

## Fathers' Influence on Their Children's Cognitive and Emotional Development: From Toddlers to Pre-K

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*We present findings based on several of our recent studies that have shown that father engagement has significant effects on children's cognition and language at 24 and 36 months and their social and emotional development at 24, 36 months, and pre-Kindergarten. These studies are guided by the Dynamics of Paternal Influences on Children over the Life Course Model that stipulates the important contribution of parent characteristics, child and context to parenting and children's outcomes. Specifically, three research questions are addressed: (1) How do resident fathers engage with their young children at 24, 36, and 64 months (pre-K)? (2) How do fathers' human and financial resources and depressive symptoms, partner relationship quality and mother-child interactions, and children's characteristics predict the quality of fathers' engagements with their young children? And (3) how do fathers' engagements affect their young children's cognitive, language, and social and emotional outcomes across the three age groups? Educated fathers and fathers whose partners have supportive relationships with their children are more supportive and less intrusive. In contrast to mothers, fathers' supportiveness matters for children's language, cognitive, and language development across ages and emotional regulation at 24 months. On the other hand, maternal intrusiveness is negatively associated with emotional regulation at 24 and pre-K and language development at pre-K. Father intrusiveness had a small negative effect on language development only at pre-K and no effect at all on social emotional regulation. These findings suggest that programs that aim at increasing fathers' education and that promote and encourage fathers' positive parenting will yield large benefits for children.*

In recent years, scholarship on *resident low-income fathers* has made important contributions to our understanding of how fathers affect children's development. It has shown that men are involved with their young children in multiple ways through their accessibility, responsibility, and engagement; the quality of father engagement, or father-child interactions, can be positive and supportive; positive father-child interactions matter for children's development, with different effects emerging at different points in development (Cabrera, Ryan, Shannon, Brooks-Gunn, Vogel, Raikes,

Tamis-LeMonda, & Cohen, 2004; Lamb, 2004; Shannon, Tamis-LeMonda, & Cabrera, 2006; Tamis-LeMonda & Cabrera, 2002); and, that father-child interactions are embedded in a larger ecology that includes mother-father relationship and the family human and financial resources (Lamb, 2004). This article presents an integration of findings across several of our recent studies that have contributed to each of these areas.

First, we present findings that address the question of how resident fathers are engaged with their young children at 2 years, 3 years, and pre-kindergarten (pre-K). These findings are important because they are based on observed rather than survey data and show that the quality of father-child interactions is consistent across time

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and that fathers, like mothers, can be sensitive and supportive to their children.

Second, we highlight central fathers' personal and contextual characteristics that affect fathers' engagement. In particular, we focus on fathers' human and financial resources and mother-child interactions. These findings shed light onto particular personal and contextual factors that are central to positive parenting over time, which programs and policies can target for effective interventions.

Third, we focus on how fathers' engagements affect their young children's cognitive, language and social, and emotional outcomes over and above mothers' contribution. The extant literature on low-income fathers has focused on the effects of absent fathers and men's lack of resources on children's development. In contrast, our findings show that fathers who engage with their children in positive ways have significant effects on their cognition and language at 2 and 3 years (Shannon, Tamis-LeMonda, London, & Cabrera, 2002; Tamis-LeMonda, Shannon, Cabrera, & Lamb, 2004) and their social and emotional development at 2 and 3 years and at pre-kindergarten (Cabrera, Tarkow, & Shannon, 2006). These findings are important because they show that fathers uniquely contribute to children's cognitive and social and emotional development above the effects on mothers' engagement on children.

These studies are guided by the Dynamics of Paternal Influences on Children over the Life Course Model that stipulates the important contribution of parent characteristics, child and context to parenting and children's outcomes (Cabrera, Fitzgerald, Bradley, & Roggman, this issue). These findings add to the literature in several ways: First, they focus on an ethnically/racially diverse, low-income sample of fathers who reside with their young children. Second, they show that low-income fathers can make significant contributions to their children's development. Third, these findings are based on observations of fathers and their children and hence move us beyond methodologies that rely on mothers as proxy respondents for fathers.

## Methods

### Participants

Participants were drawn from research sites that participated in both the National Early Head Start Research and Evaluation Project (EHS study) and the EHS Father Study's Project. Ten of 17 EHS sites participated in the father component of the main study at 2 and 3 years and 12 participated at pre-K time point (Cabrera et al., 2002; Tamis-LeMonda et al., 2004). Families ( $N = 1,685$  at

2/3 years,  $N = 2,115$  at pre-K) were enrolled into the study when they initially applied to have their children receive childcare and parenting services at the local Early Head Start program that is partners in the EHS study. Written consent to participate in the EHS study and family baseline data (e.g., maternal age, race/ethnicity) were obtained from mothers at the start of the research and from fathers at their initial visit.

Because the majority of fathers who participated in the video portion of the study were biological and resident (i.e., 85% at 2 and 3 years, 75% at pre-K), we only include families with a resident biological father at each age point. For the 2 and 3 year time points we report on a sample of 290 (see Tamis-LeMonda et al., 2004) and at pre-K we report on a sample of 313. These samples include families for whom we had father video data on at least one assessment.

Given the design of the study (mothers identified fathers, but not all identified fathers agreed to participate in the study), the fathers who ultimately participated in study 1 (2 and 3 year time point) and study 2 (pre-K time point) of the EHS father study are a select group of men (see Tamis-LeMonda et al., 2004). Compared with those who did not participate in the father study, participating fathers and their children's mothers were more likely to be married and/or cohabiting, White or Latino, completed more years of education, and were more likely to be employed. Additionally, their children had higher scores on cognitive and social and emotional tests than children from nonparticipating families (see Tamis-LeMonda et al., 2004 for a complete analysis of selection bias).

The majority of fathers in these reported studies were White (60%, 60%, and 51%, respectively); the remaining fathers were largely African American followed by Latino. Across the three ages, approximately 1/3 to 1/2 of fathers had less than high school degree; remaining fathers had high school degrees or more. Almost all fathers reported working full-time or part-time at the various ages, ranging from 84% to 96%. However, the annual income for families at pre-K was larger (\$59,459) than it was at 2 and 3 years (\$18,820 and \$25,440, respectively). Children averaged 25 months at the time of the 2-year visit, 37 months at the 3-year visit, and 64 months at the time of the pre-kindergarten visit; about half at all three ages were boys.

### Procedures

Once fathers had been identified by the child's mother, they were contacted to participate in the study. Participating fathers were administered a

father questionnaire and mother–child and father–child dyads were videotaped in separate home visits when children were 2 and 3 years, and about to enter kindergarten. Children’s cognitive, language, and social and emotional development were assessed by a trained tester at the mother visit. Fathers were given \$20 at the 2- and 3-year visits and \$30 at the pre-K visit and children were given a gift.

Father–child interactions were videotaped during three activities, including 10 or 15 min of semi-structured free play, which was the focus of the investigation. During free play, toys were presented to fathers in three separate bags. Toys were selected to be age appropriate and to offer dyads the opportunity to engage in both concrete and symbolic forms of play (e.g., at 2 years, the father toys included: bag #1—a book, bag #2—a pizza set and telephone, and bag #3—a farm with farm animals; see Tamis-LeMonda et al., 2004 and Cabrera et al., 2006, for description of toys used at the other ages). Fathers were asked to sit on a mat with his/her child, try to ignore the camera, and to do whatever felt most natural. They were instructed to only play with the toys from the three bags and to start with bag #1, move on to bag #2, and finish with bag #3. They were told that they could divide up the 10 min or 15 min as they liked.

## Measures

### Parent Characteristics

The majority of demographic characteristics were collected from the father interview. Family income was gathered from standards measure of employment (Cabrera et al., 2002). Measures to assess children’s development included: The mental and behavior ratings scales (i.e., emotional regulation and orientation/engagement factors) of the Bayley Scales of Infant Development, 2nd Edition (BSID-II) (at 2 and 3 years; Bayley, 1993), the Peabody-Picture Vocabulary Test-III (PPVT-III/TVIP) (at 3 years and pre-K; Dunn & Dunn, 1997), the Woodcock-Johnson Applied Problems and Letter-Word Identification (at pre-K; Mather & Woodcock, 2001) and the Leiter-Revised Examiner Rating Scale to assess children’s sociability and emotional regulation (at pre-K; Roid & Miller, 1997).

### Parent–Child Interactions

The quality of father–child interactions as well as mother–child interactions were assessed using scales adapted from the NICHD Study of Early Child Care’s “Three Box” scales (NICHD Early Child Care Research Network, 1999). This scale assessed six parenting dimensions at 2 and 3 years and 4 parenting dimensions at pre-K on 7-point rating scales

(1 = very low to 7 = very high). We assessed three dimensions of positive parenting (i.e., sensitivity, positive regard, and cognitive stimulation) as indicators of fathers’ and mothers’ *Supportiveness*, which represents parenting that is characterized by emotional support and enthusiasm for the child’s autonomous work, responsiveness and active attempts to expand the child’s knowledge and abilities. We included one negative aspect of parenting: *Intrusiveness*, which indicates that the parent is over-controlling and over-involved (see Tamis-LeMonda et al., 2004 for more detailed description of scales and inter-rater reliability). All coders were unaware of children’s scores on child assessments and father interviews.

## Results

Findings from these studies are organized around the three research questions: (1) How do resident fathers engage with their young children? (2) How do human and financial resources and mothers’ engagements predict the quality of fathers’ engagements with their young children? (3) How do resources and father engagements affect their young children’s development, over and above mother engagement?

### Fathers’ Engagements With Their Young Children

Building on past research that fathers and mothers engage with their children in distinct but also similar ways, our work offers further evidence of the similarities between some parents. Fathers were as sensitive as mothers and both parents showed low levels of intrusiveness, countering common stereotypes of fathers as aloof. At all child ages studied, fathers and mothers received comparably high scores on their supportiveness (fathers range = 4.08 to 4.23, mothers range = 4.18 to 4.48) and equivalently low scores on their intrusiveness (fathers range = 1.19 to 1.94, mothers range = 1.34 to 1.63). As observed in the videotaped father–child interaction episodes, children experienced supportive and positive parenting from both their parents.

### Financial Resources and Mother–Child Interactions to Father Engagement

Although the samples in our studies represented all resident fathers who were generally higher functioning than nonparticipating fathers, for example the majority were employed and obtained at least a high school degree, there was variation in the sample that accounted for differences in father engagements.

In terms of human and financial resources, fathers were more supportive at all three ages and less intrusive at 2 years when they had at least a high school education ( $r_s = .15$  to  $.17$ ,  $ps < .05$  and  $r = -.21$ ,  $p < .05$ , respectively). Income was positively related to fathers' supportiveness at 2 years and pre-K, but not at 3 years ( $r = .14$  and  $.21$ ,  $ps < .05$ ), whereas income negatively related to fathers' intrusiveness at these same two ages ( $r = -.13$  to  $-.21$ ,  $p < .05$ ). At all three ages, mother supportiveness to her child related to father supportiveness ( $r_s = .25$  to  $.30$ ,  $ps < .05$ ). Mother intrusiveness with her child related to father intrusiveness at 2 and 3 years ( $r_s = .25$  and  $.32$ ,  $ps < .05$ ), but not at pre-K ( $r = .09$ ,  $p > .05$ ).

In summary, fathers' resources and mother supportiveness are significantly related to supportive father engagement at most ages. Also, the finding of covariation between father and mother engagement quality, underscores the need to covary mothers' engagement when considering the unique influence of fathering on children's outcomes.

#### Human and Financial Resources and Parent Engagement in Relation to Children's Development

Children's scores on the mental scale of the Bayley (93 and 94 at 2 and 3 years, respectively), language scores on the PPVT (87 and 91 at 3 years and pre-K) and word-recognition and applied problems on the Woodcock Johnson (88 on both scales) averaged .5 to 1.0 SD below the national norms. However, children were highly regulated and interactive during the administration of child assessments as indicated by their high scores on the orientation/engagement and emotional regulation factors on the Bayley at 2 and 3 years (3.74 and 3.75 at 2 years; 3.96 and 4.19, at 3 years) and on the cognitive-social and emotional regulation composite scales of the Leiter-R at pre-K (94 and 91, respectively).

To test the unique influence of father engagement on child outcomes at the three ages, we ran regressions for each child outcome. All regressions included fathers' education and income, mother engagement (supportiveness, intrusiveness), father engagement (supportiveness, intrusiveness), and various controls where relevant (e.g., marital status, mothers' education).

#### Predictors to Children's Cognition and Language

Together, the predictors explained between 19 and 32% of the variance in children's cognition and language. Fathers' education (*more* than high school) was significantly related to children's scores on the MDI and PPVT at 3 years and on WJ letter-word recognition, applied problems,

and PPVT at pre-K ( $\beta_s = .21$  to  $.27$ ,  $ps < .01$ ). Family income was marginally related to children's MDI scores at 3 years ( $\beta = .14$ ,  $p < .10$ ) and significantly related to all child outcomes at pre-K ( $\beta_s = .17$  to  $.23$ ,  $ps < .01$ ).

After accounting for financial and human resources (and mother engagement), the association between father engagement and child outcomes varied slightly over time depending on type of father engagement. In general, mothers' supportiveness related to children's cognitive outcomes at 2 and 3 years, and at pre-K ( $\beta_s = .14$  to  $.25$ ,  $ps < .06$  for 2/3years;  $\beta = .12$ ,  $p = .05$ ). Fathers' supportiveness related to children's outcomes at 2 and 3 years, but not at pre-K ( $\beta_s = .14$  to  $.25$ ,  $ps < .06$ ). Intrusiveness varied in its relation to child outcomes by child age. Neither mother nor father intrusiveness were related to child outcomes at 2 and 3 years. However, maternal intrusiveness inversely related to children's WJ applied problems ( $\beta = -.12$ ,  $p < .05$ ) and paternal intrusiveness was inversely related to their PPVT scores at pre-K ( $\beta = -.11$ ,  $p < .05$ ).

#### Predictors to Children's Social and Emotional Behaviors

Together, the predictors explained between 11 and 19% of the variance in children's social and emotional outcomes. As with cognitive outcomes, fathers' education (more than high school) consistently predicted children's emotional regulation at 2 and 3 years ( $\beta_s = .18$  to  $.28$ ,  $ps < .05$ ). Family income, on the other hand, mattered only for children's orientation-engagement at 3 years and emotional regulation at pre-K ( $\beta_s = .27$  and  $.15$ ,  $ps < .05$ ) and approached significance to their cognitive-social behaviors at pre-K ( $\beta = .14$ ,  $p = .06$ ).

In terms of parent engagement, surprisingly, maternal supportiveness was unrelated to children's outcomes at all ages ( $\beta_s = .01$  to  $.08$ ,  $p > .10$ ), however, father supportiveness, was positively associated with children's emotional regulation at 2 years ( $\beta = .21$ ,  $ps < .05$ ) and marginally related to their orientation-engagement at both 2 and 3 years ( $\beta_s = .13$  and  $.15$ ,  $p < .10$ , respectively). Expectedly, maternal intrusiveness was negatively related to children's emotional regulation at 2 years and pre-K as well as their cognitive-social scores at pre-K. At 2 years, father intrusiveness was positively related to orientation-engagement, but inversely related to emotional regulation ( $\beta_s = -.20$ ,  $ps < .05$ ). Father intrusiveness was unrelated to children's social and emotional outcomes at 3 years and pre-K ( $\beta_s = -.06$  to  $.03$ ,  $ps > .10$ ).

## Discussion

To date, studies of how fathers matter to their children have produced inconsistent findings (Pleck, 1997). Some studies have reported that father engagement has no direct effect on children's outcomes (Cabrera, Shannon, West, & Brooks-Gunn, 2006). First, it is less likely to find an association between father *report* of engagement and child outcomes than when the quality of father engagement is observed (Ryan, Martin, & Brooks-Gunn, 2006). Second, it is possible that fathers have different effects on children's development across time (Cabrera et al., 2006). Findings from this study support both explanations. We also find that fathers' education and income are key predictors of positive father engagement.

It is noteworthy that the quality of fathers' and mothers' parenting is very similar to each other. In so far as the brief videotape of parent-child interaction provides a window to how children are parented, we find that both parents are more sensitive than intrusive. In line with prior research, we also find that the most consistent predictors of supportive fathering across children's ages are fathers' education and income (Amato & Rivera, 1999; Black, Dubowitz, & Starr, 1999; Huang, Mincy, & Garfinkel, 2005). It might be that fathers who have more than high school education are more motivated to parent and are more aware of the developmental needs of children than those with less education.

The next question we were interested in was whether parenting has an effect on children's outcomes. Although children in our study scored .5 to 1.0 SD below national norms of cognitive tests, they were highly regulated across ages. As with predictors to father engagement, in general, fathers who have more than high school education have children performing better in all developmental domains—cognition, language, and social and emotional development. Family income, however, matters more at later ages than earlier; presumably as children get older they need more stimulating materials and opportunities to promote learning. This is consistent with resource theories that posit that parents who have more resources are more likely to invest on their children by providing a stimulating environment that promotes growth and learning than fathers with fewer resources (Coleman, 1990).

Once we accounted for the effect of resources on children's development, we examined the unique contribution that parenting had on children's outcomes. For cognitive development, mothers' and fathers' supportiveness were positively related to children's language and cognitive outcomes across ages, although fathers' supportiveness did

not matter at pre-K. For social and emotional development, fathers' supportiveness mattered only at earlier ages, while mother supportiveness was not related at any age. It might be that supportive mothering alone might not be enough to teach children to regulate and pay attention. Perhaps supportive parenting coupled with other dimensions of parenting, not measured here, such as discipline, might be more effective, especially with older children. It is also possible parents in our study were not intrusive enough to have a negative effect on children. Our findings are consistent with past research that supportive parenting is important for children's cognitive development across time and it adds to the literature by showing that *supportive fathering* has similar effects on children's cognitive functioning and emotional development especially with younger children, whereas *supportive mothering* only affects cognitive development across ages.

Our results also shed light on the effects of one dimension of negative parenting. We found parent intrusiveness less consistently related to children's development across domains and ages. In contrast to our findings for supportive parenting, intrusive parenting has an expected negative effect on children's cognition and language, but only for older children. Perhaps over controlling parents tend to inhibit older children's autonomy to verbalize and ask questions hence diminishing opportunities for learning. However, parent intrusiveness related to children's emotional regulation differently depending on child's age and gender of parent. At 2 years, both parents' intrusiveness mattered. Parents who are over controlling and over-involved have young children who are less regulated (i.e., less attentive, less able to stay on task) than non-intrusive mothers and fathers. At 3 and pre-K, maternal intrusiveness was almost consistently related to less emotional regulation whereas paternal intrusiveness was not related at all. It is possible that children, especially older children, interpret paternal intrusiveness in a more positive way than they do maternal intrusiveness.

In summary, fathers who have at least a high school education were more supportive and less intrusive than parents with fewer resources. Over and above mother engagements, fathers' supportiveness matters for children's cognitive and language development across ages as well as children's social and emotional behaviors, but less consistently. In contrast, father intrusiveness is not related to older children's social and emotional behaviors; it matters only at 2 years. These findings have important implications for policy and programs. Programs that aim at increasing fathers' education and that promote and encourage

father's positive parenting will yield large benefits for children.

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