

## **Maternal Intrusiveness, Maternal Warmth, and Mother–Toddler Relationship Outcomes: Variations Across Low-Income Ethnic and Acculturation Groups**

By: Jean M. Ispa, Mark A. Fine, Linda C. Halgunseth, Scott Harper, JoAnn Robinson, Lisa Boyce, Jeanne Brooks-Gunn and Christy Brady-Smith

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### **Abstract:**

The present study investigated the extent to which maternal intrusiveness and warmth during play, observed in 579 European American, 412 African American, and 110 more and 131 less acculturated Mexican American low-income families when children were approximately 15 months old, predicted 3 dimensions of the mother–toddler relationship 10 months later. Intrusiveness predicted increases in later child negativity in all 4 groups. Among African Americans only, this association was moderated by maternal warmth. Intrusiveness predicted negative change in child engagement with mothers only in European American families. Finally, near-significant trends suggested that intrusiveness predicted later decreased dyadic mutuality in European American and more acculturated Mexican American families, but not in African American or less acculturated Mexican American families.

**Keywords:** child development | low-income families | parent-child relationships | parenting | motherhood

### **Article:**

Researchers have had a long-standing interest in how parenting practices, particularly those engaged in by the mother, affect the nature of the parent–child relationship. Schaefer (1959) and Maccoby and Martin (1983) found that two behavioral dimensions—control and warmth—are central to parenting. In this investigation, our focus was on these two dimensions with special attention to one type of control, intrusiveness, during play. Though most researchers studying intrusiveness have concluded that intrusiveness is related to negative mother–child relationship outcomes (e.g., Ainsworth, Blehar, Waters, & Wall, 1978), others have found no such association (e.g., Eshel, Landau, Daniely, & Ben-Aaron, 2000).

These mixed findings suggest that critical issues remain. First, we need to understand which specific dimensions of the mother–child relationship are affected by earlier maternal intrusiveness. Second, although there is evidence that maternal warmth positively affects

relationship outcomes (Maccoby & Martin, 1983) and may moderate the impact of highly controlling parenting (Brody & Flor, 1998; McLoyd & Smith, 2002), we know of no research testing the possibility that it moderates the relation specifically between maternal intrusiveness and mother–child relationship quality over time. Third, given that the same parenting behavior may have different effects on children in different racial/ethnic groups (Deater-Deckard & Dodge, 1997), it is important to determine whether the relations between maternal intrusiveness and mother–child relationship outcomes are consistent across cultures. Finally, the few studies in this area have typically been cross-sectional. Longitudinal designs that assess the extent to which maternal intrusiveness predicts later relationship features can provide stronger evidence that these two sets of variables are causally related to each other.

Consequently, in this study, in a sample of low-income mothers and their very young children, we examined: (a) how maternal intrusiveness during play when children are approximately 15 months old is linked to three dimensions of the mother–child relationship when children are approximately 25 months old: child negativity, child engagement, and dyadic mutuality; (b) the extent to which maternal warmth moderates the potential link between maternal intrusiveness and later mother–child relationship quality; and (c) the extent to which these relationships generalize across four groups (African American, less acculturated Mexican American, more acculturated Mexican American, and European American). To provide a stringent test of these associations, including a test of the possibility that maternal intrusiveness causes subsequent changes in the quality of the mother–child relationship, we controlled for the 15-month levels of the relationship outcome of interest.

### **Maternal Intrusiveness**

Although maternal intrusiveness has not been consistently defined in the literature, the definition used in this study grows out of the work of Ainsworth et al. (1978) and considers intrusiveness to involve a constellation of insensitive, interfering parenting behaviors rooted in mothers' lack of respect for their infants' autonomy. Central to this conceptualization is the notion that the highly intrusive mother has her own agenda in mind as she either overwhelms the child with excessive stimulation or interrupts the child's self-initiated activity to stop it or change its course. In studies that have used this definition, intrusiveness has been operationalized as frequent, noncontingent behavior directed toward the child (e.g., Isabella & Belsky, 1991; Smith & Pederson, 1988) or as verbal or physical behavior meant to stop or take over the child's activity (e.g., Biringen & Robinson, 1991; Carlson & Harwood, 2003; Egeland, Pianta, & O'Brien, 1993). It also includes the use of demands rather than gentle guidance (e.g., Biringen & Robinson, 1991; Nolen-Hoeksema, Wolfson, Mumme, & Guskin, 1995). Based on this previous work, we viewed intrusiveness as parenting that dominates a child's play agenda so that the child has little or no influence on its content or pace.

### **Intrusiveness and Children's Social and Emotional Outcomes**

There is a considerable body of research linking maternal intrusiveness with negative child outcomes. An especially consistent finding in research on predominantly European American samples concerns children's apparent defensive reactions, as evidenced in studies showing associations between maternal intrusiveness and infant and toddler tendencies to look away during structured face-to-face interactions with their mothers (Malatesta, Culver, Tesman, & Shepard, 1989) and to display avoidant attachment in the Strange Situation procedure

(Ainsworth et al., 1978; Carlson & Harwood, 2003; Isabella & Belsky, 1991). Most research with preschool-aged European American and African American children similarly shows negative correlates of intrusiveness such as low mother–child mutuality, low child affection for mother, high child negative affect, and behavior problems (Egeland, 1985, as reported in Egeland et al., 1993; Egeland et al., 1993; Marfo, 1992; Park, Belsky, Putnam, & Crnic, 1997; Pettit, Harrist, Bates, & Dodge, 1991; Whiteside-Mansell, Bradley, Owen, Randolph, & Cauce, 2003).

Researchers have explained these findings by referring to three aspects of intrusive parenting. First, adult intrusiveness may provide overwhelming stimulation for children, causing them to shut down (or become avoidant) as a way of protecting themselves from an overload in information processing demands and from the negative affect produced by overarousal (Ainsworth et al., 1978; Belsky, Rovine, & Taylor, 1984). Second, infants and children may experience intrusiveness as stressful because it impinges on their ability to exercise control over interactions or to establish patterns of mutual reciprocity and regulation (Malatesta et al., 1989; Tronick, 1989). Because the child has little experience of mutual regulation with a sensitive parent, the development of self-regulation and ability to engage in future positive relationships with others may be compromised (Egeland & Farber, 1984; Egeland et al., 1993; Pettit et al., 1991). Third, because intrusive mothers do not read children's wishes and interests well and tend to take the lead in task and play situations, children may develop feelings of incompetence, which in turn can lead to disengagement, aggression, or other negative interpersonal styles (Kahen, Katz, & Goffman, 1994; Pettit et al., 1991; Tronick, 1989).

It is interesting, however, that not all studies show negative impacts of maternal controlling or intrusive behavior and all that show either neutral or positive consequences are based on non-European American or non-U.S. samples. Three such studies used Latino samples. Carlson and Harwood (2003) found that high maternal physical control predicted secure attachment in Puerto Rican toddlers; Fracasso, Busch-Rossnagel, and Fisher (1994) found that, in Puerto Rican and Dominican immigrant families, mothers of secure infants engaged in more “abrupt-interfering pick-ups” than mothers of insecure infants; and Lindahl and Malik (1999) found that Latino school-age boys were no more likely to exhibit externalizing behaviors if their parents used a hierarchical as compared to a democratic childrearing style. Three Israeli studies indicated no relations between maternal intrusiveness and infant attachment security (Aviezar, Sagi, Joels, & Ziv, 1999) or infant or preschooler active positive involvement with mothers during play (Eshel et al., 2000; Feldman, Greenbaum, Mayes, & Erlich, 1997), and studies of Chinese and Chinese American families reported neutral or positive effects of parental firm control (Chao, 2001; Leung, Lau, & Lam, 1998). Finally, several studies have indicated that high parental control, especially when combined with high warmth, has either neutral or beneficial consequences for African American children (Brody & Flor, 1998; Spieker, Larson, Lewis, Keller, & Gilchrist, 1999).

Martínez's (1988) study of Mexican American parent–child relationships called attention to the importance of distinguishing between intrusiveness that is affectively neutral or positive from that which is affectively negative. Like Carlson and Harwood (2003), Martínez found no relation between maternal positive physical control (i.e., manual control meant to facilitate the child's successful task solution) or negative physical control (i.e., physically restraining behaviors

indicating maternal disapproval) and 5-year-olds' noncompliance, imitation of their mothers, or negative talk to their mothers. Moreover, although mothers' negative physical control predicted children's negative talk to them, maternal positive physical control predicted children's positive verbal responses to their mothers and task involvement.

### **Culture as a Moderator**

Even within the United States, cultures vary greatly in endorsement and use of parental control. For example, several studies have indicated that strict or intrusive childrearing practices are more characteristic of African American than of European American mothers (Bradley, Corwyn, McAdoo, & Garcia Coll, 2001; McLoyd & Smith, 2002). In addition, most comparisons between Latino and European American parenting have indicated that, regardless of country of family origin, Latino mothers tend to value obedience and politeness more than same-socioeconomic-status European American mothers, to give the development of children's autonomy low priority, to report frequent use of discipline, to use didactic teaching methods, and to guide physically their toddlers' actions (Cardona, Nicholson, & Fox, 2000; Carlson & Harwood, 2003; Harwood, Schöelmerich, Schulze, & Gonzalez, 1999). (For an alternative view, see Laosa, 1980, who concluded that differences in Latino and European American teaching styles were due to socioeconomic status differences.)

In an effort to explain the consistent finding that authoritarian parenting practices have negative implications for children growing up in middle-class Western cultural contexts but variable (often benign or beneficial, though sometimes negative) consequences for children growing up in collectivistic non-Western cultures and in African American families (e.g., Brody & Flor, 1998; Leung et al., 1998), Grusec, Rudy, and Martini (1997) proposed that parents who live in individualistic cultural contexts in which authoritarian parenting is non-normative and frowned on engage in this style of parenting for their own benefit rather than for the benefit of their children. They may become controlling because they harbor negative opinions about their children's motivations or because they are generally exasperated or dissatisfied with them. Under these conditions, parental high control may be accompanied by signs of resentment toward children as well as by general negative affect. Children may thus experience parental control as rejection and show the expected negative consequences.

With the exception of two studies that showed no relation between maternal control or intrusiveness and either sensitivity or positive emotional expression (Carlson & Harwood, 2003; V. J. Carlson, personal communication, August 4, 2003; Feldman et al., 1997), the evidence from studies using European American samples is consistent with this view. Supporting Ainsworth's (e.g., Ainsworth et al., 1978) view that maternal intrusiveness is associated with other negative mothering behaviors and cognitions, investigators using predominantly European American samples have found that maternal intrusiveness is associated with harshness and hostility and that it is negatively related to maternal warmth, sensitivity, and use of positive feedback and questioning (Hubbs-Tait, Culp, Culp, & Miller, 2002; Hubbs-Tait, Culp, Huey et al., 2002; Marfo, 1992). Whiteside-Mansell et al. (2003) found that relations among intrusiveness, harsh parenting, and lack of responsiveness held for African American mothers as well as for European American mothers.

Research indicating that authoritarian practices are linked to stress may also be applied to this issue. Parents may adopt a highly controlling parenting style because they are tense because of stressful living conditions or because of their own mental health problems (Dix, 1991). Egeland (1985, as cited in Egeland et al., 1993) found that maternal intrusiveness was related to stressful family life events, and Cohn and Tronick (1989) and Kelley and Jennings (2003) reported an association between maternal depression and intrusiveness. Gelfand and Teti (1990) reasoned that depression is often associated with negative views of self and of one's children, which in turn can result in intrusiveness. Hubbs-Tait, Culp, Huey et al. (2002) and Nolen-Hoeksema et al. (1995), however, found no such connection. In each of these studies, the samples were either predominantly European American or the racial composition of the sample was not reported.

Grusec et al. (1997) proposed that the conditions surrounding intrusiveness are likely to be different in individualistic versus collectivistic cultures. They theorized that in collectivistic cultures, where authoritarian childrearing practices are common and believed to be best for children, parents are likely to employ strict practices not because they have negative views of their children or because they have mental health problems but because this style fits their model of good parenting. Such parents may administer authoritarian strategies deliberately and calmly and without as much accompanying negative affect as authoritarian parents in individualistic cultural contexts, who are more likely to be highly controlling out of anger and sadness. Findings showing that high levels of intrusiveness and other forms of control by parents in collectivistic cultures are not accompanied by low levels of closeness, sensitivity, or warmth of emotional expression (Carlson & Harwood, 2003; Ispa, 1994; Richman, Miller, & LeVine, 1992) support this hypothesis. The links between controlling parenting and parent-child relationship outcomes are therefore also likely to be different in different cultural contexts.

There are at least two possible ways in which culture may influence how maternal intrusiveness affects mother-child relationship quality. First, intrusiveness by itself may have similar meaning in various cultural groups and it may have similar negative effects on the quality of mother-child relations across cultural groups. However, in some cultural contexts, its negative effects may still be counterbalanced by other variables so that it ultimately does not negatively affect the mother-child relationship. Alternatively, intrusiveness may have a distinctively different meaning in different cultural groups so that the same constellation of behaviors considered intrusive among European Americans may be considered much less intrusive in other cultural groups. Unfortunately, previous research has not distinguished between these two possibilities, and no single study can provide conclusive evidence for one and only one of them. If the constellation of behaviors considered intrusive by Western researchers has basically the same meaning across cultural groups, we would expect to find similar relations between maternal intrusiveness and mother-child relationship outcomes across the cultural groups represented in our study. If we find that there are differential relations across cultural groups, our study will not be able to determine conclusively whether such differences were found because intrusiveness is embedded within different contexts in the different groups, or whether parents' and children's interpretations of intrusive behaviors differ across the groups. Future research will then need to probe more deeply into whether and how the behaviors are embedded with similar or different contextual elements and meanings in various cultures.

## **Acculturation**

Scholars studying Latino parenting caution that researchers should be mindful of heterogeneity based on factors such as socioeconomic status, country of family origin, and acculturation to mainstream U.S. society (Halgunseth, 2004; Harwood, Leyendecker, Carlson, Asencio, & Miller, 2002). In the current study, we heeded that warning by drawing from a data set that includes only low-income families, by restricting the Latino sample to families of Mexican descent, and by dividing Mexican American families into two groups according to level of acculturation. Research on Mexican American parenting indicates that the process of acculturation is associated with gradual adoption of characteristically European American childrearing values and practices (e.g., Buriel, 1993; Hill, Bush, & Roosa, 2003).

### **Parental Warmth as a Moderator**

The affective context in which parental intrusiveness occurs may be a critical determinant of its impact. A growing body of research has indicated that, in European American, African American, and Latino families, parental warmth moderates links between strict control and children's problem behavior. Probable reasons include the possibilities that parental warmth influences the meaning attributed to firm control by children and the likelihood that parents who are both warm and controlling use firm discipline deliberately and with child-centered rather than parent-centered motivations (Brody & Flor, 1998; Grusec et al., 1997; McLoyd & Smith, 2002). The same patterns may apply to intrusive control. Moreover, ethnic differences in the consequences of maternal intrusiveness may be partially explained by the emotional context (e.g., degree of maternal warmth) in which it occurs.

To summarize our hypotheses and research questions, we expected to find more intrusiveness among African American and Mexican American mothers than among European American mothers. We also expected more intrusiveness among Mexican American mothers who were less acculturated than among those who were more acculturated. An inverse relationship between intrusiveness and warmth was hypothesized for European American mothers, but for mothers in the three minority groups, we expected to find no relation between the two variables. More important, we expected that maternal intrusiveness would be predictive of negative changes in mother–toddler interactions in European American families but not in African American or Mexican American families, especially not in those who were less acculturated. Because past findings are limited and mixed, we posed no a priori hypotheses regarding whether maternal warmth would moderate the relations among maternal intrusiveness and negative changes in mother–toddler interaction in all ethnic groups.

## **Method**

### **Participants**

Data for the current study were collected at 17 Early Head Start (EHS) program sites in 16 states across the United States. All mothers and their toddlers were participants in the longitudinal EHS Research and Evaluation Project (Administration on Children, Youth, and Families, 2001). In accord with EHS eligibility requirements, all had incomes at or below the federal poverty level. The EHS data set includes demographic information (collected at the time of application) on 1,008 European American, 993 African American, and 378 Mexican American families. The present study drew on data from the 579 European American, 412 African American, and 241 Mexican American families who had participated in both of two videotaped parent–child interaction assessments and for whom we had data on the demographic variables controlled for

in our primary analyses (see the following). The first such assessment occurred when children were approximately 15 months old ( $M=14.83, SD=1.20$ ); the other took place when children were approximately 25 months old ( $M=25.05, SD=1.45$ ). At neither time point did the exact ages (in months) of the toddlers differ by ethnicity or acculturation group.

With respect to attrition, 25.2% of the total sample at 15 months dropped out by 25 months, which is fairly typical in longitudinal studies; 20.6% of European Americans, 31.3% of African Americans, 13.0% of more acculturated Mexican Americans, and 7.2% of less acculturated Mexican Americans dropped out. A chi-square test indicated that African American families were more likely to drop out than any of the other three ethnic groups and that European Americans were more likely to drop out than either Mexican American group. To determine whether attrition posed a generalizability concern, we compared those who remained in the sample at both time points with those who dropped out on all demographic variables and maternal intrusiveness and warmth at 15 months. The only significant differences were that mothers who dropped out had lower scores on warmth and were younger than those who remained in the sample. The evidence thus suggests that attrition was not a major problem, but we cannot determine the extent to which our final sample generalizes to the original sample.

The Mexican American families were subdivided into two groups based on eight items from the Multicultural Acculturation Scale (Wong-Rieger & Quintana, 1987), administered as part of the interview conducted when toddlers were approximately 25 months old. These items assess generational status and language usage. Both constructs have been found to be valid measures of acculturation (Buriel, 1993; Marin & Gamba, 1996.) Generational status was scored 1 for mothers born in Mexico, 1.5 for mothers born in the United States of Mexican-born parents, or 2 for mothers born in the United States of U.S.-born parents. The language spoken at home was scored 1 for Spanish and 2 for English. Three items assessing the extent to which mothers spoke English in childhood, spoke English currently, and currently read in English were given scores of 1 if mothers indicated they never used English, used it only when necessary, or used it about half the time. Scores of 2 were given to responses indicating that mothers used English most or all of the time. The five scores were summed to produce an acculturation index (Cronbach's  $\alpha=.89$ ). Mothers with total scores of 5 to 7 were considered less acculturated ( $n=131$ ); mothers with scores of 8 to 10 were considered more acculturated ( $n=110$ ).

Table 1 presents demographic characteristics of the four ethnic/acculturation groups. As shown in the table, the four groups did not differ significantly in terms of the percentage in the EHS program group (50% of the combined sample had been randomly assigned to receive EHS services), the sex of the focal child (51% were male), or in the age of the toddlers at the two observation times. One-way analyses of variance (ANOVAs) revealed significant group differences in mothers' educational levels,  $F(3, 1228)=108.03, p<.001$ , and mothers' age at the time of the 15-month assessment,  $F(3, 1228)=30.33, p<.001$ . A chi-square analysis indicated significant differences in terms of maternal partner status,  $\chi^2(1, N=1,232)=205.25, p<.001$ . Post hoc tests indicated that European American mothers had more education, were older, and were more likely to be living with a husband or romantic partner than were mothers in at least one of the other groups. All analyses therefore controlled for maternal age, partner status, and education.

**Table 1. Maternal and Child Characteristics by Group**

	European American ( <i>n</i> =579)	African American ( <i>n</i> =412)	More acculturated Mexican American ( <i>n</i> =110)	Less acculturated Mexican American ( <i>n</i> =131)
Groups were significantly different at $p < .001$ .				
% in program group	49.7	54.4	50.0	54.2
% focal children female	50.1	48.1	46.4	42.0
% mothers living with husband or partner***	66.7 <sub>abc</sub>	27.2 <sub>ade</sub>	48.2 <sub>bdf</sub>	84.0 <sub>cef</sub>
Maternal education <sup>a***</sup>	9.62 <sub>abc</sub>	9.11 <sub>ade</sub>	7.98 <sub>bdf</sub>	6.26 <sub>cef</sub>
% with less than high school degree	28.6	43.8	64.5	81.7
% with high school degree	38.0	27.4	22.7	9.9
% with more than high school degree	33.5	28.9	12.7	8.3
<i>M</i> maternal age***	24.12 <sub>abc</sub> (5.6)	22.36 <sub>ad</sub> (5.8)	21.30 <sub>be</sub> (5.8)	26.99 <sub>cde</sub> (5.4)
<i>M</i> child age (in months) at 1st visit	14.78 (0.95)	14.81 (1.36)	14.66 (1.39)	14.62 (1.42)
<i>M</i> child age (in months) at 2nd visit	25.05 (1.32)	24.89 (1.50)	24.92 (1.39)	24.95 (1.47)
<i>M</i> mothers' annual income	\$9,841.82 (\$7,673.46)	\$8,692.24 (\$10,195.05)	\$9,923.00 (12,139.11)	\$9,988.75 (5,866.46)
<i>M</i> maternal depression (15 mos.)	1.77 <sub>abc</sub> (0.56)	1.70 <sub>ae</sub> (0.54)	1.67 <sub>bd</sub> (0.59)	1.51 <sub>cde</sub> (0.60)

*Note.* Means with the same subscripts were significantly ( $p < .05$ ) different from each other. Standard deviations are in parentheses.

<sup>a</sup> Maternal education was rated on a scale of 1 (*no school completed*) to 16 (*doctorate*).

\*\*\* Groups were significantly different at  $p < .001$ .

A one-way analyses of covariance (ANCOVA; controlling for maternal age, partner status, and education) indicated significant group differences in depression (as assessed by the Center for Epidemiologic Studies Depression Scale [CES-D-Short Form], described later),  $F(3, 1215) = 10.41$ ,  $p < .001$ . Tukey's honestly significant difference (HSD) post hoc tests showed that European American mothers had higher depression scores than mothers in any of the other three groups, and less acculturated Mexican American mothers had lower scores than mothers in any of the other groups (see Table 1 for means and standard deviations). Concerned that it might be inappropriate to control for depression because it may be an integral component of intrusiveness, we conducted all correlations and regressions (except those in Table 5) twice, once controlling for depression and once not. Because only one contrast was substantially changed, Tables 3 and 4 present the results from regressions conducted without controlling for depression.



**Table 5. Predicting 15-Month Maternal Intrusiveness From Maternal Stress**

	$\beta$	Total $R^2$	$\Delta R^2$
Step 1			
Maternal age	-.05	.04***	.04***
Maternal partner status	-.10***		
Maternal education	-.16***		
Step 2		.05***	.00*
Maternal stress	.06*		
Step 3		.10***	.05***
AA	.23***		
MMA	.07*		
LMA	.15***		
Step 4		.10***	.01*
Maternal Stress $\times$ AA	-.04		
Maternal Stress $\times$ MMA	-.01		
Maternal Stress $\times$ LMA	-.09**		

Note. Beta weights are from the variable's entry into model. AA=European American versus African American; MMA=European American versus more acculturated Mexican American; LMA=European American versus less acculturated Mexican American.

\*  $p < .05$ .

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

**Table 3. Summary of Hierarchical Regression Analyses for Variables Predicting 25-Month Outcomes**

	Child negativity			Child engagement			Dyadic mutuality		
	$\beta$	$R^2$	$\Delta R^2$	$\beta$	$R^2$	$\Delta R^2$	$\beta$	$R^2$	$\Delta R^2$
Step 1		.05***			.13***			.15***	
Maternal age	-.07*			.08**			.09***		
Partner status	-.12***			.11***			.12***		
Maternal education	-.03			.13***			.07**		
15-month level of dependent variable	.14***			.26***			.31***		
Step 2		.07***	.02***		.13***	.01***		.15***	.00
Intrusiveness (I)	.19***			-.10***			-.02		
Step 3		.10***	.03***		.17***	.03***		.20***	.04***
Dummy 1 (AA)	.09**			-.15***			-.16***		
Dummy 2 (MMA)	-.07*			.06*			.05†		
Dummy 3 (LMA)	-.17***			.10**			.14***		
Step 4		.11***	.00		.17***	.01***		.20***	.01†
I × AA	.01			.07†			.06†		
I × MMA	-.03			.06*			.04		
I × LMA	-.05			.06*			.07*		
Step 5		.11***	.01**		.19***	.01***		.23***	.03***
Warmth (W)	-.08**			.14***			.20***		
Step 6		.12***	.01*		.19***	.00		.23***	.00
I × AA × W	-.08**			.01			.03		
I × MMA × W	.01			.00			.00		
I × LMA × W	.04			.00			-.02		

Note. Maternal warmth and maternal intrusiveness were centered at their means. Ethnicity was represented as three dummy variables with European American serving as the reference group. AA=European American versus African American; MMA=European American versus more acculturated Mexican American; LMA=European American versus less acculturated Mexican American.

†  $p < .10$ .

\*  $p \leq .05$ .

\*\*  $p \leq .01$ .

\*\*\*  $p \leq .001$ .

**Table 4. Summary of Follow-Up Regression Analyses Predicting 25-Month Outcomes by Ethnic Group**

	Child engagement		Dyadic mutuality	
	$\beta$	$R^2$	$\beta$	$R^2$
European Americans		.15***		.18***
Maternal age	-.03		-.01	
Partner status	.02		.03	
Maternal education	.24***		.23***	
15-month level of dependent variable	.21***		.27***	
Intrusiveness	-.15***		-.08 <sup>†</sup>	
African Americans		.15***		.15***
Maternal age	.07		.11*	
Partner status	.01		.01	
Maternal education	.12*		.07	
15-month level of dependent variable	.32***		.34***	
Intrusiveness	-.04		.06	
More acculturated Mexican American		.16**		
Maternal age	.20*			
Partner status	.11			
Maternal education	.01			
15-month level of dependent variable	.32**			
Intrusiveness	.10			
Less acculturated Mexican American		.05		.07 <sup>†</sup>
Maternal age	.06		-.03	
Partner status	.04		-.03	
Maternal education	.18*		.23*	
15-month level of dependent variable	.12		.12	
Intrusiveness	-.01		.08	

Note. These regressions were conducted as post-hoc tests following up the significant relations found in Step 4 of the regressions represented in Table 3.

†  $p < .10$ .

\*  $p < .05$ .

\*\*  $p < .01$ .

\*\*\*  $p \leq .001$ .

## **Procedure**

Demographic data were collected at the time of application to EHS, when mothers were pregnant or had children younger than 1 year of age. As discussed in more detail in the Early Head Start Final Report, Technical Report Appendixes (Administration on Children, Youth, and Families, 2001), under the supervision and coordination of the national contractor, Mathematica Policy Research, and the National Center for Children and Families at Columbia University, all data collectors were trained and certified before they were allowed in the field.

With the exception of some measures (described later) used to test post hoc explanations for our findings, all measures were generated from videotaped semistructured 10-min parent-child “three bag” play sessions that took place when toddlers were 15 and 25 months old. At each of the two time points, the play episode was included in a 2-hr home visit during which instruments tapping a wide range of issues of interest to the EHS evaluation were used. At the start of the play session, mothers were presented with three cloth bags. The first contained a toddler book in English or in Spanish, the second contained a set of cooking toys, and the third contained a Noah's Ark set. Only the books differed from the 15-month to the 25-month assessment. Mothers were invited to play with their children as they wished; the only request was that they use the book in Bag 1 first, then the toys in Bag 2, and finally the toys in Bag 3. The instructions were deliberately vague so as to elicit naturally occurring behaviors. The sessions were conducted in Spanish or English according to parental preference.

## **Measures**

Videotapes were sent to a central location where they were scored according to nine 7-point scales adapted from those developed for the National Institute of Child Health and Human Development (NICHD) Study of Early Child Care's “three box” assessment of the quality of mother-child interaction (NICHD Early Child Care Research Network, 1997, 1999). Scale ratings ranged from 1 (very low) to 7 (very high) based on the quantity and quality of behaviors observed. Numerous studies have found scores based on observational rating scales to predict socioemotional outcomes in children, to show moderate relations with scores on the relevant scales of other instruments, and to distinguish adolescent from older mothers (e.g., Berlin, Brady-Smith, & Brooks-Gunn, 2002; NICHD Early Child Care Research Network, 1997, 1999). For the current study, five of the nine scales were used. Maternal intrusiveness and warmth when children were approximately 15 months in age served as independent variables predicting three measures of the affective quality of the mother-child relationship when children were approximately 25 months old. These were child negativity, child engagement of mother, and dyadic mutuality between mother and child. The latter three measures at 15 months were also included for use as control variables in our primary analyses.

Graduate students were trained to a criterion level of 85% agreement (exact or within 1 point) on all scales. After interrater reliability was achieved, intermittent reliability checks were performed on 15% to 20% of each coder's weekly videotape assignments. Coder intraclass correlations (and

percentage agreement within 1 point) for the 15-month maternal intrusiveness and warmth scales were .75 (90%) and .72 (91%), respectively. For the 25-month child negativity, child engagement, and dyadic mutuality scales, the coefficients were .74 (97%), .68 (91%), and .73 (91%), respectively. Interrater reliabilities by child race were computed to determine whether reliability was consistent across European American, African American, and Mexican American dyads. (Because of small cell sizes, the two Mexican American groups were combined.) Of the 15 comparisons, 13 showed no significant ethnic group differences. At 25 months only, child engagement reliability coefficients for European American (.69) and African American (.67) dyads were significantly higher than for Mexican American (.45) dyads. It should be noted that cell sizes were very small for the latter group.

At 15 months, the five-person coding team was composed of three European American, one African American, and one Asian coder. At 25 months, the eight-person team was composed of five European American, one African American, one Asian Indian, and one Latino coder. Although coders were not matched with the ethnicity of parent-child dyads, a bilingual coder coded videotapes in which any Spanish was spoken. All coders were blind to the treatment status or any other identifying information about the families.

To investigate the construct validity of the three bags measures, we estimated correlations between scores obtained on our independent and dependent variables and scores obtained from widely used instruments that assess related constructs. These additional instruments were completed by mothers or data collectors (i.e., not by the coders who later rated the videotaped interactions) during the 15- and 25-month data-collection home visits. In the following discussion, after each of the three bags measures is described, we report its correlation with scores on one of these instruments. The correlations are encouraging given that scores were obtained from different observers and given that the three bags scales addressed the quality of mother-toddler interaction specifically during play, whereas the instruments used for checking validity addressed toddler or mother behavior or beliefs more generally.

Maternal intrusiveness measured the degree to which the mother controlled the child's play instead of allowing for the child's preferences. Mothers who scored high on this scale were observed grabbing toys, not taking turns, and taking charge of the activity, imposing their own agenda without letting children shape the focus or pace of play. There was a positive association between intrusiveness ratings when toddlers were 15 months old and scores on the Traditional subscale of the Parental Modernity Scale (Schaefer & Edgerton, 1985), completed by mothers during the 25-month home visit,  $r(1203) = .22, p < .001$ . High scores on the Traditional subscale indicate beliefs that adults, not children, should be in control of the learning process and that children should not be allowed to express their own points of view.

Maternal warmth reflected the mother's physical and verbal expressions of love, attentiveness, and respect or admiration for the child. Coding took into account warm nonverbal affect, attentive looking at the child's face, and words of encouragement and praise. Fifteen-month warmth ratings and 15-month scores on the Emotional Responsivity subscale of the Infant/Toddler Home Observation for Measurement of the Environment (HOME; Caldwell & Bradley, 1984) were positively related,  $r(1198) = .30, p < .001$ . To complete the HOME, the interviewer conducted a semistructured interview and observed mothers' behaviors toward their

children. Scores on the Emotional Responsivity subscale reflect mothers' responsive and supportive parenting.

Child negativity toward mother measured the degree to which the child showed anger or dislike toward the mother. The correlation between 25-month child negativity ratings and mothers' concurrent ratings of their children on the Aggressive subscale of the Child Behavior Checklist for Ages 2–3 (CBCL; Achenbach, Edelbrock, & Howell, 1987) was positive,  $r(1192)=.16$ ,  $p<.001$ . The Aggressive subscale captures mothers' perceptions regarding their children's defiance, low frustration tolerance, aggressiveness, and overall problems getting along with others.

Child engagement of mother assessed the extent to which the child interacted with the mother in a positive manner, initiating or maintaining eye contact, approaching her, and responding with positive affect to her initiations. These ratings and mothers' ratings of their children on the Aggressive subscale of the CBCL (Achenbach et al., 1987) were inversely related,  $r(1192)=-.19$ ,  $p<.001$ .

Dyadic mutuality measured the mother and child as a unit. High scorers displayed synchrony, comfort, and enjoyment in their interactions with each other. They seemed to share energy, affect, goals, and perspectives. Dyadic mutuality ratings from the 25-month visit were inversely related to mothers' concurrent scores on the Parent–Child Dysfunctional Interaction (PSDI) subscale of the Parenting Stress Index (PSI; Abidin, 1995),  $r(1232)=-.17$ ,  $p<.001$ . The PSI is a self-report instrument. High scores on the PSDI subscale suggest that the mother is bothered and disappointed by her child's temperament and typical behavior.

To test possible explanations for our primary findings (see the following), a composite measure of maternal stress was obtained by standardizing and averaging z scores from widely used self-report instruments (described later) that tap maternal unhappiness in the parenting role, maternal disappointment with the child, maternal depression, and the recent experience of significant stressors. All were translated (and back-translated) into standard Spanish by two translators. At sites with predominantly Mexican American families, research staff changed some words and phrases to fit the local dialect. Cronbach's alphas (computed using the z scores of the four scales) were .59, .68, .62, and .60 for the European American, African American, more acculturated Mexican American, and less acculturated Mexican American groups, respectively. These values were considered acceptable because the composite measure was composed of only four items (scales). The four instruments were completed by mothers when toddlers were approximately 15 months old.

The Parenting Stress Index–Short Form (PSI-SF; Abidin, 1995) measures the degree of stress experienced by parents in their relationships with their children. Two of the subscales were included in the current study. The Parental Distress subscale ( $\alpha$  for current sample=.90) measures the parent's distress in the parenting role as a result of factors such as lack of social support, the perceived restrictiveness of parenting, depression, and low confidence in one's parenting efficacy (sample item: “Since having a child, I feel that I am almost never able to do things that I like to do”). The PSDI subscale ( $\alpha$  for current sample=.89) measures mothers' disappointment and annoyance with their children (sample item: “My child turned out to be more of a problem than I

had expected”). Both subscales are composed of 12 items; mothers use a 5-point scale to indicate their level of agreement or disagreement. Higher scores on the combined subscales indicate more parenting stress.

The CES–D–SF (Ross, Mirowsky, & Huber, 1983;  $\alpha$  for current sample=.94) includes 12 items taken from the CES-D (Radloff, 1977) and measures symptoms of depression such as appetite loss, sleeplessness, loneliness, sadness, and lethargy. Mothers indicated the frequency with which they experienced each of 12 symptoms during the preceding week, on a scale ranging from 0 (rarely) to 3 (most days). Higher scores thus indicated more depressive symptoms.

Major stressful events experienced by the mothers during the last year were measured using the Stressful Events scale, an instrument created with items chosen from the Stressful Life Events Scale (Belsky & Crnic, 1990) and the Difficult Life Circumstances Scale (Barnard et al., 1989). Mothers responded yes or no indicating whether they had experienced each of 20 potential stressors during the past year. The items referred to experiences such as being robbed, having the electricity shut off, being hassled by bill collectors, having many arguments with romantic partners, and experiencing the death of someone close.

## **Results**

### **Preliminary Analyses**

For descriptive purposes, Table 2 presents the means and standard deviations for 15-month maternal intrusiveness and warmth and 15- and 25-month child negativity, child engagement, and dyadic mutuality for the sample as a whole and by group. The results of one-way ANCOVAs testing for group effects (and controlling for maternal age, education, and partner status) are also shown in Table 2. Post hoc contrasts (Tukey's HSD tests) revealed significantly ( $p<.05$ ) lower mean levels of 15-month intrusiveness among European American mothers than among mothers in all three minority groups, and no differences among the three minority groups. For 15-month maternal warmth, there was also a significant ethnicity effect. European American mothers showed significantly more warmth than did mothers in the other three groups. In addition, more acculturated Mexican American mothers showed significantly more warmth than less acculturated Mexican American mothers. Post hoc results for the 25-month mother–toddler relationship variables indicated higher negativity among European American toddlers than among less acculturated Mexican American toddlers, and higher child negativity, lower engagement of mothers, and lower dyadic mutuality among African American toddlers than among toddlers in the other three groups.

**Table 2. Means (and Standard Deviations) of Maternal Intrusiveness and Warmth at 15 Months, and Child Negativity, Child Engagement, and Dyadic Mutuality at 15 and 25 Months**

	Entire sample	European American	African American	More acculturated Mexican American	Less acculturated Mexican American	<i>F</i> (3, 1228)
Maternal intrusiveness (15 mos.)	2.48 (1.23)	2.14 <sub>abc</sub> (1.12)	2.83 <sub>a</sub> (1.28)	2.58 <sub>b</sub> (1.21)	2.85 <sub>c</sub> (1.60)	20.53 <sup>***</sup>
Maternal warmth (15 mos.)	3.81 (1.18)	4.18 <sub>abc</sub> (1.15)	3.47 <sub>a</sub> (1.12)	3.71 <sub>bd</sub> (1.09)	3.33 <sub>d</sub> (1.03)	26.26 <sup>***</sup>
Child negativity (15 mos.)	2.10 (1.12)	1.90 <sub>abc</sub> (1.05)	2.27 <sub>a</sub> (1.17)	2.23 <sub>b</sub> (1.16)	2.34 <sub>c</sub> (1.11)	6.40 <sup>***</sup>
Child negativity (25 mos.)	1.76 (1.01)	1.67 <sub>ab</sub> (0.95)	2.04 <sub>acd</sub> (1.14)	1.61 <sub>c</sub> (0.84)	1.40 <sub>bd</sub> (0.76)	15.38 <sup>***</sup>
Child engagement (15 mos.)	3.85 (1.12)	3.97 <sub>a</sub> (1.09)	3.81 <sub>b</sub> (1.15)	3.91 <sub>c</sub> (1.09)	3.42 <sub>abc</sub> (1.10)	3.56 <sup>*</sup>
Child engagement (25 mos.)	4.30 (1.16)	4.50 <sub>a</sub> (1.11)	3.95 <sub>abc</sub> (1.18)	4.48 <sub>b</sub> (1.15)	4.39 <sub>c</sub> (1.11)	16.62 <sup>***</sup>
Dyadic mutuality (15 mos.)	4.44 (1.33)	4.85 <sub>ab</sub> (1.26)	4.07 <sub>acd</sub> (1.29)	4.54 <sub>de</sub> (1.22)	3.71 <sub>bce</sub> (1.24)	28.32 <sup>***</sup>
Dyadic mutuality (25 mos.)	4.56 (1.24)	4.82 <sub>a</sub> (1.17)	4.09 <sub>abc</sub> (1.26)	4.75 <sub>b</sub> (1.07)	4.81 <sub>c</sub> (1.18)	26.96 <sup>***</sup>
Depression (15 mos.)	1.71 (0.57)	1.77 (0.56)	1.70 (0.54)	1.67 (0.59)	1.51 (0.60)	

Note. Means with the same subscript are significantly different at the .05 level (analyses of covariance controlling for maternal age, partner status, and education followed by Tukey's honestly significant difference tests).

\*  $p < .05$ .

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



With maternal age, partner status, and education controlled, the correlation between 15-month maternal warmth and intrusiveness was significant for the European American, African American, and less acculturated Mexican American mothers ( $r_s = -.25, -.24, \text{ and } -.24$ , respectively,  $p_s < .001$ ). For the more acculturated Mexican American mothers, the partial correlation only approached significance ( $r = -.18, p < .10$ ). The results were the same with depression controlled.

### **Analyses to Test Research Questions**

As shown in Table 3, to address our central research questions, we conducted a series of three hierarchical multiple regressions, one for each 25-month outcome (child negativity, child engagement, and dyadic mutuality). Because preliminary analyses indicated that the sex of the child did not moderate relations between maternal intrusiveness and any of the outcomes, it was not included in further analyses.

Step 1 of each regression controlled for maternal age, education, partner status, and the 15-month measure of the outcome being predicted. Controlling for the predicted outcome at the prior wave of data collection (i.e., at 15 months) strengthened our ability to test for longitudinal (rather than merely concurrent) links between early parenting behavior and changes in the outcomes of interest. This strategy also reduced the possibility that relations between maternal intrusiveness and outcomes could be due to child effects on mothers. The question being tested was thus whether intrusiveness when children were 15 months old predicted change in a given outcome. When relations are found between a parenting behavior at Time 1 and a relational outcome at Time 2, it is more likely that the relational outcome is a consequence, rather than just a correlate, of the parent behavior if the analysis was adjusted for that same outcome at Time 1.

In Step 2 of each regression, we entered 15-month maternal intrusiveness, thus testing for its unique contribution to the 25-month outcome over and above the contributions of maternal age, education, and partner status, and the outcome at 15 months. In Step 3, we entered three dummy variables that were created according to the procedure outlined by Cohen and Cohen (1983). The first dummy variable (AA in Table 3) compared African Americans and European Americans, the second (MMA) compared more acculturated Mexican Americans and European Americans, and the third (LMA) compared less acculturated Mexican Americans with European Americans. We compared the three minority groups with European Americans because childrearing patterns in the latter group have been more extensively researched and therefore provide a better known reference point, not because we see those patterns as standard. Step 3 was necessary as a prerequisite for testing for interactions in Steps 4 and 6. The moderating effect of group on maternal intrusiveness was tested in Step 4 by adding in three product terms representing the interaction between intrusiveness and group: the intrusiveness by D1 product term, the intrusiveness by D2 product term, and the intrusiveness by D3 product term.

To determine the nature of the relation between maternal warmth and the relevant outcome, after controlling for maternal education, maternal intrusiveness, ethnicity, and the 15-month level of the outcome of interest, maternal warmth when children were 15 months old was entered in Step 5. Finally, in Step 6, we determined whether there was a three-way interaction among maternal intrusiveness, maternal warmth, and ethnicity to determine whether ethnicity moderated the extent to which intrusiveness and warmth predicted the 25-month level of the relevant outcome.

At all steps, intrusiveness and warmth scores were centered. The results of the six steps of the analyses involving the three mother–toddler relationship variables are shown in Table 2. Results from Step 3, because they overlap with the results from the previously reported group comparison ANCOVAs, are not discussed further in the text. For descriptive purposes, after the multiple regression findings are presented, we present in parentheses the partial correlation between each of the mother–child interaction variables and intrusiveness and warmth (controlling for maternal age, education, partner status, and the 15-month level of the relationship outcome).

### **Prediction of Change in Child Negativity With Mother**

The results at Step 2 show that, with maternal age, education, partner status, and child negativity at 15 months controlled, for the sample as a whole, 15-month maternal intrusiveness was a positive predictor of child negativity at 25 months ( $\beta = .14$ ,  $p < .001$ ). At Step 4, none of the three product terms (reflecting the interaction between maternal intrusiveness and the ethnicity contrasts) contributed to the variance in 25-month child negativity. As expected, Step 5 revealed a significant negative association between 15-month maternal warmth and later child negativity for the sample as a whole ( $\beta = -.11$ ,  $p < .001$ ), suggesting that higher levels of maternal warmth predicted less of an increase in child negativity.

At Step 6, one of the three product terms accounted for a significant portion of variance in child negativity—the term representing the three-way interaction among D1 (comparing European American and African American families), maternal intrusiveness, and maternal warmth. To examine the meaning of this significant interaction, we divided the European American and African American samples each into two groups according to 15-month maternal warmth and then, separately for European American and African American families, we regressed 25-month child negativity on 15-month intrusiveness (with controls for maternal age, education, partner status, and 15-month child negativity) for the low- and high-maternal-warmth groups. Mothers in the low groups had scores of 1 to 3 ( $n_{\text{African American}} = 220$ ,  $n_{\text{European American}} = 160$ ). Mothers in the high groups had scores of 4 to 7 ( $n_{\text{African American}} = 195$ ,  $n_{\text{European American}} = 419$ ). For European American families, intrusiveness predicted 25-month child negativity at both low and high levels of warmth ( $\beta_{\text{low-warmth group}} = .22$ ,  $p < .05$ ;  $\beta_{\text{high-warmth group}} = .17$ ,  $p = .01$ ). However, in African American families, a moderating impact of warmth was evident. At low levels of maternal warmth, intrusiveness predicted 25-month child negativity ( $\beta = .19$ ,  $p < .05$ ). At high levels, intrusiveness and child negativity were unrelated ( $\beta = .12$ ,  $p = .20$ ).

### **Prediction of Change in Child Engagement With Mother**

Next, we tested relations between intrusiveness and warmth at 15 months and child engagement at 25 months. After controlling for maternal age, education, partner status, and 15-month child engagement, results at Step 2 revealed a significant negative association between 15-month maternal intrusiveness and 25-month child engagement ( $\beta = -.09$ ,  $p < .001$ ).

At Step 4, the set of three ethnicity dummy variables contributed a unique portion of the variance in 25-month child engagement. The interactions between maternal intrusiveness and both Mexican American groups versus the European American group contributed significant unique portions of the variance. The interaction between intrusiveness and the African American versus European American ethnicity contrast approached significance. Given the difficulty of

replicating the current data and given that previous studies have not examined ethnicity interactions in this manner, we felt that conducting follow-up analyses on this trend was justified. The risk of a Type I error seemed outweighed by the risk of a Type II error—entirely missing an important pattern. Thus, separate post hoc regressions were conducted for each group. As shown in Table 4, for European American families, maternal intrusiveness at 15 months predicted decreased levels of child engagement at 25 months. In all three minority groups, however, intrusiveness was unrelated to children's engagement with their mothers. (Here we note that the interaction between maternal intrusiveness and the African American versus European American ethnicity contrast no longer approached significance when depression was controlled in Step 1.)

Step 5 revealed that higher levels of maternal warmth at 15 months predicted higher levels of child engagement with the mother at 25 months for the sample as a whole ( $\beta = .16$ ,  $p < .001$ ), suggesting that higher levels of maternal warmth predicted positive changes in levels of child engagement. None of the Step 6 interactions among maternal warmth, maternal intrusiveness, and the ethnicity contrasts reached significance.

### **Prediction of Change in Dyadic Mutuality**

After controlling for maternal age, partner status, education, and dyadic mutuality at 15 months, the final regression analysis found no relation between 15-month maternal intrusiveness and 25-month dyadic mutuality for the sample as a whole (Step 2;  $\beta = -.02$ , ns). At Step 4, there was a trend for the set of three ethnicity dummy variables to account for a unique portion of the variance in 25-month dyadic mutuality. The Intrusiveness  $\times$  European American Versus Less Acculturated Mexican American interaction contributed significant unique variance. The product term reflecting the Intrusiveness  $\times$  European American Versus African American interaction approached significance. Regression analyses (shown in Table 4) conducted separately for the three groups involved in the significant and near significant Step 4 interactions indicated a trend for intrusiveness to predict 25-month decreases in dyadic mutuality for European American, but not for African American or less acculturated Mexican American, mother–toddler pairs.

As expected, Step 5 revealed a significant positive association between 15-month maternal warmth and later dyadic mutuality for the sample as a whole ( $\beta = .18$ ,  $p < .001$ ). At Step 6, the three product terms representing the three-way Group  $\times$  Warmth  $\times$  Intrusiveness interaction did not significantly contribute to the variance in 25-month dyadic mutuality.

### **Follow-Up Analyses**

As noted earlier, the fact that there were ethnic group differences in the relations between intrusiveness and mother–child relationship outcomes suggests that either: (a) intrusiveness has a similar meaning across different cultural groups but it is buffered by contextual factors that lessen its negative impact in certain circumstances, or (b) the intrusiveness construct means something intrinsically different in different cultures. To begin the process of teasing apart these two alternatives, we entertained a set of post hoc hypotheses built on the ideas proposed by Grusec et al. (1997) regarding the differential maternal cognitive and emotional underpinnings of controlling parenting styles in various cultures. We wondered whether ethnic group differences in the extent to which maternal intrusiveness is related to concurrent indexes of maternal stress would indicate that intrusiveness comes with different “baggage” in different cultures. The fact that the European American mothers in our sample had significantly lower intrusiveness scores

than did African American and less acculturated Mexican American mothers suggested that intrusiveness may be more normative for the latter two groups. We hypothesized that, for European Americans, maternal intrusiveness would therefore be positively correlated with stress, but that for African Americans and both groups of Mexican Americans, there would be less evidence of such an association. Support for this hypothesis would suggest a key explanation for the ethnic differences found in the links between maternal intrusiveness and later relationship quality.

As a preliminary step, for each of the four groups, we estimated correlations between maternal stress and intrusiveness when toddlers were 15 months old. The results indicated that stress and intrusiveness were modestly related for the European American mothers ( $r=.13$ ,  $p<.001$ ) but not for the other three groups of mothers ( $r_s=.07$ ,  $.12$ , and  $-.06$  for the African Americans, more acculturated Mexican Americans, and less acculturated Mexican Americans, respectively). To determine whether these group differences were significant, we performed a regression analysis. Step 1 controlled for maternal age, partner status, and education. At Step 2, maternal stress was entered. In Step 3, we entered the three dummy variables representing the differences between European Americans and each of the minority groups. The moderating effect of group on the relation between stress and intrusiveness was tested in Step 4 by adding three product terms representing the interaction between stress and group. The results, shown in Table 5, indicated a significant main effect of stress (Step 2) and a significant interaction between stress and the European American versus less acculturated Mexican American contrast (Step 4). Post hoc partial correlations controlling for maternal age, partner status, and education revealed a small but significant association between stress and intrusiveness for the European American ( $r=.13$ ,  $p=.01$ ) but not for the less acculturated Mexican American ( $r=-.06$ ,  $p=.51$ ) mothers.

## **Discussion**

Extending a tradition of research into the effects of parenting on parent–child relationships, the primary purpose of the current study was to examine the extent to which maternal intrusiveness, observed when children were 15 months old, was predictive of changes in three dimensions of mother–toddler relationships—child negativity toward mother, child engagement with mother, and dyadic mutuality—in a sample of low-income families. For the sample as a whole, we found that maternal intrusiveness predicted negative changes in two of the three relationship outcomes 10 months later. However, we also found that the intrusiveness–negative outcomes link was moderated by ethnicity and, for African Americans, by warmth.

### **Relations Between Maternal Intrusiveness and Mother–Toddler Relationship Outcomes**

Like much of the previous research conducted on U.S. samples (e.g., Ainsworth et al., 1978; Egeland & Farber, 1984; Park et al., 1997), the current study showed that, for the full sample, maternal intrusiveness predicted negative changes in two mother–toddler relationship outcomes—increases over 10 months in toddlers' negativity and decreases in their engagement with their mothers (though the effect sizes for these significant relations were relatively small.) Only dyadic mutuality seemed unaffected. However, further analyses made it clear that associations between maternal intrusiveness and mother–toddler relationship outcomes were moderated by ethnicity and, in the case of African Americans, by maternal warmth.

In European American families, intrusiveness in play was linked to negative outcomes in all three dependent variables. Increases in negativity directed toward mothers, decreases in engagement with them, and a trend toward decreases in dyadic mutuality are reminiscent of past findings showing that intrusiveness is linked to avoidant attachment (Ainsworth et al., 1978; Carlson & Harwood, 2003; Isabella & Belsky, 1991), negative child affect, low mother–child mutuality, and low child affection toward mothers (Egeland et al., 1993; Marfo, 1992).

However, a different pattern emerged for African American mother–toddler pairs. Intrusiveness predicted increases in toddlers' negativity toward their mothers, but positive aspects of the mother–toddler relationship—engagement with mothers and dyadic mutuality—seemed unaffected. Moreover, the relation between maternal intrusiveness and child negativity held only for mother–child pairs in which mothers scored low on warmth. This finding is reminiscent of previous research showing that, in African American families, when high control is exercised in the context of high warmth, it has benign or positive consequences for children (Brody & Flor, 1998; McLoyd & Smith, 2002; Spieker et al., 1999). This suggests that either intrusiveness has a different meaning in African American families than in European American families or that its negative effects are lessened to the extent that it is normative within a culture and occurs in a context (e.g., high warmth) that minimizes its negative impact.

Our findings regarding the less acculturated Mexican American families are partially consistent with prior research on Latino children's reactions to intrusiveness or control. Although maternal intrusiveness during play with 15-month old toddlers was unrelated to later child engagement with mothers or with dyadic mutuality, it did predict later child negativity. Warmth did not moderate any of these associations. The absence of connections between intrusiveness and later positive aspects of mother–child relationship quality during play is consistent with other research conducted in Latino subcultures, as well as in Israel, where the cultural orientation also tends to be collectivistic (Aviezar et al., 1999; Carlson & Harwood, 2003; Eshel et al., 2000). Why, for this group, child negativity could be predicted from earlier maternal intrusiveness whereas the positive aspects of mother–child interaction could not warrants further investigation.

More acculturated Mexican American mothers and toddlers showed patterns that seemed intermediate between those of European American and those of less acculturated Mexican American mothers and toddlers. As in European American families, in more acculturated Mexican American families, maternal intrusiveness predicted increases in toddler negativity and decreases in dyadic mutuality. However, as in less acculturated Mexican American families, intrusiveness was unrelated to engagement with mothers. Moreover, although the two Mexican American groups did not differ in levels of intrusiveness, in terms of mean ratings of warmth, the more acculturated group stood between European American and less acculturated Mexican American mothers. Past research has similarly shown gradual movement toward the parenting styles of the dominant culture as acculturation increases (Buriel, 1993; Caudill & Frost, 1975).

### **Post Hoc Explanations for Group Differences in the Relation Between Maternal Intrusiveness and Mother–Toddler Relationship Outcomes**

Researchers studying the implications of parental control cross-culturally have hypothesized that parenting behaviors may have different meanings for children depending on the degree to which they are normative, the affective context in which they occur, and children's perceptions about parents' motivations. Supporting evidence comes from Taylor's (1996) qualitative study in which Latino adolescents told interviewers that, although they may sometimes chafe at the restrictions their mothers put on them, they also feel good knowing that their mothers are doing it "for their own good," to protect them. Along these lines, intrusiveness may have different meanings for children in different cultural contexts partially because of variation in the parenting motivations or emotions underlying it. These variations may lead to subtle differences (not picked up in the current coding scheme) in the manner in which intrusiveness is displayed. Previous research conducted in the United States is mixed regarding relations between intrusiveness and depression (Kelley & Jennings, 2003; Nolen-Hoeksema et al., 1995). Our study showed a positive correlation between intrusiveness and stress only for the European American mothers, and a regression analysis indicated that the difference between European American and less acculturated Mexican American mothers in this regard was significant. This contrast, in combination with our findings suggesting that intrusiveness is more normative (scores were higher) and has fewer negative consequences in the former group than in the latter, supports Grusec et al.'s (1997) proposal that parental control may be accompanied by negative feelings in individualistic cultures such as that of European Americans and African Americans but neutral or positive feelings in more collectivistic cultures (such as that of Mexican Americans who still hold to traditional Mexican values). Further research on cultural differences and similarities in the mental health correlates of intrusive behavior is needed. We consider this aspect of our study to be exploratory and recognize that small correlations obtained from large samples may have limited meaning even though they are statistically significant.

All in all, our results, in combination with the results of other studies on non-Western or nonmainstream U.S. samples, suggest that some thought should be given to replacing the deficit-tinged word intrusiveness with a more neutral term such as directiveness or anticipatory instruction that might better represent the behavior in question and that might be free from the perspective of U.S. mainstream or middle-class values. Particularly if subsequent research supports the notion that the "intrusiveness" constellation of behaviors has a different essence in varying cultural groups, revising the label attached to these behaviors so that it is more inclusive of the differing meanings given these behaviors would be justified.

### **Ethnic Group Differences in Maternal Intrusiveness and Maternal Warmth**

Though it was not a purpose of our study to compare the four groups in terms of levels of maternal warmth and intrusiveness, our preliminary analyses revealed predictable differences in intrusiveness and unexpected differences in warmth. Several studies support the contention that parents from collectivistic cultures tend to exhibit more controlling or intrusive behaviors than parents from cultures with strongly individualistic orientations (e.g., Harwood et al., 2002; Ispa, 1994). In the current study, African American mothers and both groups of Mexican American mothers were more intrusive in play with their toddlers than European American mothers, and the three minority groups did not differ from one another.

It must be noted, however, that how well these findings reflect individualistic versus collectivistic cultural orientations is called into question by the findings of Mosier and Rogoff (2003), who depicted Guatemalan Mayan parents as indulgently permissive with young children, and by Laosa's (1980) results that, unlike ours, indicated that differences between Mexican American and European American mothers in directiveness disappeared when maternal education was statistically controlled. Moreover, a recent meta-analysis by Oyserman, Coon, and Kimmelmeier (2002) suggests that European Americans do not in fact hold more individualistic attitudes than African Americans or Latinos, and that African Americans and European Americans are similar in their levels of collectivistic orientation. (The meta-analysis supported the view that Latinos are more collectivistic in orientation than European Americans or African Americans.) As Oyserman et al. acknowledged, almost all of the studies included in their meta-analysis employed college student samples. How well college students' orientations reflect those of most of the members of their cultures, particularly those of low-income mothers, is unclear.

Our results concerning group differences in maternal warmth were consistent with research showing fewer displays of physical affection toward toddlers by low-income African American mothers than by low-income European American mothers (Berlin, Brooks-Gunn, Spiker, & Zaslow, 1995; Bradley et al., 2001). However, in the Bradley et al. (2001) study, low-income European American and Latino mothers did not differ in warmth displays, whereas, in the current study, European American mothers displayed more warmth than mothers in any of the other three groups. One possibility is that the three bags situation, in the presence of an interviewer and with a camcorder in clear view, was more constraining for minority group mothers than for European American mothers. This explanation, however, does not explain the minority mothers' higher intrusiveness ratings. Perhaps the operational definition of warmth in our study captured the ways European Americans express love and respect for their children better than the ways members of other ethnicities express the same feelings. For example, the inclusion of verbal praise in our operational definition of warmth may have advantaged European American mothers. Moreover, majority group members seem less accurate in decoding minority group facial and verbal expressions than vice versa (Elfenbein & Ambady, 2002; Gonzales, Cauce, & Mason, 1996). Though EHS videotapes involving even one Spanish phrase were coded by bilingual coders, coders were not matched by ethnicity with families.

Our findings support previous research (Hubbs-Tait, Culp, Culp et al., 2002; Kelley & Jennings, 2003; Marfo, 1992) in showing an inverse relationship between maternal intrusiveness and warmth in all groups (albeit only a trend for more acculturated Mexican American mothers). We had expected to find an inverse correlation for European American mothers but not for minority group mothers.

### **Limitations of the Present Study and Suggestions for Future Research**

Despite several strengths, including using a large national sample, the use of psychometrically established measures, the relatively large sample size, the use of a multifaceted measure of acculturation in the Mexican American group, and the use of a group of mothers living in poverty, there were several limitations of this study that suggest directions for future research. First, the sample was limited to mothers who agreed to be part of a national evaluation study; they may not be representative of the population of low-income mothers. Second, although the coding system that was used to evaluate behaviors has been shown to be reliable and valid in

previous work, and was clearly reliable in the present study, its validity with different ethnic groups has yet to be firmly established despite the fact that we offered some preliminary evidence that these indexes do tap their intended constructs. Because neither previous research nor this study has established whether these observationally based measures have similar or different meanings across cultures, we cannot conclusively know how to interpret ethnic group differences in maternal intrusiveness and warmth. We need more research that validates observational data-collection procedures and coding systems on multiple ethnic groups.

Two ways of approaching this would be to incorporate measures of parental childrearing values and collectivistic versus individualistic orientations in an observational study and to conduct in-depth interviews with parents regarding their interpretations concerning the behaviors considered intrusive in the present study. Though other studies (e.g., Bradley et al., 2001; Carlson & Harwood, 2003) suggest that the cultural variations in parenting seen here may be generalizable to parenting behaviors in other situations, future research is needed.

Finally, despite the strengths of our data analysis strategy (i.e., longitudinal data, controlling for prior levels of the relationship outcome of interest), we still cannot conclude that maternal intrusiveness causes changes in mother–toddler relationship outcomes. Although our results are consistent with this causal inference, there may be other explanations for our findings that need to be ruled out in future studies. There may be, for example, other variables, not assessed in this study, that underlie the relations observed here. Future researchers need to test competing explanations for the findings found in this study, should they be replicated in subsequent work.

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