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Developmental Outcomes of Toddlers of Young Latina Mothers: Cultural, Family, and Parenting Factors

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Abstract

Children of adolescent mothers are at risk for poor developmental outcomes. This study is among the first to examine how cultural, family, and parenting factors prospectively predict the cognitive and language development of children of young Latina mothers ($N=170$; $M_{age} = 17.9$ years).

Mothers were interviewed and observed interacting with their children at 18 months (W1).

Children were tested at 18 (W1) and 24 (W2) months. Mothers' cultural orientation (W1) was related to aspects of the childrearing environment (W1), which in turn had implications for the children's development (W2). Specifically, a stronger orientation toward American culture was related to higher mother-reported engagement in parenting by their own mothers (grandmothers), which in turn predicted stronger gains in cognitive and expressive language functioning from W1 to W2. A stronger Latino orientation related to the display of more directiveness and greater mother-reported engagement by the children's biological fathers; directiveness, in turn, predicted fewer gains in cognitive functioning only when father engagement was low and did not predict expressive language development. Finally, mothers' display of more positive affect, a stronger American orientation, and higher grandmother engagement uniquely predicted gains in W2 expressive language functioning. Implications for intervention are discussed.

Keywords

Adolescent mothers; Latino families; acculturation; enculturation; developmental outcomes; toddlers

Children of adolescent mothers are at risk for poor developmental outcomes across domains, including cognitive and language functioning (Whitman, Borkowski, Keogh, & Weed, 2001). These deficits are related to family demographic characteristics; adolescent mothers are more likely than their non-parenting peers to come from lower socio-economic-status (SES) backgrounds and have lower educational attainment. They are also more likely than

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adult mothers to be single and live in poverty (Mollborn & Dennis, 2012). Consistent with this disadvantaged background, adolescent mothers show more problematic parenting behaviors than adult mothers, such as more detachment, intrusiveness, and hostility, and less sensitivity (Berlin, Brady-Smith, & Brooks-Gunn, 2002). However, few studies have examined how individual differences in the parenting of adolescent mothers relate to their children's development, and these studies have rarely included Latinas in their samples. Thus, little is known about the childrearing context and parenting behaviors that underlie the development of cognitive and language skills in children of Latina adolescent mothers. This is concerning, as birthrates of Latina adolescents are substantially higher than those of any other group in the United States (US; Martin, Hamilton, Osterman, Curtin, & Mathews, 2013).

In the current study, we tested prospective relations of aspects of the childrearing context and the parenting behaviors of young Latina mothers to their toddlers' cognitive and language functioning (see Figure 1 for conceptual model). Guided by an ecological framework (Bronfenbrenner & Morris, 1998), which highlights the importance of both the immediate and the broader contexts in which individuals are embedded in shaping their behavior and development, we examined the young mothers' parenting and the children's development within their larger cultural and family context. Traditional Latino values include a deep sense of familismo (feelings of reciprocity, solidarity, and family member interdependence; Vega, 1995). Latina mothers are more likely to turn to family members for help and advice than mothers from other groups. Moreover, grandmothers have an influential role within the extended family and are commonly involved in the care of grandchildren (Shorris, 1992). Latino cultural traditions also emphasize the woman's role as mother and wife and the importance of forming a new family (Shorris, 1992). Similarly, in the case of early or unplanned pregnancies, biological fathers are encouraged to assume their paternal role (García-Coll & Vázquez García, 1996). Consistent with this cultural background, young Latina mothers are more likely to be in long-term relationships and reside with partners than are African American (AA) and European American (EA) adolescent mothers (Moore, Florsheim, & Butner, 2007; Wasserman, Brunelli, Rauh, & Alvarado, 1994). Moreover, Latina adolescents identify their own mothers (grandmothers) and the children's fathers as the family members most commonly involved in the care of children (Grau, Wilson, Weller, Castellanos, & Duran, 2012). Thus, we sought to understand how their involvement impacted the childrearing context and the children's development.

Furthermore, because cultural values influence family members' roles and their childrearing practices (Harknes & Super, 2002; Rogoff, 2003), and these practices in turn influence child development, we considered how mothers' cultural orientation was reflected in the engagement by these family members, the mothers' parenting behaviors, and their children's development. Given that Latinos vary in the extent to which they endorse American and Latino values, we assessed mothers' cultural orientation towards both the American (i.e., acculturation: degree to which they endorse values and behaviors of the mainstream American culture) and the Latino cultures (i.e., enculturation: degree to which they endorse values and behaviors of the Latino culture), and tested a model in which these orientations influence child development directly and/or through their effects on the childrearing context, specifically the level of involvement by grandmothers and the children's biological fathers,

and aspects of the mothers' parenting. Further, in the model, the differential levels of involvement by these family members are thought to influence child development both (a) directly, through the parenting interactions they have with the children; and (b) indirectly, via the effect that their involvement has on the young mothers parenting, which in turn influences child development.

1.1. Children's Cognitive and Language Functioning

Children of adolescent mothers show cognitive and language deficits that start during the second year of life and become more pronounced with development (Whitman et al., 2001). These deficits have been observed in toddlers of different ethnic backgrounds (Jahromi, Guimond, Umaña-Taylor, Updegraff & Toomey, 2014; Whitman, et al., 2001), with children scoring up to one standard deviation below the population mean on standardized measures of cognitive functioning at 24 months. Nonetheless, few studies have examined parenting and family factors linked to these outcomes.

1.1.1. Cultural orientation and children's cognitive and language functioning

To our knowledge, no studies investigated the role of cultural orientation on children's functioning among young Latina mothers. Research on young children of Latino adult parents suggests that parental acculturation relates to children's cognitive and language functioning. Specifically, using parental nativity or language preference as proxies for acculturation, studies found young children of US-born or English-speaking Latino parents scored higher than those of immigrant or Spanish-speaking parents on standardized measures of cognitive and language functioning. Among these studies, those of preschoolers versus infants and those examining language as opposed to cognitive functioning found more consistent group effects (Cabrera, Shannon, West, & Brooks-Gunn, 2006; Fuller, Bridges, Bein, Jang, Jung, Rabe-Hesketh, & Kuo, 2009; Glick, Bates, & Yabiku, 2009). We sought to extend these findings by assessing mothers' cultural orientation more comprehensively through their endorsement of values and behaviors associated with the Latino and American cultures (Cuellar, Arnold, & Gonzalez, 1995). We expected that toddlers of mothers with a stronger orientation to American values and traditions (i.e., higher acculturation) would demonstrate higher functioning, with the relations being stronger for language than cognitive scores. Importantly, we also examined more proximal factors that may account for these links, specifically the engagement in parenting by key family members and the young mothers' parenting behaviors. Although scholars have called for research investigating how culture influences the childrearing context of Latino children, few have heeded this call.

1.2. Maternal Behavior and Child Functioning

Only a handful of studies examined relations between observed parenting behaviors and children's cognitive and language development among adolescent mothers. These studies used mainly samples of EA and AA adolescents and linked positive parenting behaviors (e.g., maternal sensitivity, level of involvement, cognitive stimulation, and positive affect) to higher cognitive or language scores (Field, Widmayer, Adler, & de Cubas, 1990; Hann, Osofsky, & Culp, 1996; Luster & Vandenbelt, 1999). For instance, Rafferty, Griffin, and

Lodise (2011) found higher supportiveness during parent-child interactions (i.e., sensitivity, cognitive stimulation, and positive regard) in infancy related to higher cognitive and receptive language skills by age 3. However, to our knowledge, these relations have not been studied among young Latina mothers. Following the literature, we focused on sensitivity, positive and negative affect, and directiveness displayed toward the child during structured and free play interactions.

1.2.1. Cultural orientation, maternal behavior, and child functioning

Although sensitivity and affectivity do not show ethnic group differences (DeWolff & van Ijzendoorn, 1997), the use of directive behaviors appears to differ across groups. Specifically, research suggests that adult Latina mothers structure their children's environment and direct their behavior more than EA mothers (Carlson & Harwood, 2003; Ispa et al., 2004). In the only study of adolescent mothers, lower acculturation was related to the use of more directive teaching strategies (Teichman & Contreras-Grau, 2006). Based on the above findings, we expected more enculturated mothers to use more directive behaviors than less enculturated mothers.

In regard to effects of parenting on child outcomes, consistent with prior literature, we expected more sensitivity and positive affect and less negative affect to relate to higher cognitive and language scores. The literature on directiveness is mixed. Studies of EA and middle class families show a negative effect on outcomes. However, results for low income and/or AA and Latino families are less consistent. Specifically, some studies showed no or positive relations with child outcomes, especially among younger versus older children and when assessing socio-emotional rather than cognitive functioning (Carlson & Hardwood, 2003; Ispa et al., 2004; McFadden & Tamis-LeMonda, 2013). Thus, we did not have specific predictions for the effects of directiveness. Nonetheless, given previous findings indicating higher directiveness among Latina mothers, as well as lower scores among children of less acculturated Latino parents, we tested whether directiveness mediated the relation between acculturation and child functioning.

1.3. Grandmother and Father Engagement, Maternal Behavior, and Child Functioning

Although some studies examining the relations between grandmother involvement and the young mothers' parenting have found positive associations, others have yielded negative associations, especially when mothers relied on grandmothers for extensive support (Black & Nitz, 1996; Chase-Lansdale, Brooks-Gunn, & Zamsky, 1994; Contreras, Mangelsdorf, Rhodes, Diener, & Brunson, 1999). These negative associations have been found across different ethnic backgrounds. Given the lack of clarity in the literature, we did not have specific predictions for the relations between grandmother engagement and mothers' parenting. Regarding fathers, research indicates that among young Latina mothers engagement in child care by their romantic partners is related to more sensitive and affectively positive behavior (Contreras, 2004). Thus, we predicted a positive relation between father engagement and the young mothers' parenting.

1.3.1. Cultural orientation and engagement by grandmothers and fathers

More highly enculturated Latina adolescent mothers are more likely to remain romantically involved and cohabit with the father of the child than less enculturated mothers (Reynoso, Felice, & Shragg, 1993; Zambrana, Scrimshaw, Collins, Dunkel-Schetter, 1997). More enculturated mothers also report more support from the father than do their less enculturated peers, who identify grandmothers as their main source of support (de Anda & Becerra, 1984; Wasserman, et al., 1994). Thus, we hypothesized that mothers with a stronger Latino orientation would report higher father engagement. In contrast, we expected mothers with a stronger American orientation to report higher levels of grandmother engagement, consistent with findings indicating grandmothers as the main source of support for more acculturated, English-speaking mothers.

1.3.2. Engagement by grandmothers and fathers and child functioning

The differential level of grandmother and father engagement based on mothers' cultural orientation has implications for child functioning in that the childrearing provided by these two family members can influence mothers' parenting behaviors and children's functioning differently. To our knowledge, only one study examined relations between levels of grandmother engagement and children's cognitive functioning. In a sample of EA families, grandmother engagement was not related to the functioning of the adolescent's child (Oyserman, Radin, & Benn, 1993). A few studies with AA samples that examined grandmother co-residence and children's cognitive and language development yielded mixed results (Black & Nitz, 1996; Cooley & Unger, 1991). These relations have not been studied in Latino samples. The larger literature indicates that interactions with additional adult caretakers are beneficial for children's development (Zajonc, 1976). Moreover, although the literature on grandparents has not yielded consistent results, there is some indication that grandmother involvement can be protective, especially when mothers are under stress (Dunifon, 2013). For instance, in a low-income sample, grandmother involvement did not have a direct effect on children's adjustment; however, it buffered the negative effect of harsh maternal behavior on children's behavioral adjustment (Barnett, Scaramella, Neppl, Ontai, & Conger, 2010). Given these findings and the normative nature of grandmother involvement in Latino families (Shorris, 1992), we hypothesized more grandmother engagement would predict higher cognitive and language functioning.

In regard to father engagement and child outcomes, broad, long-term indicators of father involvement (e.g., years in residence, financial support) showed positive direct effects on academic functioning (e.g., higher reading achievement) and buffered children's emotional adjustment when their mothers were at higher risk (Howard, Lefever, Borkowski, & Whitman, 2006). The few studies that examined fathers' parenting engagement specifically did not find a relation (Cooley & Unger, 1991; Rafferty et al., 2011). However, these studies used single-item indicators of mother-reported engagement and samples that did not include Latina mothers. Based on the larger literature on low-income and Latino fathers, which has demonstrated positive links between fathers' engagement and cognitive development in toddlerhood (Shannon, Tamis-LeMonda, London, & Cabrera, 2002), and our use of a stronger engagement measure (Cabrera et al., 2006), we expected a positive relation to child outcomes.

Given that engagement by a co-parent affects children either directly and/or by moderating the other parent's influence on the child (Belsky, 1984; Flouri & Buchanan, 2004), in addition to direct effects, we tested whether engagement moderated relations between maternal behaviors and child outcomes. Finally, in light of our prediction that cultural orientation would influence the relative involvement by grandmothers and fathers, we tested whether their engagement mediated links between maternal cultural orientation and child functioning.

In sum, guided by tenets from ecological and cultural frameworks (Bronfenbrenner & Morris, 1998; Harknes & Super, 2002; Rogoff, 2003) we tested a model (Figure 1) in which children's cognitive and language development is predicted from the interplay of cultural, family, and maternal parenting factors. In the model, mothers' cultural orientation contributes to parenting engagement by grandmothers and fathers and the mothers' parenting, and in turn, children's cognitive and language development. We focused on toddlerhood, because at this age children begin to exert increasing control over their own behavior, imposing additional demands to parents. These changes may be especially challenging for young mothers who are themselves dealing with the development of their own sense of autonomy. This age period is also the time when children of adolescent mothers begin to show deficits (Whitman et al., 2001). Thus, toddlerhood is a critical period to examine in this population. Given the rapid developmental changes occurring in toddlerhood, we used a 6-month interval between assessments, as other studies of adolescent mothers have done (e.g., Hann et al., 1996). To better assess the relative importance of the proposed predictors, we also considered the role of socio-demographic factors (e.g., educational attainment, economic strain) that have been linked to parenting and child outcomes in families of adolescent mothers (Mollborn & Dennis, 2012).

2. Methods

2.1. Participants

Participants for the current study included 170 adolescent Latina mothers and their toddlers. All 170 mothers participated at Wave 1 (W1) when their children were 18 months old. Of these, 149 (87.6%) returned for Wave 2 (W2) when their children were 24 months. Families who returned for W2 did not differ significantly from those who did not return on any of the demographic indicators. The mean age of mothers at the time of the child's birth was 17.9 years ($SD = 1.3$; range: 14.3 – 19.9). Mothers were predominantly of Puerto Rican origin (82.8%); others were of Mexican (7.1%) and Central or South American (10.1%) origin. Approximately 45% were born outside the mainland US. Families resided in low-income Latino neighborhoods and the majority (89%) reported receiving some form of government assistance. At W1, 32.4% of mothers had completed high school or had some post-high school education, 58.2% had completed 9th to 12th grade, and 9.5% had less than a 9th grade education. Close to 26% of mothers reported attending school, and 41% were employed full-time or part time. The children's (54% males) mean age was 18.2 months ($SD = .94$; range: 16.0 – 20.8) at W1 and 24.6 months ($SD = 1.08$; range: 22.3 – 27.4) at W2. At W2, the majority of the children were the only child (74%), and over 92% of the children were born in the mainland US.

Information on the children's grandmothers and biological fathers appears in Table 1. At W1, most mothers (94%) reported having contact with their mothers, and approximately one third (34%) lived with her. All grandmothers were Latina, and 69% were born outside of the mainland. At W1, the mean age of grandmothers was 43.2. Almost half of the grandmothers (43.6%) had completed high school or further schooling, and 41.5% were employed. Finally, the mean age of the children's biological fathers was 22.2 years ($SD = 3.7$). Over 70% of the fathers were Latino, and 54.2% were born in the mainland US. Few fathers (12.4%) were attending school, and 58% were employed; 31.7% of fathers had completed high school or had further schooling. The majority of mothers (82.4%) maintained contact with the child's father, 56% were still in a romantic relationship with the child's father, and 45.3% of mothers lived with him.

2.2. Procedure

The study received Institutional Review Board approval. Most participants (78.2%) were recruited through face-to-face contact in pediatric clinics serving low-income, Latino neighborhoods in a large Midwestern city. Others were referred by friends, self, or by professionals (21.8%). Mothers were enrolled at first contact, regardless of child's age and were followed until the child reached age criteria. To meet eligibility, mothers were required to be 19 years or younger at the time of birth, with a child with no prematurity or major physical or medical problems. Two female researchers conducted home visits (at least one was bilingual) and obtained informed consent from the participant (and a parent or guardian if she was a minor). All assessments were administered in the participant's preferred language (30% Spanish). At both waves, children were administered a developmental test. Mothers were video-recorded interacting with their child and interviewed using a computer assisted procedure in which each question was presented on the screen and read aloud by the researcher to control for reading level. Mothers received \$70 for their participation.

2.3. Measures

Mean and standard deviations for the main variables appear in Table 2. Cronbach's alphas are provided below, separately for English and Spanish responders.

2.3.1 Acculturation and enculturation—Acculturation and enculturation were assessed using the Anglo (Acculturation; 13 items) and Latino (Enculturation; 17 items) Cultural Orientation Subscales of the Acculturation Rating Scale for Mexican Americans-II (ARSMa-II; Cuéllar et al., 1995). The scale is used with Latinos of different heritages by substituting the word Latino for Mexican. Mothers rated items regarding cultural activities, ethnic identity, language use, and social interaction (e.g., My family cooks Latino food, My friends now are of Latino origin) on a 5-point Likert-type scale, ranging from 1 – 'Not at all' to 5 – 'Extremely Often or Almost Always.' Scores were calculated by averaging across items. The subscales showed adequate internal reliabilities in the normative sample (Cuéllar et al., 1995). In the current study, both had adequate reliability (Acculturation: $\alpha = .93$ whole sample; $\alpha = .93$ English; $\alpha = .89$ Spanish; Enculturation: $\alpha = .86$ whole sample; $\alpha = .86$ English; $\alpha = .85$ Spanish).

2.3.2. Parenting engagement by grandmothers and fathers—Mothers reported on parenting engagement by grandmothers and fathers. They first rated the overall frequency of child care help they received from each using a 10-point scale, ranging from 1 – ‘Never’ to 10 – ‘6 or more times a day.’ They then completed 11 items from a measure of father engagement in parenting used in the ECLS-B study which included Latino parents (Cabrera et al., 2006). Mothers rated items assessing frequency of didactic care (e.g., sing songs, read stories), physical play (e.g., play with toys, tease child to get him/her to laugh), and care giving (e.g., bath, feeding) during the past month. Responses ranged from ‘0’-never to ‘6’-several times a day’. Scores on mother-reported involvement by grandmothers and fathers were averaged across items. The measure had adequate internal consistency in the current sample (Grandmother: $\alpha = .90$, whole sample; $\alpha = .89$, English and $\alpha = .93$, Spanish; Father: $\alpha = .87$, whole sample; $\alpha = .88$, English and $\alpha = .84$, Spanish). Overall frequency of child care help and parenting engagement were highly inter-correlated within provider (grandmothers: $r = .87, p < .001$; fathers: $r = .88, p < .001$) and were standardized and averaged to create an index of mother-reported parenting engagement by grandmothers and fathers.

2.3.3. Economic strain—The Economic Strain Questionnaire (ESQ; Pearlin, Menaghan, Lieberman, & Mullan, 1981), a seven item self-report measure, was used to assess financial difficulties. Participants responded to questions such as, ‘Do you feel your household is able to afford decent housing?’ Responses ranged from 1 – ‘Never’ to 5 – ‘Always.’ Items were recoded such that higher scores reflected more strain and averaged to create a mean score. Adequate reliability was found for the overall sample ($\alpha = .81$) and with English and Spanish respondents ($\alpha = .82$ and $\alpha = .82$, respectively).

2.3.4. Maternal behaviors—Maternal behaviors were assessed during structured and free play episodes. For the structured play observation (5 minutes), mothers were asked to teach their child how to play with a shape sorter that was slightly developmentally advanced for the children. For the free-play episode (10 minutes) mothers were asked to play with their child as they normally would when playing with a set of age appropriate toys. The episodes were coded for sensitivity, positive and negative affect, and directiveness using four global 9-point scales that were derived from scales used by Isabella (1993) and adapted for the assessment of behavior among young Latina mothers (Contreras, 2004; Contreras, Mangelsdorf et al., 1999). Sensitivity assesses the timing and appropriateness of the mothers’ responses to the children’s signals. Positive affect reflects the frequency and intensity of positive affect (e.g. smiling, kissing, positive vocal tone) displayed by the mother. Negative affect measures the frequency and intensity of hostility, annoyance, and disapproval exhibited toward the child. Directiveness assesses the extent to which the mother imposes activities and commands the child. These scales showed conceptually meaningful relations with predictors of parenting and child behavior in prior research with Latina adolescent mothers. For example, greater overall network social support and partners’ childcare support related to more sensitive and affectively positive behaviors and toddlers of more sensitive mothers displayed more responsive and affectively positive behavior toward their mothers (Contreras, 2004; Contreras, Mangelsdorf et al., 1999).

Three coders (two bilingual/bicultural and one with college level Spanish training) who were blind to the other data of the families overlapped on 25% of the observations to assess agreement. Inter-rater reliability based on intra-class correlations was .92, .91, .83, .91 (structured play task) and .86, .85, .74, .91 (free play task), for sensitivity, positive affect, negative affect, and directiveness, respectively. The scales were correlated across episodes ($r = .35, .35, .43, .28$; all p 's $< .001$; for sensitivity, positive affect, negative affect, and directiveness, respectively), and were standardized and averaged to create composites reflecting sensitivity, positive affect, negative affect, and directiveness across the two play tasks.

2.3.5. Child cognitive and language functioning—The Bayley Scale of Infant and Toddler Development- 3rd Edition (BSID-III; Bayley, 2006) was administered to assess children's cognitive and language functioning at 18 and 24 months. The Cognitive Scale uses play, memory, problem-solving, and information-processing tasks to examine how children think, react, and learn. The Language Scale requires children to identify pictures and objects, follow directions, perform social routines, name objects or pictures, and answer questions; it yields scores for receptive and expressive language. The BSID-III has been used with diverse populations in the US, although an official Spanish translation is not currently available. Thus, we created Spanish versions of all instructions, items and responses. These were translated into Spanish and then back translated to English by different bicultural translators. The versions were then examined for equivalence by a team of bilingual and bicultural researchers, who solved any discrepancies (Knight, Roosa, and Umaña-Taylor, 2009). Trained bilingual examiners matched the language(s) used by the children (W2: 40%, 25%, 35% for English, mixed, and Spanish, respectively) and accepted child responses in either language.

3. Results

3.1. Analytic Approach

We first present analyses to examine continuity and change in children's cognitive and language functioning, followed by descriptive information on mothers' cultural orientation. We then describe preliminary analyses used to inform the selection of parenting behaviors and covariates to include in the main analyses. Specifically, given sample size constraints, we tested associations between the maternal behaviors and children's scores at W2 to select behaviors with significant associations with child outcomes to include in the path models. To better assess the relative importance of the proposed predictors, we also assessed associations of socio-demographic factors to maternal behavior and child functioning. Variables showing significant associations were included as covariates in the models.

Finally, we tested our hypothesized model with path analyses in MPlus (Muthen & Muthen, 2007) using maximum likelihood estimation. In the models, we tested the relations of acculturation and enculturation, the engagement variables, and maternal behaviors at W1 to child functioning at W2 after taking into account W1 functioning. Both acculturation and enculturation and grandmother and father engagement were included as predictors in order to examine each of their effects above and beyond the effect of the other. Interactions were

tested using centered scores (Aiken & West, 1991), and simple slope analysis was used to decompose significant interactions (Preacher, Curran, & Bauer, 2006). We tested the three indirect effects based on MPlus calculations: (1) acculturation and child functioning via grandmother engagement, and enculturation and child functioning via (2) father engagement and via 3) maternal directiveness. To assess model fit we examined the model χ^2 test, the confirmatory fit index (CFI), and the root mean square error of approximation (RMSEA). Good fit was defined as non-significant χ^2 tests, CFI values greater or equal .95, and RMSEA values below .05 (Hu & Bentler, 1999).

3.2. Descriptive Information on Children's Cognitive and Language Scores, and Mothers' Cultural Orientation

The mean cognitive and language composite scores at W2 were on the low end of the average range (Cognitive: $M = 86.78$, $SD = 7.82$; Language: $M = 86.82$, $SD = 9.75$). Seventy-two percent and 60% of the children scored at or above the normal range in the cognitive and language scales, respectively, and scores did not differ by gender. There was rank order stability in scores from 18 to 24 months (Table 2). However, paired t-tests indicated that cognitive ($t(148) = 8.65$, $p < .001$; 93.20, $SD = 8.9$ vs. 86.78, $SD = 7.8$) and language ($t(148) = 3.23$, $p = .002$; 89.08, $SD = 9.8$ vs. 86.82, $SD = 9.8$) scores were significantly lower at W2 than W1. These declines represent .4 and .13 standard deviations in the cognitive and language composite scales, respectively. Comparisons of expressive and receptive scaled scores indicated a significant decrease in expressive scores ($t(148) = 3.75$, $p < .001$), representing .2 standard deviations. Receptive scores were only marginally lower ($t(148) = 1.82$, $p = .07$) at W2.

Mean scores for both the American (range = 1 to 5) and Latino cultural (range = 2 to 5) orientations scales were above the midpoint (3) of the 5-point Likert scale (see Table 2), although mothers scored higher on the Latino than American cultural orientation scales ($t(169) = -3.9$, $p < .001$). Only 11% of the mothers scored below the midpoint of the Latino orientation scale (27% scored below the midpoint on acculturation). Thus, most mothers endorsed relatively high levels of enculturation, and only a few of those who endorsed relatively high levels of acculturation also endorsed low enculturation.

3.3. Maternal Behaviors and W2 Cognitive and Language Scores

Intercorrelations among study variables appear in Table 2. Two of the four maternal behaviors (assessed at W1) were significantly associated with child functioning at W2. Mothers who displayed more directiveness had children who received lower cognitive and expressive language score. Mothers who displayed more positive affect had children who scored higher on the expressive language scale. None of the behavior variables were correlated with receptive language, and no further analyses were computed for this outcome. Thus, subsequent analyses tested prospective relations between maternal directiveness and cognitive scores and between both directiveness and positive affect and expressive language scores.

3.4 Selection of Covariates

We first assessed relations between socio-demographic variables and maternal positive affect and directiveness. Potential covariates included: W1 maternal age, education, receipt of government assistance, work and school status, residence with grandmothers / fathers, government assistance, and economic strain, W1 fathers' and grandmothers' age, education, work status, and for fathers only school status. Higher levels of maternal education were related to mothers' displays of more positive affect ($r = .15, p = .05$), and mothers who were employed displayed more directiveness ($r = .19, p = .02$). Potential covariates for children's W2 scores included fathers' education level and children's age, gender, and parity (child has a sibling vs. only child). Only children scored higher in cognitive ($r = .18, p < .03$) and expressive language ($r = .17, p < .04$) than children with siblings. Thus, maternal education was used as a covariate for maternal positive affect, work status as a covariate for maternal directiveness, and child parity as a covariate for cognitive and expressive language scores.

3.5. Path Analyses Predicting Cognitive and Expressive Language Scores

Results for the model testing increases in cognitive skills appear in Figure 2. Fit indices ($\chi^2(12) = 18.5, p = .10$, CFI = .92, RMSEA = .056) indicated a reasonably good fit, and the model accounted for 26% of the variance in (W2) cognitive scores. In regard to covariates in the model, children who received higher cognitive scores at W1 ($\beta = .40$) and those who were the only child ($\beta = .16$) demonstrated higher cognitive functioning at W2. Higher acculturation (and not enculturation) was related to greater grandmother engagement ($\beta = .29$), and higher enculturation (and not acculturation) was related to greater father engagement ($\beta = .20$), but neither acculturation nor enculturation predicted cognitive scores. Higher levels of grandmother (and not father) engagement predicted higher cognitive attainment ($\beta = .16$). The relation between maternal directiveness and cognitive scores was moderated by father (but not grandmother) engagement ($\beta = .20$). To interpret the interaction we plotted the predicted cognitive scores, separately for low (-1 SD), mean (0), and high ($+1$ SD) levels of engagement (Figure 3). Tests of simple slopes (Preacher et al., 2006) indicated that maternal directiveness significantly related to lower cognitive scores when father engagement was low ($\beta = -.33, p = .001$), but not when it was high ($\beta = .05, p = .58$); at mean levels of engagement, directiveness was marginally related to lower scores ($\beta = -.15, p = .053$).

In regard to indirect effects, the relation of acculturation to cognition via grandmother engagement approached significance ($\beta = .05, p = .07$); the relation of enculturation to cognition via father engagement was not significant. To test the indirect effect of enculturation to child cognition via directiveness, we set father engagement at low levels (-1 SD) because directiveness was related to cognition only at low levels of engagement. Following procedures by Preacher, Rucker, and Hayes (2007), results yielded a significant conditional indirect effect of enculturation to cognition via directiveness when father engagement was low ($\beta = -.87, p < .05$).

Results for the model testing expressive language appear in Figure 4. Fit indices, $\chi^2(19) = 27.2, p = .10$, CFI = .94, RMSEA = .05 indicated a good fit, and the model accounted for 46% of the variance on W2 expressive language. In regard to covariates, children who

received higher language scores at W1 ($\beta = .54$) scored higher in expressive language, and mothers with more education displayed marginally greater positive affect ($\beta = .14$). Children of mothers with a stronger American orientation scored higher on expressive language ($\beta = .17$). As with cognition, greater grandmother (but not father) engagement predicted higher scores ($\beta = .18$). In regard to maternal behaviors, higher positive affect predicted greater expressive language gains ($\beta = .17$); directiveness was not significant. Neither the interactions nor the indirect effects of enculturation on expressive scores were significant. In contrast, the indirect effect of acculturation on expressive scores via grandmother involvement was significant ($\beta = .053, p = .03$).

4. Discussion

Latina adolescent mothers have the highest birthrate in the US (Martin et al., 2013), yet little is known about their children's development or the childrearing environment in which they are raising their children. To our knowledge, this is the first study to test how cultural, family and parenting factors contribute to children's subsequent cognitive and language attainment among young Latina mothers and their toddlers. In doing so, the study contributes to our understanding of their childrearing context, identifies factors related to more optimal child cognitive and language development, and highlights the role of cultural orientation in shaping aspects of the childrearing environment and children's development.

Children's cognitive and language functioning was stable from 18 to 24 months. However, standardized cognitive and expressive language scores decreased significantly across time. Although the level of decline was not large, the fact that it occurred over only six months portends clear developmental concerns for these young children. The level of decline and the overall level of functioning found in our sample are consistent with that observed in toddlers of different ethnic backgrounds on similar measures of cognitive and language abilities (Jahromi et al., 2014; Whitman et al., 2001). These findings corroborate the critical need to uncover family and parenting factors linked to development early in these children's lives. With this goal in mind, we tested a model in which mothers' cultural orientation, engagement by grandmothers and fathers, and mothers' parenting behaviors, together contributed to the prediction of children's development during the second year of life. We found some support for the model, specifically in predicting children's cognitive and expressive language development.

4.1. Cultural Orientation, Family Engagement, and Child Outcomes

As proposed in our model, mothers' cultural orientation was associated with aspects of the childrearing environment. Specifically, higher maternal acculturation was related to the report of more parenting engagement by grandmothers. In contrast, endorsement of a stronger Latino orientation was related to higher father engagement. These findings are consistent with cultural traditions (García-Coll & Vázquez García, 1996) and prior findings indicating less acculturated adolescents are more likely to remain involved with the child's father and report more support from him than their more acculturated peers, who identify grandmothers as their main source of support (Reynoso et al., 1993; Zambrana, et al., 1997). To the extent that fathers are involved in the care of the child, mothers may rely less on

grandmothers for child care. These findings also need to be considered in the context of the sample characteristics. On average, mothers endorsed moderate to high levels of both acculturation and enculturation, and very few endorsed low levels of enculturation. Thus, the association of acculturation to grandmother engagement, for example, reflects the effect of acculturation in the context of relatively high levels of enculturation. The extent to which these findings generalize to samples with different levels of acculturation and enculturation is unclear.

Importantly, engagement by grandmothers and fathers had different implications for children's development. Children of mothers who reported more grandmother engagement made stronger cognitive and language gains, and grandmother engagement helped explain the link between higher acculturation and language gains. Grandmothers may promote development through direct interactions with the children, or through their provision of other resources, such as material resources that may benefit children's cognitive and language attainment (Moore & Snyder, 1991). We were interested in determining if their effect on child functioning stemmed from their influence on the mothers' parenting. However, grandmother engagement was not related to any of the behaviors we assessed. Given the mixed findings in the prior literature, this lack of association is not entirely surprising. A number of explanations have been proposed for the negative associations that have been found between grandmother engagement and the mothers' parenting. The explanation that has received most research attention suggests the negative effects are due to the increased psychological distress, relationship strain, and/or child-rearing conflicts that arise from the young mothers' continued, extensive reliance on grandmothers at the same time that they expect increased autonomy from them (Grau et al., 2012). Consistently, mothers whose relationships with grandmothers are low in conflict and high in emotional support or demonstrate a balance in autonomy and mutuality show more competent parenting (Contreras, 2004; Wakschlag, Chase-Lansdale, & Brooks-Gunn, 1996). Thus, these aspects of the grandmother-mother relationship likely influence the link between level of engagement and the young mothers' parenting. The promotive effect of grandmothers' engagement on children's development underscores the need for further research on the grandmother-mother relationship. Understanding the factors that may enhance or detract from the young mothers' ability to benefit from their mothers' engagement in parenting would help guide interventions that can have positive effects on both the young mother and her child.

In contrast to grandmother engagement, father engagement did not have a direct link to child outcomes. This lack of association is consistent with prior nonsignificant findings for adolescents of EA and AA origin (Rafferty et al., 2011). Given that most fathers in our sample were in the late adolescent to emerging adulthood range, they may have been less prepared to parent in ways that promote children's development. Future studies should include a measure that reflects both quality and frequency of father-child interactions to better capture their parenting. Given their involvement in childrearing, it is important to uncover ways in which they can promote their children's development, for example, by participating in parenting programs.

Nonetheless, father engagement played a protective role when mothers displayed high levels of directiveness, such that it lead to lower cognitive scores only at low levels of father engagement. At high levels, directiveness had no consequences for child cognitive development. More highly engaged fathers might buffer children directly through their father-child interactions that supplement the stimulation and opportunities for exploration that are provided by more directive mothers. They may also provide economic resources that contribute to children's cognitive development (Moore & Snyder, 1991). In addition, mothers who report more father engagement may feel more supported by them, which can influence mothers' emotional well-being (Contreras, Lopez, Rivera-Mosquera, Raymond-Smith, & Rothstein, 1999) or other aspects of her parenting that, in turn, influence child cognitive functioning. In fact, consistent with prior research with young Latina mothers (Contreras, 2004), mothers who reported greater father engagement also displayed more sensitive and less affectively negative behaviors during their mother-child interactions. Although these specific maternal behaviors were not related to the outcomes included in this study, it is reasonable to expect they would relate to child functioning in other domains, such as emotional and behavioral functioning, as has been found in the larger literature (DeWolff & van Ijzendoorn, 1997). Future studies examining child outcomes in other domains would be helpful to better delineate the influence that fathers have on both the adjustment of young mothers and the development of their children.

4.2. Cultural Orientation, Maternal Behavior, and Child Functioning

As expected, directiveness, but not the other behaviors assessed, related to mothers' endorsement of a higher Latino cultural orientation. This result is consistent with findings for adult mothers (e.g., Carlson & Harwood, 2003) and the only prior study of Latina adolescents, which found that less acculturated mothers displayed more directive teaching strategies (Teichman & Contreras-Grau, 2006). Interestingly, directiveness did not predict children's expressive language and was linked to lower cognitive functioning only when mothers reported low levels of father engagement. This suggests that, in more normative contexts (i.e., co-parenting by the mother and father), young Latina mothers' use of directiveness does not have detrimental effects for children's cognitive development. Overall, these findings add to the growing literature demonstrating differential effects of directiveness across different populations.

Positive affect was the other parenting behavior that showed associations to child functioning. Specifically, mothers who displayed more frequent and intense positive affect during mother-child interactions had children who made stronger strides in their development of expressive communication than those of less affectively positive mothers. This result is in line with findings for EA and AA young mothers, which indicated that maternal positive affect (although not sensitivity or negative affect) at 13 months was related to children's vocabulary at 44 months (Hann et al., 1996). Mothers' positive regard and gestural and vocal expressions may encourage and help maintain children's engagement in reciprocal interactions with their mothers, and these interactions may provide increased stimulation and facilitate toddler's emerging language skills. Similar to studies highlighting maternal education as a particularly strong predictor of early language development (Coddington, Mistry, & Bailey, 2014), mothers with more years of education tended to

display higher positive affectivity, which in turn translated into stronger gains in children's expressive language skills. Given the importance of early language for children's later functioning, these findings highlight the relevance of continuing education programs for both the parenting of young mothers and their children's development.

4.3. Cultural Orientation and Child Functioning

Neither acculturation nor enculturation were directly linked to cognitive functioning, but higher levels of acculturation predicted higher expressive language attainment. These findings are in line with prior literature documenting more consistent group differences in child language than cognitive functioning by Latino parent nativity and language preference (e.g., Fuller et al., 2009). Our results extend those findings by using a more direct measure of cultural orientation that can better capture the variability present within these subgroups. We also sought to shed light on proximal factors that may account for the parent nativity and language-use group differences found in previous studies. Given that maternal directiveness has been postulated as one of the factors explaining these group differences (Cabrera et al., 2006; Fuller et al., 2009), we tested whether cultural orientation related to child language via maternal directives. In our study, mothers with a stronger orientation toward Latino culture used more directive behaviors than less enculturated mothers. However, directiveness was not related to children's expressive language, and thus did not explain the acculturation-expressive language link. On the other hand, grandmother engagement helped explain the link between acculturation and higher expressive language skills. Importantly, even when accounting for this indirect effect, acculturation remained significantly linked to expressive language skills. It would be important for future studies to continue to investigate the processes through which higher levels of acculturation may lead to increases in children's language development.

In aggregate, the current findings for cultural orientation indicate differences in family processes linked to child development in young Latino families with varying levels of acculturation and enculturation. These findings join those of prior research with adult Latino families (Gonzales, Fabrett, & Knight, 2009; Calzada, Huang, Anicam, Fernandez, & Brotman, 2012) in highlighting the need to consider the independent effects of acculturation and enculturation to arrive at a more complete understanding of parenting and child outcome processes in Latino families. At the same time, acculturation and enculturation were only modestly negatively correlated. Therefore, it is also important to consider that mothers could score relatively high in both, reflecting different degrees of a bicultural orientation. An important next step for this research would be to examine more directly how a dual cultural orientation may influence the childrearing context and parenting practices of young Latina mothers, and in turn, the developmental outcomes of their children.

4.4. Study Limitations

Although our findings make important contributions to our understanding of the development of toddlers of Latina adolescent mothers, there are several limitations that warrant discussion. The reliance on mothers' reports of grandmother and father engagement may have biased our results. Our independent assessment of maternal behavior and child functioning suggests that our findings are not due solely to shared method variance.

Nonetheless, inclusion of grandmothers' and fathers' reports would strengthen our results. A next step for this research could also include an examination of the different mechanisms through which grandmothers and fathers may contribute to young mothers' parenting and their children's development.

We were able to document longitudinal links to children's cognitive and language functioning; however, we relied on cross-sectional data for our examination of the associations among cultural orientation, engagement, and parenting behaviors. Thus, we tested indirect effects using W1 data for both the predictor and mediator variables. The ability to test prospective associations of parenting engagement by family members or maternal cultural orientation to mothers' parenting, for example, would greatly enhance our ability to delineate direct and indirect effects of maternal and family characteristics on children's development. In addition, obtaining child assessments at longer intervals would have allowed us to better capture predictors of developmental change. The modest associations we found between parenting behaviors and changes in child functioning may have also been due to the relatively limited variability present in the scales we used to code maternal behavior. It is not clear what the reasons for this low variability are, but it may be partly due to the developmental stage and/or the impoverished background of the mothers, which could limit the representation of high, positive scores on some of the scales. In addition, although these scales have shown conceptually meaningful associations with both predictors of parenting and child behavior in prior studies of Latina mothers, they may have not sufficiently captured unique aspects of the parenting displayed by the mothers in our sample. An important step for future research would be the development and/or further adaptation of observational scales that can more completely capture parenting among Latina and adolescent mothers.

It would also be helpful to obtain grandmothers' and fathers' reports of their cultural orientation, in order to more completely capture how cultural factors may influence the childrearing context. Finally, given that the mothers in our sample were of low-socio-economic-status and primarily of Puerto Rican origin, our results cannot generalize to young mothers of other economic or ethnic backgrounds. Future studies should examine whether a similar pattern of findings emerges with adolescents of other economic and ethnic background, as well as samples of mothers with different levels of acculturation and enculturation.

4.5. Implications for Intervention

Our findings have implications for intervention with young Latina families. Parenting programs can be adapted for the needs of Latina adolescents by being sensitive to their varying cultural orientations and family contexts. This is especially important when addressing culturally-based parenting behaviors, such as directiveness. Given that grandmother and father engagement were related to more positive functioning in either the child or the mother, encouraging the involvement of both family members in the programs should be a priority. Involvement of both family members may be especially helpful for bicultural mothers, who may benefit from both grandmothers' and fathers' engagement.

Work with fathers could focus on strengthening their co-parenting relationship and facilitating continuing father engagement.

In closing, this study contributes to our understanding of the factors related to more optimal cognitive and language development in children of young Latina mothers during toddlerhood. Findings suggest that the pattern of childrearing factors operating in these families differed according to mothers' cultural orientation, and these differences had important implications for the children's development. Knowledge of these differences is critical in order to tailor intervention programs that can adequately serve these at-risk families.

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Figure 1.
Conceptual Model.

Figure 2.

Results of path analyses predicting children's cognitive scores at W2. (N= 170). Values shown are standardized path coefficients. Covariances among independent and dependent variables were estimated but not included in the figure. Only significant paths are shown for sake of clarity. W1 = Wave 1; W2 = Wave 2. † $p < .06$; * $p < .05$, ** $p < .01$; *** $p < .001$.

Figure 3. Father engagement moderates the relation between maternal directiveness and child cognitive Scores. $**p = .01$

Figure 4.

Results of path analysis predicting children's expressive language at W2. (N= 170). Values shown are standardized path coefficients. Covariances among independent and dependent variables were estimated but not included in the figure. Only significant paths are shown for sake of clarity. W1 = Wave 1; W2 = Wave 2. † $p < .06$; * $p < .05$; ** $p < .01$; *** $p < .001$

Table 1

Descriptive Information on Grandmothers and Biological Fathers

	Child's Grandmother	Child's Father
Mean Age (years)	43.2 yrs.	22.2 yrs.
Ethnicity (Latino)	100%	77%
Nativity (born in U.S.)	32.5%	54.2%
School status (attending)	-	12.4%
Level of education (high school degree or beyond)	43.6%	31.7%
Employment status (employed)	41.5%	58%
In romantic relationship with child's mother (yes)	-	56%
Living with child's mother (yes)	34%	45.3%

Table 2
Bivariate Correlations, Means, and Standard Deviations for Main Study Variables and Covariates.

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<u>Wave 1</u>																
1. Acculturation	-															
2. Enculturation	-.31	-														
3. GM Engag.	.26	.01	-													
4. CF Engag.	-.06	.20	-.09	-												
5. Sensitivity	.10	-.05	-.08	.19	-											
6. Pos. Affect	.04	-.03	-.04	-.02	.31	-										
7. Neg. Affect	.11	-.19	.08	-.27	-.46	-.21	-									
8. Directiveness	-.16	.23	.08	-.06	-.74	-.18	.33	-								
9. M's Educ.	.24	-.15	.06	.03	.17	.15	-.14	-.06	-							
10. M's Work ^a	.03	.02	-.09	.05	-.11	.00	.10	.19	.28	-						
11. Cognitive ^b	-.06	-.08	.06	.14	.02	.04	-.01	-.11	-.06	-.08	-					
12. Exp. Lang. ^c	.13	-.08	.14	.05	.13	.12	-.03	-.13	.08	.14	.32	-				
13. Rec. Lang. ^c	.19	-.09	.15	-.01	.17	.15	-.04	-.17	-.03	-.04	.32	.54	-			
<u>Wave 2</u>																
14. Only Child ^d	-.03	-.10	.08	-.06	-.04	.22	-.04	.08	.06	.12	.15	.07	.02	-		
15. Cognitive ^b	.13	-.12	.21	.00	.12	.14	-.07	-.16	.18	.01	.40	.29	.26	.17	-	
16. Exp. Lang. ^c	.31	-.18	.29	.02	.09	.26	-.06	-.16	.16	.02	.30	.60	.52	.16	.41	-
17. Rec. Lang. ^c	.17	-.05	.16	-.05	-.06	.07	.09	-.03	.12	.05	.29	.31	.51	.12	.50	.61
Mean	3.47	3.87	3.15	3.04	4.96	3.94	1.94	4.26	6.03	41%	93.5	8.79	7.65	74%	86.8	8.16
S.D.	.99	.65	1.58	1.71	1.24	1.02	.98	1.64	2.03		8.82	1.99	1.92		7.82	1.82

Note: Full sample size (N=170) is provided using maximum likelihood estimation. M = Mother; GM = Grandmother; CF = Child's Father; Engag. = Engagement; Educ = Education

^a (0=not working, 1= working); Pos. = Positive; Neg. Negative; Exp. Lang. = Expressive Language; Rec. Lang. = Receptive Language.

^b Mean = 100, S.D. = 15

^c Mean = 10, S.D. = 3

05. p (0=not only child, 1=only child). Values presented in bold are significant at least at the p

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