as a mechanism linking SES and children’s school readiness differs for African American and European American children.

A further aim of this study was to understand mechanisms that may explain the link between SES and parenting, and subsequently to children’s pre-academic knowledge. The financial stress paradigm postulated by Conger and colleagues (1992, 1993) contends that, when parents have limited income or resources, they are more likely to feel stress related to this lack of income, which in turn hinders their ability to be responsive to their child’s needs. In their examination of this model, Conger et al. (1992, 1993) found that economic pressure led to parental depression and disrupted parental discipline, which in turn led to poor behavior for 12- to 14-year-old adolescents. Testing this model with preschool-age children, Linver, Brooks-Gunn, and Kohen (2002) found that income was linked to young children’s cognitive development through maternal distress and parenting practices. African American families and children are more likely to live in poverty and to be exposed to more stressors beyond income (McLoyd, 1990); thus there is a potential that this paradigm may be more relevant for African Americans than for European Americans.

Current Study

The current study explored two pathways that might explain the association between SES and children’s pre-academic knowledge. The first model included only parenting, and the second model added financial stress to the analysis. We also were interested in testing the comparability of these models for African American and European American children. The research questions guiding this study were (a) does parenting mediate the association between SES and pre-academic knowledge and does race moderate this association and (b) does financial stress mediate the path from SES to parenting and pre-academic knowledge, and does race moderate this association?

METHOD

Participants

Participants ($N = 164$) were drawn from an urban community via fliers and postings at birth

and parenting classes as well as through mailings and phone contact inviting participation in a longitudinal study of child health and development. To reduce the typical confound between SES and race, recruitment was focused on four groups: African American middle-income, African American low-income, European American middle-income, and European American low-income families (these groups were used to guide recruitment only, not for analytic purposes). Fifty-seven percent ($n = 94$) of the participating families were African American, and 43% ($n = 70$) were European American. Mother-child dyads were all the same race. The sex distribution of children was comparable across the race groups, with 48% of the European American children being girls and 52% of the African American children being girls. At the 3-month time point (the first time point in the original study), maternal average years of education was 13.46 ($SD = 2.68$; range = 10–20) for African Americans and 15.54 ($SD = 2.50$; range = 10–20) for European Americans; the difference was significant, $t(162) = 5.07$, $p = .01$. Despite recruitment goals, preliminary analyses revealed a significant income difference between the two race groups; the income-to-needs ratio averaged 3.99 ($SD = 2.95$) for European Americans and 2.32 ($SD = 1.99$) for African Americans, $t(159) = 4.00$, $p < .01$. The average family size was not significantly different across racial groups. Marital status and race were not independent, $\chi^2(3, 164) = 10.68$, $p < .05$; European American families were more likely to be married or cohabiting (90% of European American compared to 70% of African American families; a total of seven families in each group were classified as cohabitating specifically), and African American families were more likely to be single, never-married (26% of African American families compared to 8% of European American families).

Measures and Procedure

Control variables. Mother's verbal ability was assessed with the Peabody Picture Vocabulary Test-III (Dunn & Dunn, 1997). The PPVT-III is an untimed measure that assesses an examinee's level of vocabulary acquisition. Marital status and child gender were also used as control variables.

SES. Mothers provided information on family income and their education level at child ages 3, 6, 12, 30, and 36 months. Each family's income-to-needs ratio (INR) was computed by dividing the total family income by the poverty threshold for the appropriate family size, as determined by the U.S. Department of Health and Human Services. An index for SES was created by standardizing INR and maternal education level and taking the average of these variables across the time points. Bivariate correlations of SES across the four time points revealed consistency across time, with stability coefficients ranging from .78 to .92.

Parenting behaviors. Maternal behavior was observed during a 10-minute semi-structured mother-child free-play episode at 12 months of child age and during a 10-minute puzzle completion task at 24 months and 36 months of child age. Both tasks were conducted during laboratory visits with the mother and child. For the free-play task, mothers and children were presented with a standardized set of toys and asked to play as they normally would during the day; the interaction lasted for 10 minutes. For the puzzle task, mothers and children were seated at a table, a puzzle was placed before them, and the pieces were removed. Mothers were informed that this was a task for the child, but they could help in any way they wanted. After the completion of the first puzzle, a second (and third if necessary) puzzle of increasing difficulty was given to the child. If the third puzzle was completed before the 10 minutes had passed, the mother was asked to continue playing with the child and third puzzle for the remainder of the time. The mother-child interactions at each time point were videotaped for later coding.

Trained and reliable coders assessed seven dimensions of maternal behavior adapted from Egeland and Heister (1995) and the NICHD Early Child Care Research Network (1997). Each behavioral dimension was double coded on a 5-point scale at 12 months and a 7-point scale at 24 months and 36 months (for the current analyses, the 7-point scale was calibrated to make it comparable with a 5-point range and distribution). Interrater disparities were resolved by conferencing. Coders were not race matched with participant families; rather African American and European American coders were randomly assigned. Every pair of coders maintained a minimum .80 intraclass correlation on each

dimension, which included the following: (a) a *global sensitivity* scale that rated the mother's responses to the child's signals of emotional and physical needs (e.g., responds warmly to child bids and anticipates the physical and emotional needs of her child); (b) an *intrusiveness* scale that rated the degree to which the mother imposed her agenda on her child (e.g., physically restraining the child or dominating the interaction with unnecessary verbal direction); (c) a *detachment* scale that rated the mother's emotional involvement and degree of physical activity with the child (e.g., rarely making eye contact, verbal interaction, or responses to children's bids); (d) a *positive regard* scale that measured the mother's positive affect and delight in interacting with her child (e.g., warm vocal tone, physical affection, and smiling); (e) a *negative regard* scale that rated maternal expressions of negative affect and behaviors toward the child (e.g., disapproval, harsh physical manipulation, unexplained punishment); (f) an *animation* scale that rated the mother's enthusiasm for her child (e.g., enthusiastic vocal tone and facial animation); and (g) a *stimulation of development* scale that rated mother's cognitive stimulation of the child (e.g., labeling materials, encouraging verbalizations, and relating ongoing activities to beyond the current context). The validity of these scales is supported by work demonstrating their convergent validity with other measures of the home environment such as the Home Observation for Measurement of the Environment (NICHD Early Child Care Research Network, 2006), as well as their predictive validity within socioeconomically and ethnically diverse samples (Mills-Koonce et al., 2007) and specifically within African American subsamples (Propper, Willoughby, Halpern, Cox, & Carbone, 2007).

From the 12-month observations, composite variables were constructed from these scales based on a principal factor analysis followed by a promax (oblique) rotation for identifying patterns of underlying structure. A scree test suggested only two meaningful factors. In interpreting the rotated factor pattern, an item was said to load on a given factor if the loading was .40 or greater for that factor and was less than .40 for any other factor. Using these criteria, five items loaded on the first factor and two items loaded on the second factor. An overall composite for sensitive parenting was created by summing the global sensitivity, detachment (reversed), positive regard, animation, and stimulation of

development scales (factor loadings were .94, .78, .84, .62, and .85, respectively). An overall composite for negative/intrusive behavior was created by summing the intrusiveness and negative regard scales (factor loadings were .61 and .67, respectively). The intraclass correlations for the sensitivity and negative/intrusive composites were .90 and .85, respectively. At 24 and 36 months, principal factor analysis followed by promax (oblique) rotation was conducted and produced a two-factor solution. A sensitivity composite and a negative/intrusive composite were thus created using the same scales at 12 months. The scores for the 12-, 24-, and 36-month sensitive parenting composites were averaged to create the sensitive parenting score used in the current analyses, as were the 12-, 24-, and 36-month scores for the negative/intrusive behaviors.

The factor structure of parent-child observations was similar for African Americans and European Americans. Among both racial groups, sensitivity, detachment (reversed), positive regard, animation, and stimulation of development consistently loaded on one factor (deemed sensitive parenting), and intrusiveness and negative regard consistently loaded on a second factor. The factor loadings for sensitive parenting ranged from .40 to .94 for African Americans and .41 to .92 for European Americans. The factor loadings for negative/intrusiveness ranged from .66 to .98 for African Americans and .51 to .89 for European Americans. In addition these items were moderately to strongly correlated in both groups: correlations among the sensitive parenting items ranged from .32 to .73 for African Americans and from .55 to .75 for European Americans; negative/intrusive items were correlated at .69 for African Americans and .58 for European Americans.

Financial stress. Mothers reported on perceptions of financial stress at 12, 30, and 36 months of child age. Financial stress was assessed with four items adapted from the Chronic and Acute Financial Problems Measure (Cutrona, 2000), designed to reflect specific needs that cannot be met because of financial hardship (sample item: "We can afford the home we need"). Participants responded to items on a 4-point Likert scale ranging from 1 (*strongly agree*) to 4 (*strongly disagree*). Scores at 12, 30, and 36 months were averaged to create an index of financial stress,

with higher scores indicating greater financial stress ($\alpha = .81$).

Pre-academic knowledge. At 36 months, children were assessed with the Bracken Basic Concepts Scale (BBCS-R; Bracken, 1998). The BBCS is an age-normed measure of cognitive abilities consisting of 11 subtests. The 5 administered subtests consisted of a 10-item Colors test, a 10-item Letter Identification test, a 14-item Numbers/Counting test, a 7-item Comparisons test, and a 20-item Shapes test. Each item was scored either 1 or 0 for pass or fail. Scores on the 5 subtests were then summed and converted into a standard with a mean of 100 and standard deviation of 15 to create the BBCS School Readiness Composite.

RESULTS

Preliminary Analyses

Table 1 provides the means, standard deviations, and ranges for parenting behaviors, parenting stress, and pre-academic knowledge scores for the two race groups. Bivariate correlations of the variables of interest were conducted by race group (see Table 2). *T* tests indicated that the racial gap in pre-academic knowledge was evident at 36 months, with European American children scoring higher on the Bracken school readiness scale than African American children, $t(162) = 6.88, p < .001$. SES was positively correlated with pre-academic knowledge, and this association was stronger among African Americans ($r = .60, p < .001$) than among European Americans ($r = .31, p < .01$); this difference in magnitude was significant, $z = -2.38, p < .05$. We also tested whether the effect of race on school readiness remained

Table 1. *Descriptive Statistics for Stress, Parenting Behaviors, and School Readiness by Race*

	African American (<i>n</i> = 94)	European American (<i>n</i> = 70)
Financial stress		
<i>M</i>	8.31	6.69
<i>SD</i>	2.80	2.61
Range	4–16	4–16
Sensitivity		
<i>M</i>	–0.33	0.40
<i>SD</i>	0.84	0.69
Range	–2.51–1.73	–1.52–1.48
Negative/intrusive		
<i>M</i>	0.38	–0.48
<i>SD</i>	0.82	0.57
Range	–1.39–2.36	–1.33–0.94
Pre-academic knowledge		
<i>M</i>	93.50	112.44
<i>SD</i>	17.42	17.49
Range	65–140	77–144

significant when controlling for SES. An analysis of covariance indicated that indeed racial differences in school readiness remained, $F(2, 163) = 21.37, p < .001$.

Path Analysis

Given our goals of examining the mechanisms that explain why SES is related to school readiness and whether these associations are moderated by race, we conducted multiple group path analyses using MPlus 5.0. Evidence of mediation was determined by evaluating the significance of the indirect effect (Bollen, 1987) and using bias-corrected confidence intervals.

Table 2. *Bivariate Correlations by Race (N = 164)*

Variables	SES	Financial Hardship	Sensitive Parenting	Negative/Intrusive Parenting	Pre-academic Knowledge
1. SES	—	–.47***	.61***	–.55***	.60***
2. Financial hardship	.50***	—	–.32**	.24*	–.34***
3. Sensitive parenting	.41***	–.24*	—	–.56***	.46***
4. Negative/intrusive parenting	–.49***	.39***	–.63***	—	–.55***
5. Pre-academic knowledge	.31**	–.08	.37**	–.50***	—

Note: African American above the diagonal, European American below the diagonal.

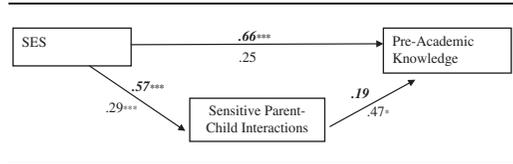
* $p < .05$, ** $p < .01$, *** $p < .001$.

This approach was chosen over the causal steps approach (Baron & Kenny, 1986) because of the limitations associated with that approach such as no direct estimate of the size of the indirect effect of X on Y or standard errors to construct confidence limits. Further, a mediation analysis conducted within the path analysis framework using MPlus allowed us to test multiple mediators, whereas the causal steps approach in regression analysis does not. Model fit was assessed by the obtained χ^2 , Confirmatory Fit Index (CFI), Tucker Lewis Index (TLI), and root mean square error of approximation (RMSEA). CFI values above .95, TLI values above .95, and RMSEA values below .05 are generally considered to indicate good fit (Bentler & Bonett, 1980; Brown & Cudeck, 1993). Models were estimated using maximum likelihood. All models included statistical controls for mother's verbal ability, marital status, and child gender. Figures contain the standardized path coefficients, and the indirect effects are presented in text.

Models in which paths were constrained to be equal for the two groups (African Americans and European Americans) were estimated first. These models did not fit the data (χ^2 values were over 150 and significant at the .000 level, CFI and TFI values were in the .4 range, and RMSEA values were in the .3 range). Models in which the paths for the two groups were free to vary greatly improved model fit, demonstrating that it was appropriate to proceed with the multiple group models.

Parenting models. We estimated two models that explored parenting behaviors as mediators of the SES-Pre-academic knowledge link. We began by first examining sensitive parenting followed by negative/intrusive parenting. Beginning with parental sensitivity, model fit was good, $\chi^2(16, 164) = 22.62, p = .12$ (χ^2 contribution for European Americans was 10.80; χ^2 contribution for African Americans was 11.81), CFI = .97, TLI = .96, RMSEA = .07. Socioeconomic status was a significant predictor of sensitive parent-child interactions for both African Americans and European Americans, such that higher socioeconomic status parents were more likely to engage in sensitive parent-child interactions. Sensitive parent-child interactions in turn was a significant predictor of pre-academic knowledge (see Figure 1), and the indirect effect was significant, $B = .14, SE = .07, p < .05$,

FIGURE 1. SENSITIVE PARENT-CHILD INTERACTIONS AS A MEDIATOR.



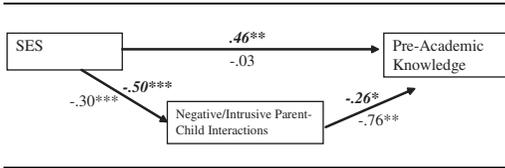
Note: Multiple group path analysis conducted in MPLUS. Model fit statistics: $\chi^2(16, 164) = 22.62, p = .12$; CFI = .97; TLI = .96; RMSEA = .07. Path analyses controlled for marital status, mother's verbal ability, and child gender. Results in bold italics are for African Americans. * $p < .05$, *** $p < .001$.

with a 95% confidence interval of 0.003 to 0.30, for European Americans. Sensitive parent-child interactions did not mediate the relation between SES and pre-academic knowledge for African Americans.

The model for negative/intrusive parenting fit the data well, $\chi^2(16, 164) = 13.24, p = .42$ (χ^2 contribution for European Americans was 7.29; χ^2 contribution for African Americans was 5.95), CFI = .99, TLI = .99, RMSEA = .02. SES was a significant predictor of negative/intrusiveness parenting for both African Americans and European Americans, such that lower socioeconomic status parents were more likely to engage in negative/intrusive parent-child interactions. Negative/intrusive parenting was, in turn, related to pre-academic knowledge (see Figure 2), and the indirect effects were significant, $B = .23, SE = .10, p < .05$, with a 95% confidence interval of 0.009 to 0.62 (European Americans) and $B = .13, SE = .05, p < .05$, with a 95% confidence interval of 0.008 to 0.25 (African Americans).

Financial stress models. Next, we incorporated financial stress into models that included parenting behaviors in order to test the hypothesis that economic stress mediated the association between SES and parenting behaviors. The first model examined financial stress and sensitive parenting as mediators, $\chi^2(17, 164) = 23.58, p = .17$ (χ^2 contribution for European Americans was 9.38; χ^2 contribution for African Americans was 14.20), CFI = .98, TLI = .96, RMSEA = .06. SES was a significant predictor of financial stress for both African Americans and European Americans, but financial stress did not, in turn, predict sensitive parenting (see

FIGURE 2. NEGATIVE/INTRUSIVE PARENT CHILD INTERACTIONS AS A MEDIATOR.



Note: Multiple group path analysis conducted in MPLUS. Model fit statistics: $\chi^2(16, 164) = 13.24, p = .42$; CFI = .99; TLI = .99; RMSEA = .02. Path analyses controlled for marital status, mother's verbal ability, and child gender. Results in bold italics are for African Americans. * $p < .05$, ** $p < .01$, *** $p < .001$.

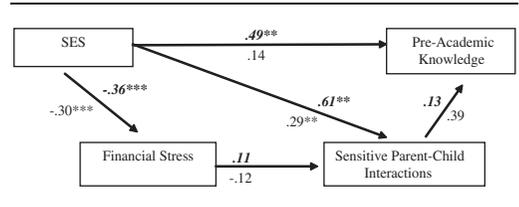
Figure 3). Thus, this model was not supported for African American or European American families. The second model examined financial stress and negative/intrusive parenting as mediators, $\chi^2(17, 164) = 21.51, p = .15$ (χ^2 contribution for European Americans was 10.80; χ^2 contribution for African Americans was 10.71), CFI = .99, TLI = .98, RMSEA = .04. SES was a significant predictor of financial stress for both African Americans and European Americans, but financial stress did not, in turn, predict negative/intrusive parenting (see Figure 4). Thus, this model was not supported by our data.

DISCUSSION

The main goal of this study was to examine the associations among SES, race, parenting, financial stress, and children's pre-academic knowledge at 36 months of age in a sample selected to reduce the confound between income and race. More specifically, we tested a moderated mediation hypothesis, exploring whether parenting behaviors mediated the association between SES and pre-academic knowledge and if race moderated this path. Our findings suggest that the factors that mediate the association between SES and pre-academic knowledge do differ between African American families and European American families.

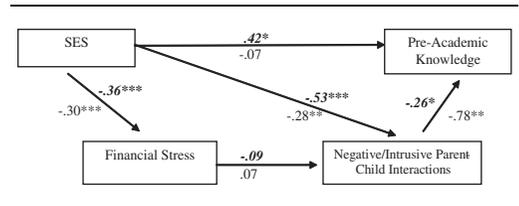
In this sample, negative/intrusive parenting was found to mediate the association between SES and children's pre-academic knowledge scores for both African American and European American families such that as SES decreased, negative/intrusive parenting behaviors increased, which were in turn associated with children's lower pre-academic knowledge scores. The effect was weaker, however, for

FIGURE 3. FINANCIAL STRESS AND SENSITIVE PARENTING AS MEDIATORS.



Note: Multiple group path analysis conducted in MPLUS. Model fit statistics: $\chi^2(17, 164) = 23.58, p = .17$; CFI = .98; TLI = .96; RMSEA = .06. Path analyses controlled for marital status, mother's verbal ability, and child gender. Results in bold italics are for African Americans. ** $p < .01$, *** $p < .001$.

FIGURE 4. FINANCIAL STRESS AND NEGATIVE/INTRUSIVE PARENTING AS MEDIATORS.



Note: Multiple group path analysis conducted in MPLUS. Model fit statistics: $\chi^2(17, 164) = 21.51, p = .15$; CFI = .99; TLI = .98; RMSEA = .04. Path analyses controlled for marital status, mother's verbal ability, and child gender. Results in bold italics are for African Americans. * $p < .05$, ** $p < .01$, *** $p < .001$.

the African American children than for the European American children. This finding adds to the literature that has found associations between negative/intrusive parenting and child outcomes to vary by race, with some finding negligible and others finding even beneficial effects of more controlling parenting for African American children, especially when also paired with parental warmth (Baldwin et al., 1990; Brody & Flor, 1998; Ispa et al., 2004; McLoyd & Smith, 2002; Pungello, Iruka, Dotterer, Mills-Koonce, & Reznick, 2009). The present study also adds to the literature by examining how such parenting practices may mediate the association between SES and pre-academic knowledge in early childhood, an important contribution given the widespread concern over school readiness.

Some researchers have suggested the moderating effect of race on the association between negative/intrusive parenting and child outcomes

is due to the different meaning these behaviors may have across groups (Deater-Decker & Dodge, 1997). Parke and Buriel (2006) suggested that although the socialization practices of many African American families are often described as harsh and strict, these descriptions often neglect to acknowledge the adaptive value such strategies may have, given the setting in which many African American families must raise their children, with the increased risk associated with more dangerous neighborhoods. Thus, the environmental context as well as differences in interpretations of the meaning of specific parenting behaviors may contribute to the moderating effect for race found here.

Race was also found to moderate the path from SES to sensitive parenting to pre-academic knowledge. The pattern differed from that found for negative/intrusive parenting in that sensitive parenting was found to be a significant mediator for only the European American families. Although SES was associated with sensitive parenting for both race groups such that as SES decreased so did sensitive parenting, the indirect effect of sensitive parenting linking SES and pre-academic skills was not significant for African Americans. Whereas much prior work has demonstrated positive associations between sensitive parenting and child outcomes (e.g., Baumwell, Tamis-LeMonda, & Bornstein, 1997; McCabe, Clark, & Barnett, 1999; Mistry et al., 2004), some have failed to find this association when specifically examining cognitive ability. Raver et al. (2007) investigated the association between positive parenting and both socio-emotional and cognitive outcomes in a diverse sample and found that although positive parenting was significantly associated with the socioemotional competence, the link between positive parenting and cognitive skills was not supported. Similarly, in their examination of the association between the quality of parent-child interactions and social skills, expressive and receptive communication skills, and school readiness in a sample of low-income African American kindergarten aged children, Connell and Prinz (2002) found higher quality parenting was associated with better social and language skills, but did not find a significant association between parenting and overall cognitive performance. Our findings suggest sensitive parenting is a mediator between SES and cognitive ability for European American children but not for African American children.

Some scholars have suggested that measurement issues may play a role in understanding this moderating effect of race, both in terms of measuring cognitive outcomes as well as parenting (see Raver et al., 2007). Concerning measurement of cognitive performance, although earlier measures may not have attended to cultural equivalence issues as much as they might have, most current developers of such tests do address this issue specifically in both item development and standardization in order to assure assessments are culturally fair. For example, with the Bracken used here, care was taken to remove bias in items and include a representative sample in the standardization and development of norms (Bracken, 1998). In contrast, more questions remain concerning the assessment of parenting, especially on dimensions of parental expressions of warmth and control (e.g., Simons et al., 2002).

This study also tested whether financial stress accounted for the associations between SES and parenting in the models, again testing if race moderates these paths. The results did not support the indirect path through financial stress for either race group. As noted above, prior research has found a link between financial stress and child outcomes via parenting behaviors (Conger et al., 1992, 1993). Conger examined these associations with adolescents and their families, finding increased economic pressure to be associated with higher parental depressed mood, which, in turn, was associated with poorer parenting, which, in turn, was associated with adolescents' poor behavior and school performance. Perhaps during the preschool years, the path between SES and parenting behaviors and cognitive outcomes is accounted for by factors other than financial stress per se. Linver et al. (2002) examined the financial stress model with preschool-aged children predicting to cognitive ability and behavior problems, finding that lower family income was associated with increased maternal emotional stress, which, in turn, was associated with poorer parenting practices, which, in turn, were associated with increased behavior problems. Similar to the results found here, however, this path was not supported when predicting to cognitive ability.

The present study provided a unique opportunity to examine mechanisms linking SES and school readiness. Limitations of the study must be acknowledged, however. First, although the sampling technique drew European American and African American participants from

low- and high-SES backgrounds, it must be noted that even in this sample race and SES were not completely unrelated. Thus, the conclusions concerning the associations with SES and race need to be interpreted with some caution. Further, the sample only included African American and European American families, thus limiting the generalizability of the findings to other racial and ethnic groups. Also, the nonexperimental design results in an inability to make causal inferences from the data. Finally, another limitation is that other factors that have been found to influence cognitive outcomes in young children (e.g., child-care experience, parental involvement, socioemotional behavior) were not included in our analysis.

Despite these limitations, the results suggest important implications for research concerning cognitive outcomes in young children as well as the implementation of intervention programs aimed at increasing the school readiness of young children at risk for poor academic outcomes. Concerning research, this work suggests the associations between race and young children's cognitive outcomes may be separate and unique from the SES-school readiness link. Given that race and SES are often confounded in this literature, care should be taken when results are interpreted. Further, these results add to the growing literature suggesting that the meaning and effects of different parenting behaviors can vary by racial groups, and findings obtained for European American families cannot be assumed to apply to ethnic minority families as well. Additional studies are needed to comprehensively examine factors that account for the different meaning or effect of SES for European American compared to African American families and children. Here, the associations between sensitive and negative/intrusive parenting behaviors and pre-academic knowledge in young children were found to vary by race. Further, the models were found to differ for sensitive and negative/intrusive parenting. Future work needs to examine both of these aspects of parenting and not assume they are different aspects of the same construct.

Concerning the implementation of intervention programs, this research underscores the importance of intervening early by adding to the growing body of evidence that the achievement gap emerges prior to school entry (Halle et al.,

2009). Also, programs that are aimed at increasing school readiness and closing the achievement gap need to be mindful of the cultural context in which children are raised, being sure to focus on culturally relevant practices that are beneficial for children's development. Findings from this study suggest that focusing on enhancing sensitive and responsive parenting and reducing negative/intrusive parent-child interactions is likely beneficial for children. It is also critical, however, to utilize culturally informed multidimensional aspects of parenting, especially when concerned with strengthening African American children's pre-academic skills, thereby reducing the achievement gap. Furthermore, policies and funding are needed that support and attend to the early care and development of children through programs, initiatives, and interventions while also considering the interplay between family economic situations and culture (e.g., Early Head Start, home visitation programs, etc.). With increased understanding and consideration of the full cultural and family context in which young children are developing and the mechanisms by which these factors are associated with young children's outcomes, programs aimed at increasing the early cognitive and school readiness capabilities of the most vulnerable children may be more effective in reaching these goals.

NOTE

This study was supported by The North Carolina Child Development Research Collaborative, which is funded by the National Science Foundation through a Children's Research Initiative Grant #BCS-0126475. The authors would like to thank all the families who participated in the Durham Child Health and Development Study and the research assistants for their valuable help in collecting these data.

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