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### Mother-Infant Interactions in Early Head Start: A Person-Oriented Within-Ethnic Group Approach

Christy Brady-Smith<sup>a</sup>, Jeanne Brooks-Gunn<sup>b</sup>, Catherine S. Tamis-LeMonda<sup>c</sup>, Jean M. Ispa<sup>d</sup>, Allison Sidle Fuligni<sup>e</sup>, Rachel Chazan-Cohen<sup>f</sup> & Mark A. Fine<sup>d</sup>

<sup>a</sup> Columbia University, 525 W. 120th St., New York, NY, 10027, USA

<sup>b</sup> Columbia University

<sup>c</sup> New York University

<sup>d</sup> University of Missouri-Columbia

<sup>e</sup> California State University, Los Angeles

<sup>f</sup> George Mason University

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# Mother–Infant Interactions in Early Head Start: A Person-Oriented Within-Ethnic Group Approach

Christy Brady-Smith, Jeanne Brooks-Gunn,  
Catherine S. Tamis-LeMonda, Jean M. Ispa, Allison Sidle Fuligni,  
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## SYNOPSIS

**Objective.** This article identifies patterns of mothering in low-income families from three ethnic groups and explores whether those patterns yield similar associations with child outcomes. **Design.** A person-centered within-group approach was used to examine observed patterns of mothering among European American ( $n = 740$ ), African American ( $n = 604$ ), and Mexican American ( $n = 322$ ) low-income mothers and their 1-year-olds who were participating in the Early Head Start Research and Evaluation Project. Cluster analytic techniques were employed using four dimensions of mothering coded from videotapes: supportiveness, directiveness/intrusiveness, negative regard, and detachment. **Results.** Three similar mothering patterns were seen within each ethnic group: Supportive (48%–52%), Directive (29%–30%), and Detached (14%–19%). Although the patterns of mothering were similar, mean scores on discrete mothering behaviors differed across ethnic groups. A fourth pattern—Harsh—was found among European American and African American mothers and was characterized by high levels of negativity (5%–7%). Associations between mothering patterns and three child outcomes at ages 2 and 3 years (cognitive test score, emotional regulation, and engagement of mother) validated cluster solutions and revealed some variation in prediction across ethnic groups. However, Supportive mothering was optimal in all three ethnic groups. **Conclusions.** Within-group analyses permitted identification of ethnically meaningful mothering patterns. Across the ethnic groups, within-group structures of mothering were similar with comparable predictive power for child outcomes despite group differences in the magnitudes of mean scores for constructs such as supportiveness and directiveness.

## INTRODUCTION

Associations between early mothering of young children and children's well-being have been demonstrated in numerous studies (Bornstein, 2002; Collins, Maccoby, Steinberg, Hetherington, & Bornstein, 2000; Maccoby, 1992; Maccoby & Martin, 1983). The specific behaviors that constitute optimal parenting, however, may differ depending on the family's socioeconomic (SES) and ethnic background and the child's developmental level (Bornstein, 2002; Garcia Coll et al., 1996; Lieberman & Slade, 2000). Associations with child outcomes may also differ across ethnic and SES groups (Berlin, Brady-Smith, & Brooks-Gunn, 2002; Harkness & Super, 2002; Pettit, Bates, & Dodge, 1997; Sugland et al., 1995). However, few large-scale studies have adequately documented ethnic-specific

patterns of mothering due to the frequent confounding of ethnicity and poverty status or the inclusion of only one ethnic group in studies of low-income families. These limitations have resulted in a constrained view of normative developmental processes and positive mothering practices in low-income families, especially those of African American and Latin American descent (Brooks-Gunn, Klebanov, & Duncan, 1996; Garcia Coll et al., 1996; Greenfield, Keller, Fuligni, & Maynard, 2003; McLoyd, 1990, 1998).

All too often, mothering differences between ethnic groups are interpreted as *deficiencies* in one group rather than as *variations* that may be part of normative developmental processes and that may be due to other contextual factors such as income, particularly poverty. A plausible research strategy that avoids confounding ethnicity with poverty status is conducting within-group analyses; that is, to understand variation in developmental processes within a particular ethnic group with or without between-group comparisons (Furstenberg, Brooks-Gunn, & Morgan, 1987; Garcia Coll et al., 1996; McLoyd & Steinberg, 1998). Few studies have been able to take this approach given small sample sizes. In the present study, large numbers of families from three major ethnic backgrounds (European American, African American, and Latin American), all of whom were poor, were included in the Early Head Start (EHS) evaluation, allowing for within-group comparisons on individuals with similar demographic conditions.

Most research on mothering has used variable-centered analyses (e.g., factor analysis, regression analyses, structural equation modeling) to identify patterns of mothering and their links with child development. Variable-centered analyses are based on the assumption that the population being studied is relatively homogenous with regard to how variables are related to each other and to the outcome being studied (Laursen & Hoff, 2006; Magnusson, 2003; McCartney, Burchinal & Bub, 2006). Studies reviewed by Fuligni and Brooks-Gunn (2013), however, call into question the assumptions that (1) indices of mothering co-occur in a similar way across all ethnic groups and that (2) indices of mothering operate in a similar way on child outcomes across all ethnic groups. Person-centered approaches avoid these problems by (1) not assuming homogeneity among parenting indices and their association with child outcomes and (2) identifying groups or types of individuals who share particular parenting attributes (Magnusson, 2003). The present study aimed to complement the existing knowledge base by using a person-centered approach to examine patterns of observed parenting behaviors and the ways in which these patterns influenced child development in a multi-ethnic sample of low-income families.

Researchers vary in their views regarding the dimensions of mothering that are most salient and how dimensions may be defined, but a common distinction made by many scholars concerns the extent to which mothers are supportive or unsupportive in their parenting (Brooks-Gunn & Markman, 2005; Tamis-LeMonda, Briggs, McClowry, & Snow, 2008). Supportive mothering is often characterized by sensitivity, responsiveness, and positive regard as well as cognitive stimulation of children, whereas detachment, harshness, and intrusiveness or directiveness have been characterized as unsupportive. In the discussion that follows, the term directiveness is used rather than intrusiveness. This determination is based on findings that directive behaviors do not necessarily connote negative parenting in mothers who are not from the majority group in the United States (Isapa et al., 2004). Because studies of parenting have historically been based on the practices of European American middle-class mothers, it is critical to test the ecological validity of mothering behaviors and styles across SES and ethnic groups (Garcia Coll & Pachter, 2002; McLoyd & Steinberg, 1998).

Two key research questions guided our analyses. First, do mothering patterns differ depending on ethnic background? Second, are the mothering patterns identified within each ethnic group when the children are 1 year of age associated with children's development at ages 2 and 3? With regard to the first research question, we had several expectations. First, four mothering patterns were hypothesized—*Supportive*, *Directive*, *Harsh*, and *Detached*. The concept of Supportive mothering is based on a vast literature (Bornstein, 2002) and detailed in this Special Issue (Fuligni & Brooks-Gunn, 2013). Directive mothering would be characterized by moderate scores on sensitivity and negativity and coupled with directive behavior (akin to “no nonsense” parents; Brooks-Gunn & Chase-Lansdale, 1995). Harsh mothering would be seen in mothers who are very negative and forceful in presenting their agenda for play rather than the child's (Berlin et al., 2009; Deater-Deckard, Dodge, Bates, & Pettit, 1996). Detached mothering would be characterized by a lack of supportiveness, harshness, or directiveness and would generally be accompanied by flat affect, little or no eye contact, and/or ignoring of the child's bids for attention. Teenage mothers and mothers who are depressed are often more likely to be in this category of mothering (Moore & Brooks-Gunn, 2002). We tested whether these four patterns existed in each ethnic group. We expected similar mothering patterns for each ethnic group but that mean values on discrete mothering scores would differ. For example, although a Directive pattern might emerge in all groups, Directive scores might be higher for African American and Mexican American mothers than for European American mothers (Brody & Flor, 1998; Carlson & Harwood, 2003; Richman, Miller, & LeVine, 1992).

To address the second research question, we complemented the initial person-centered analyses with variable-centered methodology to evaluate the predictive validity of mothering patterns for later child outcomes. We focused on three child outcomes at age 2 and 3 years: cognitive ability, emotional regulation, and child engagement of mother. We chose these outcomes because they represent key domains of child development from infancy through early childhood (Shonkoff & Phillips, 2000), set the stage for later competencies in preschool and elementary school, and were assessed by different informants in this study. A trained interviewer assessed the first two outcomes in the child's home, and a trained coder assessed the third from videotaped interactions.

We expected to see strong and positive associations between cluster solutions characterized by supportive mothering behaviors and child outcomes within all three ethnic groups. However, given evidence that directive behaviors may be more normative and less predictive of negative child outcomes in African American than in European American families, fewer negative associations between child outcomes and directive mothering might be seen in the former group. At the same time, because we identified clusters within rather than across ethnic groups, it was possible that associations between parenting patterns and outcomes would be similar in all three groups.

## METHOD

### Sample

Mother-infant dyads were observed when the children were approximately 1 year of age in EHS. The sample described here includes 740 European American, 604 African American, and 322 Mexican American dyads. Information on child and family demographics was collected at the time of application to EHS, as described in Fuligni and Brooks-Gunn (2013).

## Measures

*Mothering.* Mothering was assessed using the Three Bag task when children were approximately 1 year of age. For details on the procedure and the six dimensions—sensitivity, positive regard, cognitive simulation, directiveness/intrusiveness (termed “directiveness” henceforth), negative regard, and detachment, see Fuligni and Brooks-Gunn (2013). The first three were correlated and were averaged to obtain the supportiveness measure. Thus, four dimensions were used in the cluster analyses.

*Maternal vocabulary.* At the 2-year interview, the Woodcock-Johnson Picture Vocabulary Test was administered to mothers. Spanish-speaking mothers were given a Spanish version (raw scores were standardized to an  $M = 100$  and  $SD = 15$ ). This measure was included as a covariate in models predicting 2- and 3-year child outcomes. Missing values (18%) were imputed using a maximum likelihood iterative process with inputs from all covariates (Schafer & Graham, 2002). Scores ranged from 52 to 130, with means of 96.53 ( $SD = 8.79$ ), 86.61 ( $SD = 7.60$ ), and 81.08 ( $SD = 9.56$ ), for European American, African American, and Mexican American mothers, respectively.

*Child measures.* At ages 2 and 3, children were assessed with the standardized Mental Development Index (MDI) of the Bayley Scales of Infant Development II (BSID-II; Bayley, 1993;  $M = 100$ ,  $SD = 15$ ). At 2 years, scores ranged from 49 to 134 with means of 92.62 ( $SD = 14.49$ ), 86.54 ( $SD = 12.45$ ), and 86.09 ( $SD = 13.38$ ) for European American, African American, and Mexican American children, respectively. At 3 years, scores ranged from 49 to 134, with means of 94.25 ( $SD = 12.41$ ), 86.82 ( $SD = 11.72$ ), and 88.97 ( $SD = 12.15$ ), respectively.

The Bayley MDI assessor also rated the child’s emotional regulation during testing using the Bayley Behavior Rating Scales (BRS; Bayley, 1993); for this reason, all models predicting BRS Emotional Regulation control for concurrent Bayley MDI score. Seven items were rated: negative affect, hypersensitivity to test materials, adaptation to change in test materials, attention to tasks, persistence in attempting to complete tasks, cooperation, and level of activity (1- to 5-point scale, with higher scores indicating more positive self-regulation). At 2 years, means for European American, African American, and Mexican American children were 3.65 ( $SD = .77$ ), 3.50 ( $SD = .86$ ), and 3.73 ( $SD = .75$ ), respectively. At 3 years, means were 3.94 ( $SD = .78$ ), 3.92 ( $SD = .75$ ), and 3.85 ( $SD = .76$ ), respectively.

Engagement of mother during the Three Bag interaction at 2 and 3 years was also used as a child outcome measure. Engagement was defined as the extent to which the child initiated and/or maintained interaction with the parent (see Fuligni & Brooks-Gunn, 2013). At 2 years, means for European American, African American, and Mexican American children were 4.50 ( $SD = 1.11$ ), 3.96 ( $SD = 1.19$ ), and 4.44 ( $SD = 1.11$ ), respectively. At 3 years, means were 4.87 ( $SD = 1.00$ ), 4.58 ( $SD = 1.00$ ), and 4.59 ( $SD = 1.03$ ), respectively.

## Analytic Strategy

Following the conceptual framework of our study, all analyses were performed separately for each ethnic group. Two methods of cluster analyses were employed: Ward’s method and  $k$ -means analyses (Aldenderfer & Blashfield, 1984). Next, mothering

patterns were dummy coded with the Supportive pattern as the referent category. Ordinary least squares multiple regression analyses were used to predict child outcomes from mothering patterns, with child and family characteristics entered as covariates: child male, child age in months at assessment, child first born, EHS treatment, mother teenager at child's birth, maternal education, maternal Woodcock-Johnson score, family living arrangements (lives with father, lives with relative, lives without other adults), family poverty level, and living in or near an urban area. The second step of these models included child outcome scores from previous waves to test whether associations found at 1 or 2 years predicted change over time.

## RESULTS

### Patterns of Mothering

Table 1 presents the mean levels of each of the four dimensions by mothering pattern and by ethnic group. Table 2 presents demographic characteristics by mothering pattern and by ethnic group. EHS treatment group and child gender did not significantly differentiate parenting pattern categories for any of the three ethnic groups.

*European American families.* Four mothering patterns were identified in the European American mothers: Supportive (50%), Directive (29%), Detached (14%), and Harsh (7%). Univariate comparisons showed differences by teenage parenthood and by education level across mothering patterns (Table 2). The highest percentages of teenage mothers were found in the Detached (28%) and Directive (26%) patterns,  $\chi^2(3, N = 740) = 12.96$ ,  $p < .01$  (effect size = .13). Mothers without a high school degree were more prevalent in the Harsh (49%) and Detached (39%) patterns,  $\chi^2(3, N = 740) = 28.28$ ,  $p < .001$  (effect size = .20).

*African American families.* Four patterns were consistent with those found for European American mothers (48% Supportive, 30% Directive, 16% Detached, and 5% Harsh). Mothering pattern classification differentiated mother-child dyads on teenage parenthood and education level in univariate comparisons (Table 2). The highest percentages of teenage mothers were found in the Detached (58%) and Harsh (52%) patterns,  $\chi^2(3, N = 604) = 22.00$ ,  $p < .001$  (effect size = .19). Mothers without a high school degree were also more prevalent in the Harsh (71%) and Detached (64%) patterns,  $\chi^2(3, N = 604) = 33.46$ ,  $p < .001$  (effect size = .24).

*Mexican American families.* K-means analyses validated the three-cluster solution for Mexican American mothers (52% Supportive, 29% Directive, 19% Detached). No Harsh pattern was identified. Univariate comparisons revealed differentiation on education level, whether the mother lived in or near an urban area, and whether the mother lived alone but did not differentiate based on teenage parenthood (Table 2). Mothers without a high school degree were more prevalent in the Detached (85%) pattern,  $\chi^2(2, N = 322) = 6.21$ ,  $p < .05$  (effect size = .14). Mothers classified in the Detached pattern also were much less likely to live in or near an urban area (30%) compared to those classified in the Supportive (58%) or Directive (60%) patterns,  $\chi^2(2, N = 322) = 21.94$ ,  $p < .001$  (effect size = .25). Mothers who lived alone were least likely to be classified in

**TABLE 1**  
Maternal Interaction Scores for 1-Year-Olds by Mothering Pattern and Ethnic Group

| Mothering Pattern | European American |           |           |            | African American |           |            |            | Mexican American |           |            |       |
|-------------------|-------------------|-----------|-----------|------------|------------------|-----------|------------|------------|------------------|-----------|------------|-------|
|                   | Supportive        | Directive | Detached  | Harsh      | Supportive       | Directive | Detached   | Harsh      | Supportive       | Directive | Detached   | Harsh |
| Supportiveness    | 4.99(.72)         | 4.08(.62) | 3.05(.62) | 3.29(.77)  | 4.24(.77)        | 3.29(.65) | 2.44(.65)  | 2.43(.51)  | 4.38(.72)        | 3.36(.65) | 2.50(.63)  | —     |
| Directiveness     | 1.33(.49)         | 2.86(.63) | 2.08(.85) | 4.51(.85)  | 2.02(.74)        | 3.97(.82) | 2.74(1.14) | 4.73(1.13) | 1.96(.76)        | 3.80(.79) | 2.84(1.15) | —     |
| Negative regard   | 1.06(.25)         | 1.26(.47) | 1.41(.55) | 2.54(1.05) | 1.28(.49)        | 1.89(.76) | 1.91(.70)  | 4.79(1.02) | 1.17(.39)        | 1.55(.66) | 1.63(.85)  | —     |
| Detachment        | 1.10(.30)         | 1.27(.46) | 3.07(.96) | 1.74(.86)  | 1.29(.50)        | 1.52(.61) | 3.72(1.08) | 2.82(1.31) | 1.18(.39)        | 1.21(.43) | 3.45(.78)  | —     |
| <i>N</i>          | 368               | 217       | 100       | 55         | 292              | 182       | 99         | 31         | 167              | 95        | 60         |       |

*Note.* *M* (*SD*) and percentages reported. ANOVA comparisons revealed significant mean differences for mothering score in each mothering pattern and each ethnic group (*ps* < .001, effect sizes .40–.79 for European Americans, .51–.61 for African Americans, .11–.76 for Mexican Americans).

**TABLE 2**  
Baseline Demographics by Mothering Pattern and Ethnicity

| Mothering Pattern               | European American |           |                 | African American |           |       | Mexican American |           |                 |
|---------------------------------|-------------------|-----------|-----------------|------------------|-----------|-------|------------------|-----------|-----------------|
|                                 | Supportive        | Directive | Harsh           | Supportive       | Directive | Harsh | Supportive       | Directive | Harsh           |
| Child characteristics           |                   |           |                 |                  |           |       |                  |           |                 |
| EHS treatment                   | 52                | 51        | 40              | 52               | 54        | 53    | 52               | 54        | 52              |
| Male                            | 47                | 47        | 63              | 48               | 52        | 64    | 52               | 62        | 64              |
| Maternal/Family characteristics |                   |           |                 |                  |           |       |                  |           |                 |
| Teenage (<19) at child's birth  | 16                | 26        | 23 <sup>a</sup> | 33               | 45        | 58    | 33               | 45        | 52 <sup>b</sup> |
| Less than high school degree    | 21                | 32        | 49 <sup>c</sup> | 36               | 49        | 64    | 36               | 49        | 71 <sup>d</sup> |
| Lives alone                     | 31                | 37        | 27              | 48               | 39        | 46    | 48               | 39        | 46              |
| Urban                           | 32                | 38        | 35              | 68               | 63        | 57    | 68               | 60        | 64              |
| <i>N</i>                        | 368               | 217       | 100             | 292              | 182       | 99    | 292              | 167       | 31              |

*Note.* Percentages reported. *N*s = 740 for European American, 604 for African American, and 322 for Mexican American. Rows without a superscript had chi-square comparisons that were not significant at  $p < .05$ .

<sup>a</sup> $\chi^2(3) = 12.96, p < .01$ . <sup>b</sup> $\chi^2(3) = 22.00, p < .001$ . <sup>c</sup> $\chi^2(3) = 28.28, p < .001$ . <sup>d</sup> $\chi^2(3) = 33.46, p < .001$ . <sup>e</sup> $\chi^2(2) = 6.21, p < .05$ . <sup>f</sup> $\chi^2(2) = 6.04, p < .05$ . <sup>g</sup> $\chi^2(2) = 21.94, p < .001$ .



the Directive (14%) parenting pattern versus the Supportive (27%) or Detached (24%) patterns,  $\chi^2(2, N = 322) = 6.04, p < .05$  (effect size = .13)

### Mothering Patterns and Child Outcomes

*Cognitive outcomes.* As seen in Table 3, for European American children, Directive compared to Supportive mothering was associated with lower scores on the MDI at 2 and 3 years, but these associations became marginally significant or nonsignificant when previous waves' scores were controlled, indicating that a negative association with Bayley MDI at 1 year explained the negative associations. Detached and Harsh mothering, compared to Supportive mothering, were associated with lower scores on the MDI at 2 and 3 years and were associated with decreasing scores over time.

African American children of Directive, Detached, and Harsh mothers had lower MDI scores at 2 and 3 years than children of Supportive mothers. At 2 years, these associations remained above and beyond the influence of 1-year cognitive scores. The associations found at 3 years, however, were fully explained by the negative association of these mothering patterns with cognitive development at 1 and 2 years.

For Mexican American families, mothering patterns at 1 year were not related to 2-year MDI scores. Directive mothering at 1 year was associated with lower MDI scores at age 3 years and with decreases over time from 2 to 3 years (see Step 2 of Table 3) compared to Supportive mothering. Detached mothering was associated with lower cognitive development scores at 3 years compared to Supportive mothering, but this association became nonsignificant when 1- and 2-year scores were controlled.

*Emotion regulation outcomes.* As seen in Table 4, for European American children, Directive versus Supportive mothering was associated with lower rates of child emotional regulation at 2 years, but this association was explained by lower scores at 1 year. Detached compared to Supportive mothering was associated with less emotional regulation at 2 years and decreases in emotional regulation from 1 to 2 years. No association was observed between Detached mothering and emotional regulation at 3 years, but controlling for previous waves' scores resulted in a positive relation, indicating that, although mean scores for children of Detached and Supportive parents were not significantly different at 3 years, the Detached group experienced a greater increase from 1 to 3 years than the Supportive group. Compared to Supportive mothering, Harsh mothering was associated with lower rates of emotional regulation at 2 and 3 years, but previous waves' scores explained these associations.

Compared to African American children of Supportive mothers, children of Harsh mothers showed less emotion regulation at 2 and 3 years. The association at 2 years was explained by lower emotional regulation at 1 year. The association at 3 years remained after controlling for previous waves. Detached compared to Supportive mothering was associated with less emotional regulation at 3 years, even after controlling for emotional regulation at previous waves. The Directive pattern was not associated with African American children's emotion regulation.

Directive mothering of Mexican American mothers was associated with decreases in child emotional regulation scores at 3 years compared to Supportive mothering, controlling for previous waves' scores. Detached mothering was associated with decreases in emotional regulation at 2 years relative to Supportive mothering. Although the 2-year association remained after controlling for the previous wave's score, the initial negative

**TABLE 3**  
2- and 3-Year-Olds' MDI Scores by Mothering Pattern and Ethnicity

| Step:          | European American |                 |                 |                 | African American |               |               |              | Mexican American |              |              |              |
|----------------|-------------------|-----------------|-----------------|-----------------|------------------|---------------|---------------|--------------|------------------|--------------|--------------|--------------|
|                | 2 years           |                 | 3 years         |                 | 2 years          |               | 3 years       |              | 2 years          |              | 3 years      |              |
|                | 1                 | 2               | 3               | 4               | 1                | 2             | 3             | 4            | 1                | 2            | 3            | 4            |
| Directive      | -3.41*(1.32)      | -2.38(1.22)     | -2.97*(1.24)    | -1.58(1.05)     | -2.80*(1.30)     | -2.50*(1.21)  | -2.84*(1.31)  | -1.10(1.14)  | -.05(1.85)       | -.05(1.76)   | -5.00*(1.88) | -4.24*(1.72) |
| Detached       | -6.71*** (1.78)   | -5.12** (1.63)  | -7.65*** (1.69) | -4.62*** (1.44) | -5.04** (1.68)   | -3.22* (1.58) | -4.05* (1.78) | -1.00(1.55)  | -2.31(2.36)      | -.68(2.28)   | -5.31*(2.40) | -3.07(2.21)  |
| Harsh          | -10.01*** (2.45)  | -7.39*** (2.26) | -9.04*** (2.13) | -4.85** (1.82)  | -8.42** (2.79)   | -5.65* (2.63) | -5.18(2.85)   | -1.85(2.46)  | —                | —            | —            | —            |
| 1 year MDI     |                   | .48*** (.05)    |                 | .18*** (.04)    |                  | .44*** (.06)  |               | .29*** (.06) |                  | .42*** (.08) |              | .12(.08)     |
| 2 year MDI     |                   | .34***          | .28***          | .43*** (.04)    |                  | .35***        | .32***        | .42*** (.05) |                  | .34***       | .22***       | .35*** (.07) |
| R <sup>2</sup> | .21***            |                 |                 | .43***          | .25***           |               |               | .43***       | .26***           |              |              | .34***       |

*Note.* Referent is Supportive mothering pattern. Betas are unstandardized and are derived from hierarchical linear regression models. All models include the following covariates: child male, child age (in months) at assessment, child first born, EHS treatment, mother teenager at child's birth, maternal education, maternal Woodcock-Johnson score, family living arrangements (lives with father, lives with relative, lives without other adults), family poverty level, and living in or near an urban area. MDI = Bayley Mental Development Inventory Score. Missing previous waves' scores were imputed using an expectation maximization iterative process with inputs from all covariates. Ns = 547 (489) for European American, 402 (373) for African American, and 232 (206) for Mexican American for year 2 (3).

\**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

**TABLE 4**  
2- and 3-Year-Olds' Emotional Regulation Scores by Mothering Pattern and by Ethnicity

| Step:          | European American |             |             |             | African American |             |              |             | Mexican American |             |             |             |
|----------------|-------------------|-------------|-------------|-------------|------------------|-------------|--------------|-------------|------------------|-------------|-------------|-------------|
|                | 2 years           |             | 3 years     |             | 2 years          |             | 3 years      |             | 2 years          |             | 3 years     |             |
|                | 1                 | 2           | 3           | 4           | 1                | 2           | 3            | 4           | 1                | 2           | 3           | 4           |
| Directive      | -.17*(.07)        | -.02(.06)   | -.09(.08)   | .02(.07)    | -.15(.10)        | -.07(.09)   | -.12(.07)    | -.04(.08)   | -.19(.11)        | -.09(.09)   | -.34**(.11) | -.28**(.11) |
| Detached       | -.41***(.10)      | -.18*(.08)  | -.20*(.10)  | -.08(.09)   | -.14(.12)        | -.04(.11)   | -.43***(.12) | -.24*(.11)  | -.37**(.14)      | -.27*(.12)  | -.28*(.14)  | -.20(.13)   |
| Harsh          | -.46***(.13)      | -.11(.12)   | -.36**(.13) | -.04(.12)   | -.39*(.19)       | -.15(.17)   | .55**(.18)   | -.32*(.16)  | —                | —           | —           | —           |
| 1 year ER      |                   | .27***(.04) |             | .06(.05)    |                  | .17**(.05)  |              | .02(.05)    |                  | .08(.06)    |             | .03(.07)    |
| 2 year ER      |                   |             |             | .20***(.05) |                  |             |              | .18***(.05) |                  |             |             | .20**(.07)  |
| Concurrent     |                   | .02***(.00) |             | .02***(.00) |                  | .02***(.00) |              | .01***(.00) |                  | .02***(.00) |             | .01*(.00)   |
| Bayley         |                   |             |             |             |                  |             |              |             |                  |             |             |             |
| MDI            |                   |             |             |             |                  |             |              |             |                  |             |             |             |
| R <sup>2</sup> | .14***            | .39***      | .22***      | .40***      | .07*             | .23***      | .16***       | .27***      | .15**            | .39***      | .27***      | .38***      |

*Note.* Referent is Supportive mothering pattern. Betas are unstandardized and are derived from hierarchical linear regression models. ER = emotional regulation. MDI = Bayley Mental Development Index. All models include the following covariates: child male, child age (in months) at assessment, child first born, EHS treatment, mother teenager at child's birth, maternal education, maternal Woodcock-Johnson score, family living arrangements (lives with father, lives with relative, lives without other adults), family poverty level, and living in or near an urban area. Missing previous waves' scores were imputed using an expectation maximization iterative process with inputs from all covariates. Ns = 584 (518) for European American, 443 (402) for African American, and 251 (220) for Mexican American for year 2 (3).

\**p* < .05. \*\**p* < .01. \*\*\**p* < .001.

association between Detached versus Supportive mothering and child emotional regulation at 3 years did not.

*Child engagement of mother.* As seen in Table 5, for European American children, Directive versus Supportive mothering at 1 year did not predict child engagement of mothers during the Three Bag task at 2 or 3 years. Detached mothering was associated with less engagement at 2 years and with decreasing engagement scores from 1 to 2 years. This negative association did not persist at 3 years. Harsh compared to Supportive mothering was associated with lower rates of engagement of mothers at 2 and 3 years and with decreases in engagement from 1 to 2 years. The negative association found at 3 years was fully explained by the negative associations found at 2 years.

Directive compared to Supportive mothering was associated with less child engagement of mothers at 2 years in African American families, but this negative association was fully explained by lower rates of engagement at 1 year. Detached and Harsh mothering were associated with less child engagement of mothers at 2 and 3 years compared to Supportive mothering. They were also associated with decreasing engagement over time.

At 2 years, Mexican American children of Detached mothers had lower engagement scores than children of Supportive mothers, even after the 1-year score was entered in the model, indicating negative change from 1 to 2 years. This association did not remain at 3 years. Directive mothering was associated with less engagement at 3 years than Supportive mothering, but this association was explained by previous waves' scores.

## DISCUSSION

Our study illustrates the benefits of using person-centered within-group analyses to complement and shed light on the numerous variable-centered findings currently reported in the literature. We identified ethnically meaningful patterns of mothering among low-income European American, African American, and Mexican American mothers of 1-year-olds and validated these patterns over time using variable-centered analyses linking these patterns to child outcomes. We chose to use clustering methods so that normative patterns could emerge from observed behaviors of individuals. A variable-centered approach would have assumed that the population was homogeneous (regardless of ethnicity) with respect to how parenting variables are related to each other and to child outcomes. Although we were constrained to use the same measures of mothering for all three groups, by defining patterns of mothering in relation to within-group norms rather than to the full sample, we allowed the magnitude of mothering scores to differ so that we could examine whether similar pattern structures would emerge in the various ethnic groups, and if so, whether they would predict child outcomes similarly across ethnic groups.

Our approach permitted indices of Supportive, Detached, Directive, and Harsh behaviors to differ in their structure and interrelations in European American, African American, and Mexican American families and allowed normative levels of each behavior within each group to be the benchmark. We did not set the dominant ethnicity's mothering style as the standard against which mothering was to be judged and thus may have reduced ethnic minority bias that could have existed in the videotaped coding procedure (e.g., Gonzales, Cauce, & Mason, 1996). Moreover, by using person-centered

TABLE 5  
2- and 3-Year-Olds' Engagement of Mother, Scores by Mothering Pattern and by Ethnicity

| Step:             | European American |              |            |             | African American |              |             |             | Mexican American |            |            |            |
|-------------------|-------------------|--------------|------------|-------------|------------------|--------------|-------------|-------------|------------------|------------|------------|------------|
|                   | 2 years           |              | 3 years    |             | 2 years          |              | 3 years     |             | 2 years          |            | 3 years    |            |
|                   | 1                 | 2            | 3          | 4           | 1                | 2            | 3           | 4           | 1                | 2          | 3          | 4          |
| Directive         | -.13(.10)         | -.09(.10)    | .02(.10)   | .03(.10)    | -.35**(.13)      | -.16(.13)    | -.03(.12)   | .02(.12)    | -.23(.16)        | -.15(.16)  | -.41*(.16) | -.30(.16)  |
| Detached          | -.59***(.14)      | -.46***(.14) | -.14(.14)  | .02(.14)    | -.80***(.16)     | -.61***(.16) | -.46**(.15) | -.34*(.16)  | -.58**(.20)      | -.43*(.22) | -.39(.21)  | -.14(.21)  |
| Harsh             | -.64***(.18)      | -.52***(.18) | -.43*(.18) | -.28(.18)   | -1.03***(.27)    | -.62*(.27)   | -.80**(.24) | -.64**(.25) |                  |            |            |            |
| 1 year engagement |                   | .15***(.04)  |            | .00(.04)    |                  | .28***(.05)  |             | .06(.05)    |                  | .14*(.07)  |            | .20**(.07) |
| 2 year engagement |                   |              |            | .23***(.05) |                  |              |             | .10*(.05)   |                  |            |            | .14*(.07)  |
| R <sup>2</sup>    | .19***            | .21***       | .09**      | .13***      | .17***           | .23***       | .14***      | .15***      | .12*             | .14*       | .20**      | .22***     |

Note. Referent is Supportive mothering pattern. Betas are unstandardized and are derived from hierarchical linear regression models. Step 1 includes following covariates: child male, child age (in months) at assessment, child first born, EHS treatment group, mother teenager at child's birth, maternal education, maternal Woodcock-Johnson score, family living arrangements (lives with father, lives with relative, lives without other adults), family poverty level, and living in or near an urban area. Missing previous wave's scores imputed using an expectation maximization iterative process with inputs from all covariates. Ns = 570 (504) for European American, 421 (381) for African American, and 254 (212) for Mexican American for year 2 (3).

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

mothering pattern classifications rather than numerous discrete parenting behavior variables, our method had the added benefit of simplicity and clarity (Laursen & Hoff, 2006) while still accounting for a significant amount of variance in the variable-centered child outcome models. We discuss our findings in terms of the parenting patterns that were identified and their relation to child developmental outcomes.

Although the mean scores across the four mothering behaviors differed among European American, African American, and Mexican American families, the within-group structures (i.e., how each pattern related to the group mean) of mothering were remarkably similar across groups, with one exception. Supportive, Directive, and Detached patterns emerged in all three ethnic groups; a Harsh pattern emerged in the European American and African American groups only. The largest groups of mothers in European American (50%), African American (48%), and Mexican American (52%) families displayed behaviors reflective of Supportive mothering. The Supportive mothering pattern emerged as the most beneficial for child cognitive, emotional, and child-parent relational development at ages 2 and 3 years for all three ethnic groups, especially when contrasted with Harsh or Detached mothering. Based on the body of research linking supportive mothering to cognitive and socioemotional child development, these results are consistent with our expectations (Bornstein, 2002; Maccoby & Martin, 1983).

A unique aspect of the study is that comparable proportions were classified as Supportive in Mexican American and African American mothers as in European American mothers. Nearly all of the cross-ethnicity comparison studies we reviewed reported lower scores on Supportive mothering practices among families of minority ethnicity when compared to European American families (Brooks-Gunn & Markman, 2005). Indeed, even the data from the present study indicate differences in mean scores of sensitivity across ethnic groups (see Table 1). However, in efforts to avoid some of the pitfalls inherent in cross-group comparisons and to obviate potential biases that may exist in coding mothering behaviors, substantial groups of low-income mothers were identified as interacting with their children in supportive ways when anchors were based on within-group—as opposed to between-group—scores. Importantly, the Supportive group for African American mothers displayed scores of directiveness ( $M = 2.02$ ,  $SD = .74$ ) that seem relatively low on a 7-point scale, but if contrasted with the scores for European American mothers ( $M = 1.33$ ,  $SD = .49$ ) could be considered moderate. This finding supports the view that a certain degree of “directiveness” may characterize Supportive mothering practices in African American families (Brody & Flor, 1998; Moore & Brooks-Gunn, 2002).

Directive mothering characterized almost one-third of all mothers. This group exhibits above-average directiveness but moderate sensitivity and low negative regard. Although smaller in magnitude than the negative associations found for Detached and Harsh mothering, children of mothers classified as Directive scored lower on cognitive development at age 3 than children of mothers classified as Supportive. This finding was consistent for all three ethnic groups. For African American and European American families, the negative association with cognitive development found at age 3 was explained by the negative association found at age 2 (i.e., the initial negative association found at age 2 remained, but did not increase over time; see Tamis-LeMonda, Bornstein, & Baumwell, 2001). For Mexican American families classified as Directive, however, negative associations with cognitive development, emotional regulation, and child engagement of mothers were found at age 3, and scores significantly decreased

from age 2 to age 3 for all but child engagement compared to families classified as Supportive. These findings indicate that above-group average directiveness may have negative implications for children—especially in terms of cognitive development—even when accompanied by low to moderate group-normed levels of negativity. It is unclear why, for Mexican American families, we see negative associations between Directive mothering and all three outcomes at 3 years, but not at 2 years. The cumulative influence model may explain this finding: To the extent that parents are stable in their parenting styles over time, it may be that the effects of directiveness are additive—exerting increased influence as children turn 3 years and seek more independence. However, why this would be true for one group but not another is not clear.

The Harsh pattern of mothering characterized 5% to 7% of the African American and European American dyads and none of the Mexican American dyads. This pattern of mothering elicited the strongest and most pervasive negative associations for children on cognitive development, emotional regulation, and child engagement of mother when contrasted with Supportive mothering. The broad range of negative associations found for both ethnic groups on measures of cognitive, emotional regulation, and engagement outcomes reflect those found by others (Berlin et al., 2009; Landry, Smith, Miller-Loncar, & Swank, 1997; Landry, Smith, Swank, Assel, & Vellet, 2001; Marfo, 1992).

The Harsh mothering pattern was not identified in the Mexican American sample. Sample size and extremely low rates of negative regard may have been factors. Specifically, 96% of the Mexican American mothers scored only a 1 or 2 on the 7-point negative regard scale, and no mothers received scores of 6 or 7.

Detached mothering emerged as a distinct pattern in all three ethnic groups, although within each group, fewer than 20% of mothers were identified as Detached. The overall pattern was that higher levels of Detached mothering (versus Supportive mothering) were related to less positive child cognitive, emotional, and engagement outcomes at ages 2 and 3; for the most part, this pattern was present for all three groups, although the outcomes most affected varied somewhat across ethnic groups. The fewest associations were found for cognitive development among Mexican Americans. The comparatively low rates of verbal interaction reported among Mexican American mothers and their young children (Beckwith & Cohen, 1984; Wasserman, Rauh, Brunelli, Garcia-Castro, & Necos, 1990) could be interpreted as Detached mothering. Less verbal interplay between mother and child is associated with lower vocabulary scores (Hart & Risley, 1992, 1995), but it also may reflect beliefs about the appropriateness of speaking to infants rather than truly uninvolved parenting.

The literature offers more support for links between Detached mothering and socioemotional outcomes than for links with cognitive outcomes (Keenan & Shaw, 2003; Main & Weston, 1981; Shaw et al., 1998). However, when detachment is interpreted as a lack of sensitivity or cognitive development, poorer outcomes in cognitive and language domains have been found (e.g., NICHD Early Child Care Research Network, 1999).

Our findings also suggest demographic risk factors associated with less optimal parenting patterns may vary by ethnicity. While low-income, teenage mothers and mothers with low education levels are often the targets of parenting intervention programs, it is also important to note that Mexican American mothers who lived in rural areas were also at risk for detached parenting.

Taken together, the wide array of associations between within-group parenting patterns assessed when children were 1 year of age and child cognitive, emotional, and

engagement outcomes at ages 2 and 3 suggests that the patterns we determined offer predictive validity for all three ethnic groups.

### IMPLICATIONS FOR PRACTICE, APPLICATION, AND POLICY

Although intervention programs aimed at improving mothering typically encourage supportive parenting and discourage directive, harsh, and detached mothering behaviors, our findings underscore the implicit notion that practitioners and researchers must be sensitive to the norms of the groups with which they are working and recognize that the constellation of parenting behaviors may vary for different ethnic groups. At the same time, although the magnitude of behaviors deemed as negative or detached may vary depending on the group, an overall pattern of parenting characterized by above-group average negativity or detachment may have negative repercussions on child cognitive, social, and emotional development. Numerous early intervention programs have had success in reducing negative mothering behavior (see reviews by Howard & Brooks-Gunn, 2009; Sweet & Applebaum, 2004, for findings from home-visiting programs). Our findings support that the emphasis on such behaviors is warranted across ethnic groups (Brooks-Gunn & Markman, 2005).

### AFFILIATIONS AND ADDRESSES

Jeanne Brooks-Gunn, Columbia University, 525 W. 120th St., New York, NY 10027. E-mail: brooks-gunn@columbia.edu. Christy Brady-Smith is at Columbia University, Catherine S. Tamis-LeMonda is at New York University, Jean M. Ispa is at the University of Missouri-Columbia, Allison Sidle Fuligni is at California State University, Los Angeles, Rachel Chazan-Cohen is at George Mason University, and Mark A. Fine is at the University of Missouri-Columbia.

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