Routledge
Taylor & Francis Group

Early Head Start Relationships: Association with Program Outcomes

James Elicker

Human Development and Family Studies, Purdue University

Xiaoli Wen

Early Childhood Education, National College of Education, National Louis University

Kyong-Ah Kwon

Department of Early Childhood Education, Georgia State University

Jill B. Sprague

Human Development and Family Studies, Purdue University

Research Findings: Interpersonal relationships among staff caregivers, parents, and children have been recommended as essential aspects of early childhood intervention. This study explored the associations of these relationships with program outcomes for children and parents in 3 Early Head Start programs. A total of 71 children (8–35 months, $M = 20$), their parents, and 33 program caregivers participated. The results showed that caregiver–child relationships were moderately positive, secure, and interactive and improved in quality over 6 months, whereas caregiver–parent relationships were generally positive and temporally stable. Caregiver–child relationships were more positive for girls, younger children, and those in home-visiting programs. Caregiver–parent relation-ships were more positive when parents had higher education levels and when staff had more years of experience, had more positive work environments, or had attained a Child Development Associate credential or associate's level of education rather than a 4-year academic degree. Hierarchical linear modeling analysis suggested that the quality of the caregiver–parent relationship was a stronger predictor of both child and parent outcomes than was the quality of the caregiver–child relationship. There were also moderation effects: Stronger associations of caregiver–parent relationships with observed positive parenting were seen in parents with lower education levels and when program caregivers had higher levels of education. *Practice or Policy*: The results support the importance of caregiver–family relationships in early intervention programs and suggest that staff need to be prepared to build relationships with children and families in individualized ways. Limitations of this study and implications for program improvements and future research are discussed.

Early Head Start is a federally funded community-based program for low-income families with infants and toddlers and pregnant women, with goals to enhance child development and promote healthy family functioning (Early Head Start National Resource Center, 2008). A guiding

Correspondence regarding this article should be addressed to James Elicker, PhD, Department of Human Development & Family Studies, Purdue University, Fowler Memorial House, 1200 West State Street, West Lafayette, IN 47906-2055.

principle of Early Head Start is the importance of building positive relationships between program caregivers and participating families in order to support positive change. Early Head Start advocates that strong positive staff–family relationships that continue over time are key elements of a high-quality program. More generally, in the literature, building positive staff–client relationships has been recognized as an evidence-based best practice in early intervention programs targeting high-risk young children and their families (e.g., Klass, 2003; Raikes & Edwards, 2009; Turnbull, Turbiville, & Turnbull, 2000). These relationships include those among the child, the family, and program caregivers, recognizing the parent–child bond as the child's most significant relationship (Lally & Keith, 1997).

Although building positive relationships is emphasized in the Early Head Start Performance Standards (U.S. Department of Health and Human Services, 2002), in the National Association for the Education of Young Children's *Developmentally Appropriate Practice in Early Childhood Programs* (Copple & Bredekamp, 2009), and in the goals of many early intervention programs, few studies have actually examined the association between dyadic interpersonal program relationships and outcomes for children and parents. In this study we explored the quality of the interpersonal relationships among program caregivers, parents, and children in three midwestern Early Head Start programs, with the goal of better understanding program relationships and contributing data useful for improving services in Early Head Start and other relationship-based early intervention programs. First, this study was intended to contribute new data about how infants' and toddlers' development proceeds in the context of relationships in Early Head Start. Second, the study focused on describing program–family relationships: their nature and variation, how they change over time, how they vary with program caregivers' and families' characteristics, and whether they are associated with parent and child outcomes. These issues are critical for Early Head Start, given that interpersonal relationships are viewed as a key component of program quality. However, they have not been a primary focus of many studies, including the large-scale national Early Head Start Research and Evaluation Project (Love et al., 2002).

MOTHER–CHILD ATTACHMENT RELATIONSHIPS: A FOUNDATION FOR EARLY INTERVENTION

The early experience of a majority of young children today encompasses a network of interpersonal relationships, both within and outside the family. The child development and infant mental health literatures have converged on a relationship perspective to conceptualize early social-emotional development (e.g., Cicchetti, Toth, & Lynch, 1995; Elicker & Fortner-Wood, 1995; Lyons-Ruth & Zeanah, 1993). This relationship-focused perspective is based on modern attachment theory (Bowlby, 1973; Sroufe, 1983), which suggests that infants' everyday interactions with their primary caregivers result in strong emotional relational bonds. Depending on the sensitivity and consistency of caregiving over time, attachment bonds vary in the amount and quality of felt security conveyed to the infant. Another attachment postulate is that primary relationships are mentally represented by even very young children. These representations, or internal working models, subsequently guide children's behavior in interpersonal relationships, including relationships outside of the family, such as relationships with peers and teachers (Elicker, Englund, & Sroufe, 1992). In this way, primary caregiving relationships, including those with important nonparental caregivers, are expected to have an impact on children's developing personalities, social competence, and other capacities.

Researchers using an attachment-relationships perspective have focused attention primarily on the mother–infant relationship (e.g., Garcia Coll & Meyer, 1993; van IJzendoorn & Sagi, 1999). Many studies across several cultures have found consistent and strong associations between mother–infant attachment security and children's later social-emotional and cognitive functioning (e.g., Crittenden & Claussen, 2000; Shonkoff & Phillips, 2000). Therefore, promoting the parent–child attachment relationship has become a focus of many early intervention programs supporting children from high-risk backgrounds (Emde, Korfmacher, & Kubicek, 2000).

Guided by attachment theory and mother–child research, birth-to-3 practitioners have come to view their relationships with children as focal aspects of successful early interventions and child care programs, given the extensive amount of time that they have spent with the children (e.g., Ahnert, Pinquart, & Lamb, 2006; Howes, 1999; Lally et al., 2003).

NONPARENTAL CAREGIVER–CHILD RELATIONSHIPS: A GROWING RESEARCH INTEREST

A growing body of research supports a general hypothesis that infants' and toddlers' relationships with nonparental caregivers in early care and education settings affect socioemotional and cognitive development in ways similar to, though perhaps not as strongly as, relationships with parents. Recent research in infant and toddler child care has shown that teacher–child interactions and relationship quality are linked both concurrently and predicatively with children's social-emotional, language, and cognitive outcomes (e.g., Hausfather, Toharia, LaRoche, & Engelsmann, 1997; National Institute of Child Health and Human Development Early Child Care Research Network [NICHD ECCRN], 2000a, 2000b). Research underscores the key role of teacher sensitivity, responsiveness, and positive teacher–child relationships in supporting child development (e.g., Early et al., 2007; Howes et al., 2008; LoCasale-Crouch et al., 2007; Mashburn, 2008). However, many studies of teacher–child relationships have used only global assessments that have focused on teachers' relationships with the whole child care group, such as the Infant/Toddler Environment Rating Scale–Revised (Harms, Cryer, & Clifford, 2003) and the Caregiver Interaction Scale (CIS; Arnett, 1989) rather than the relational dynamics within specific caregiver–child pairs.

It cannot be determined from studies using classroom-level relationship assessments whether children's outcomes are specifically associated with the quality of *dyadic* teacher–child relationships. Among the more focused measures for assessing dyadic relationships are those for caregiver–child attachment security (e.g., using the Strange Situation, Ainsworth, Blehar, Waters, & Wall, 1978; or the Attachment Q-Set, Waters, 1995) and composite summaries of caregiver–child interactions (e.g., the Observational Record of the Caregiving Environment, NICHD ECCRN, 1996). There is evidence that caregiver–child relationships, when assessed using these dyadic measures, are associated with aspects of children's cognitive, language, and social-emotional functioning and growth. For example, Howes and colleagues found significant concurrent associations between attachment security with child care providers and preschoolers' social competence (Howes, 1997; Howes & Smith, 1995). However, the strongest evidence to date for the developmental influence of child care relationships comes from the NICHD Study of Early Care, which found that cumulative positive dyadic caregiving during the first 3 years was significantly associated with children's school readiness, expressive language, and receptive language at 3 years (NICHD ECCRN, 2000b). Based on best practice

recommendations, theoretical predictions, and the evidence summarized, we hypothesized that dyadic relationship quality between Early Head Start program caregivers and infants and toddlers would be concurrently associated with the children's social and cognitive development.

PROGRAM CAREGIVER–PARENT RELATIONSHIPS: A NEGLECTED ARENA

Compared with the research on caregiver–child relationships discussed previously, even less research attention has been focused to date on relationships that develop between parents and professionals (the adult relationships) in the context of early childhood programs. This is despite the fact that birth-to-3 practitioners often identify relationships with parents as central to the success of early intervention, as we discovered in preliminary case study interviews with Early Head Start program caregivers (Elicker, Magaña, & Sketchley, 2000).

Belsky's (1984) determinants of parenting model suggests that relationships and social support provided to mothers by spouses or other adults result in more positive, responsive parenting of the infant and ultimately in more positive child development outcomes. In the early intervention field, relationships between program caregivers and parents have gained increasing attention as a factor promoting healthy parent–child attachment (Hans & Korfmacher, 2002). These programs typically aim to influence a mother's daily interactions with her infant and/or her internal working model of attachment through not only providing modeling and information about parenting but also fostering a supportive, relationship between the mother and the program staff (Emde et al., 2000). These supportive adult relationships are believed to provide emotional security to the parent, which promotes more positive ways of thinking and feeling about self, others, and relationships (e.g., Egeland & Erickson, 2003; Heinicke, Fineman, Ponce, & Guthrie, 2001; Juffer, Bakermans-Kranenburg, & van IJzendoorn, 2007). Relationship-based interventions have been successful in promoting positive changes in parental sensitivity, parenting behaviors, and parent–child attachment relationships (Egeland, Weinfield, Bosquet, & Cheng, 2000).

Belsky's parenting model and the success of relationship-based, parent-focused interventions suggest a hypothesis that supportive Early Head Start staff–parent relationships will result in more positive parenting and thus better developmental outcomes for both parents and children. However, only a few studies to date have empirically tested the associations between staff–parent relationships and parent or child program outcomes. Data from the Nurse Home Visiting program in Memphis demonstrated that mothers' perceptions of empathy from program staff were significantly associated with empathic attitudes the mothers had toward their children (Korfmacher, Kitzman, & Olds, 1998). An evaluation of the University of California at Los Angeles Family Development Project, a 2-year intervention for first-time mothers, revealed that mothers' trust in and ability to work with the program staff had a significant association with the mothers' responsiveness to their children's needs (Heinicke et al., 2000). In the current study, we hypothesized that supportive program caregiver–parent relationships would be positively associated with both child social and cognitive development and positive parenting in Early Head Start programs.

In summary, effective infant-toddler interventions can be viewed not only in terms of how well they support children's development and positive parenting but also in terms of how well they build supportive staff–child and staff–parent relationships factors (Bernstein, 2002). Thus, the intervention program is conceived as system of interdependent interpersonal relationships, including children, parents, and program staff, producing an overall relational climate and

constituting a key intervention process (Bertacchi, 1996; Egeland et al., 2000; Emde et al., 2000; Heinicke et al., 2000).

FACTORS IMPACTING PROGRAM RELATIONSHIPS

Which child, family, and program caregiver characteristics are associated with relationships between program caregivers, parents, and children? Not many studies have specifically looked into this question, which would inform intentional practice targeting specific participant groups. There is some evidence that program staff characteristics are related to staff members' ability to connect with families. For example, caregivers with higher education or more early childhood training provide higher quality care to young children (e.g., Webster-Stratton, Reid, & Hammond, 2001; Whitebook, Sakai, & Howes, 2004). It is also hypothesized that ongoing training and relationship-based program support is crucial to service providers' ability to engage and retain families in early childhood intervention program and to build strong partnerships with families (Jorde-Bloom, 2004; Parlakian, 2001; Wasik & Bryant, 2001). One study explicitly compared the differences between nurse and paraprofessional home visitors (who did not have advanced education and training) in terms of their program implementation and participant outcomes in the Nurse Family Partnership program (Korfmacher, O'Brien, Hiatt, & Olds, 1999). The results showed that nurses and paraprofessionals did not differ in how participating families rated the quality of their helping relationship. However, families visited by paraprofessionals tended to have less contact with the program and to drop out sooner. In the current study, we hypothesized that program caregivers with higher education levels, more professional training, and more program-related support would develop higher quality relationships with Early Head Start children and parents.

Much evidence has shown that family risk (e.g., socioeconomic disadvantage, low education, minority group status, high stress, and single parenthood) is among the factors that keep parents from being involved (and building partnerships) and gaining benefits from intervention programs (e.g., Halpern, 2000; Robinson et al., 2002). Parents' psychological characteristics (e.g., depression) have also been related to families' engagement in early intervention services. For example, one study demonstrated that in a home visitation program, mothers with insecure attachment relationship histories were less likely to engage with home visitors (Korfmacher, Adam, Ogawa, & Egeland, 1997). Parents who had better interpersonal relationship skills more readily formed collaborative relationships with intervention program staff (e.g., Brookes, Ispa, Summers, Thornburg, & Lane, 2006). Other studies have shown similar patterns in how participants' psychological resources are associated with the way they use program services and interact with staff (e.g., Florian, Mikulincer, & Bucholtz, 1995; Spieker, Solchany, McKenna, DeKlyen, & Barnard, 2000). In the current study, we hypothesized that Early Head Start parents with higher education levels and lower depressive symptoms would develop higher quality relationships with both their own children and the Early Head Start program caregivers.

Finally, individual child characteristics might impact relationships with Early Head Start caregivers. It has been reported that boys tend to demonstrate more negative interactions and relationships with mothers and teachers and generally have less optimal early school outcomes than girls (Pianta & Walsh, 1996). There is also evidence that a child's age may affect caregiver–child relationship quality. For example, previous studies found that children who entered child care at

younger ages were more likely to have stable or secure relationships with caregivers than children who entered child care at preschool age (Elicker, Fortner-Wood, & Noppe, 1999; Howes & Hamilton, 1992). Similarly, the mother–child relationship is also affected by child age. One study showed that mothers tended to display a lower level of warm responsiveness and a higher level of restrictiveness as their infant approached toddlerhood (Smith, Landry, & Swank, 2000).

INTERACTIONS BETWEEN FAMILY AND PROGRAM FACTORS

These family and program factors not only may impact program relationships but could interact with program relationships in predicting program outcomes. One of the challenges in evaluating interventions with families at risk is the complexity of how family characteristics and program factors interact to produce program outcomes (Berlin, O'Neal, & Brooks-Gunn, 2003). In some previous intervention studies, family and program factors were considered as two separate contexts rather than as interacting to produce program effects (Wen, Korfmacher, Hans, & Henson, 2010). In fact, there is some evidence that family and program factors (e.g., program relationships) interact in rather complicated ways to predict program outcomes. For example, a prenatal and postpartum support program with African American teen mothers found that the more program contact mothers with limited vocabulary skills (a family factor) had with the home visitor (a program factor), the more likely they were to have positive birth experiences (Wen et al., 2010). However, very few studies have investigated the *interactions* between family characteristics (e.g., maternal education) and program context variables (e.g., program–family relationships). A goal of the current study was to test for possible moderating effects of family and program caregiver characteristics on associations between Early Head Start relationships and child and parent program outcomes.

RESEARCH QUESTIONS

The present exploratory study followed Early Head Start families and program caregivers over a 6-month period to address the following research questions: (a) What is the nature of relationships among Early Head Start program caregivers, children, and families, and how do these relationships change over time? (b) What are the characteristics of the program, caregivers, and families that are associated with Early Head Start relationship quality? (c) Are qualities of these Early Head Start relationships associated with child and parent outcomes? (d) Do characteristics of program caregivers and families moderate the associations between Early Head Start relationships and child and parent program outcomes?

METHOD

Participants

A total of 71 parent–child dyads and 32 caregivers from three Early Head Start programs in midwestern communities participated. Of the sample children, 52% were in the Early Head Start home visitation program, which provided weekly home visits and targeted both parents and child, and the rest were in an Early Head Start full-time center-based child care program that

mainly worked with the child. The average age of the child participants was 20 months, ranging from 8 to 35 months. This age range is representative of the Early Head Start population. A total of 42% of the children were boys. The majority of the children (69%) were White, 14% were African American, and 10% were Hispanic. Children had been enrolled in Early Head Start for an average of 14 months ($SD = 7.46$) at the time of the study's initial assessments.

Of the participating parents (mostly mothers), 84% had finished high school or had some college education, 58% were married or living with a partner, 48% had a job at the time the study began (average of 29 work hours per week), and 37% were in school or job training. Parents' average age was 25 years, ranging from 17 to 40 years. All families were low income and lived below the federal poverty income level and were therefore eligible for Early Head Start services. Of the Early Head Start staff participants, 63% had a bachelor's degree or higher, and 72% had majored in early childhood education or child development or had taken relevant courses. The majority of the staff (79%) was White. On average, the caregivers had worked with the program for 2.4 years ($SD = 1.48$, range = 3 months to 6 years). The sample size of caregivers was evenly distributed across the three participating Early Head Start programs ($ns = 10, 10,$ and 13). On average, each caregiver worked with two children in the sample (34% worked with one child, 34% worked with two children, and 32% worked with more than two).

The participants were followed over a 6-month time period. For the follow-up assessments, 49 parent–child dyads (70% of the original sample; 45% were in the home visitation program) remained available. The reasons for attrition involved participants moving out of the program service area, dropping out the program, or having difficulty scheduling follow-up assessments before the child graduated from the program. Many Early Head Start families' living situations were in flux. Lack of voicemail, changing phone numbers, relocating residence out of the area, and irregular work schedules were among factors that prevented follow-up visits. The attrition rate found in this sample is typical among studies that involve a Head Start population (e.g., Love et al., 2002). An attrition analysis based on chi-square and t tests showed that in comparison with the original sample, the Time 2 sample had a lower proportion of parents without a high school diploma (10% vs. 16%) and a lower proportion of parents living with a partner or spouse (55% vs. 58%). Otherwise, the Time 1 and Time 2 samples were not statistically different in terms of other demographic characteristics.

Procedure

Participants were recruited by solicitation at parent meetings and by distribution of flyers within the three Early Head Start programs. The eligibility criteria were that the child had to be between 8 and 30 months old and have been enrolled in the program for at least 1 month. The study involved four assessments, two at the initial time and two at the 6-month follow-up. Of the initial assessments, one was conducted with the child and parent at home, and the other was conducted with the child and Early Head Start program caregiver in the classroom or the child's home (if the child was in the home visitation program). The initial home assessment that involved the parent and child took about 2 hr and was conducted during a time when the child was well rested and fed. The child was assessed using a standardized developmental measure, the Mullen Scales of Early Learning, and a semistructured parent–child play interaction session was videotaped for 15 min. In addition, the parent was asked to complete a survey regarding family demographic information, child development, depressive symptoms, and the parent's current relationship with the child's primary Early Head Start caregiver. For the second assessment, which involved the Early Head Start caregiver and the child, their

interactions were observed for 2 hr in the classroom (if the child was in a center-based program) or during a home visit (if the child was in the home-based program). In addition, the Early Head Start caregiver completed a survey describing his or her professional backgrounds, the child's development, and his or her relationship with the parent. The same measures and procedures were repeated in the parent–child and caregiver–child 6-month follow-up assessments.

Overall, this study adopted a short-term longitudinal design to examine the nature and impact of Early Head Start relationships. Although the participants had an average of 1 year of program exposure at the beginning of the study, it was unclear whether their relationships with program caregivers had stabilized or were still in the process of growing. There is a limited literature to guide research regarding relationship development, in terms of formation and maintenance. Our working hypothesis was that relationship building is a continuous process that may fluctuate over time, especially in the context of interventions with children and families experiencing high-level life stress and challenges. Considering documented evidence of Early Head Start participants' overall low level of program involvement (e.g., Love et al., 2002), we hypothesized that the relationships between program caregivers and families would improve over the course of the study for participants who remained in the program. In addition, a 6-month time period is a reasonable timeframe in which to measure changes in infants, toddlers, and parents that might be related to their program experiences.

Measures

Relationship Quality

The quality of relationships between Early Head Start caregivers and children was assessed using three observational measures in the classroom setting or during the home visit, and all of the measures were appropriate for children aged 0–3. The quality of the relationship between Early Head Start caregivers and parents was assessed using a parent and caregiver self-report scale.

Program caregiver–child relationships: attachment security.   The Safe and Secure Scale (Booth, Kelly, Spieker, & Zuckerman, 2003), a 15-item, 9-point scale derived from the Attachment Q-Set (Waters, 1995), was used to describe the focus child's secure base behavior toward the Early Head Start caregivers (example item: ''If child care provider reassures him by saying 'It won't hurt you,' child will approach or play with things that initially made him cautious or afraid'': 1 = very unlike this child, 5 = neither like nor unlike this child, 9 = most like this child). The 15 scale items focus on the child's ability to seek and receive positive attention, feel safe and protected, receive support for exploration, receive consolation when distressed, and seek and accept assistance. The scale has established reliability ($\alpha = .81$) and was positively correlated with proximal measures of child care quality (Booth et al., 2003). The interobserver reliability for the current study was established at 80% exact agreement.

Program caregiver–child relationships: level of involvement.   The child's interactive involvement with his or her caregiver was rated using a slightly modified version of the Adult–Child Involvement Rating Scale (Howes & Stewart, 1987). For each 20-s interval during eight equally spaced, 15-min observation sessions, the highest level of interactive involvement between the child and caregiver was scored. Scale points range from 0 to 6 (0 = absent, adult not present; 1 = ignores, ignores, the adult ignored the child; 2 = routine, if the caregiver touched the child for changing or other routine caregiving but made no verbal responses to child; 3 = minimal, if the caregiver touched the

child only for necessary discipline, to answer direct requests for help, or to give verbal directives with no reply encouraged; 4 = social, if the caregiver answered the child's verbal bids but did not elaborate or used some unnecessary positive physical contact; 5 = elaborative, if the caregiver engaged in some positive physical gestures, acknowledged the child's statements and responded but did not restate the child's statement, sat with the child during play; and 6 = intense, if the caregiver hugged or held the child, restated the child's statements, engaged the child in conversation, or played interactively with the child). Summary scores were calculated as the mean level over the 2-hr observation period. The scale has adequate test–retest reliability and is correlated with other relevant child care variables (Howes & Smith, 1995). For the current study, an 80% exact agreement was attained between the observers during two consecutive live observations.

Program caregiver–child relationships: positive caregiving. The CIS (Arnett, 1989) was adapted to assess the interaction quality between Early Head Start caregivers and children. The scale consisted of 26 items (e.g., ''speaks warmly to the child,'' ''listens attentively when the children speak to her'') rated on a 4-point Likert scale (1 = not at all, 2 = somewhat, 3 = quite a bit, and 4 = very much). The measure consists of four subscales: positive interactions (10 items; warm and developmentally appropriate behavior), punitiveness (8 items; hostility, harshness, and use of threat), detachment (4 items; low involvement and disinterest), and permissiveness (4 items). The permissiveness subscale was dropped because it measures caregiving style rather than the nature of caregivers' interactions with children. The scale has high internal consistency ($\alpha = .81$; Jaeger & Funk, 2001) and was found to predict child language development and attachment security (Whitebook, Howes, & Phillips, 1989). For the current study sample, the internal consistency reliability was slightly lower ($\alpha = .63$). The mean score of the 22 items in the three subscales of positive interactions, punitiveness (reversed), and detachment (reversed) was computed for analyses. Table 1 presents intercorrelations

TABLE 1
Correlations Among the Early Head Start Relationships

Variable	1	2	3	4	5
Time 1 ($N = 71$)					
Caregiver–child relationship					
1. Attachment security	—	.39**	.55**	.08	.03
2. Child–caregiver involvement		—	.53**	−.08	.02
3. Positive caregiving			—	.09	.02
Caregiver–parent relationship					
4. Parent-rated relationship				—	.28*
5. Caregiver-rated relationship					—
Time 2 ($N = 49$)					
Caregiver–child relationship					
1. Attachment security	—	.49**	.74**	.17	.25
2. Child–caregiver involvement		—	.49**	−.02	.08
3. Positive caregiving			—	.05	.14
Caregiver–parent relationship					
4. Parent-rated relationship				—	.15
5. Caregiver-rated relationship					—

$^*p < .05.$ $^{**}p < .01.$

among these measures and suggests that the three caregiver–child relationship measures were significantly correlated at both Time 1 and Time 2 ($rs = .39–.74$).

Program caregiver–parent relationships. The Parent–Caregiver Relationship Scale (Elicker, Noppe, Noppe, & Fortner-Wood, 1997) is a measure with parallel forms that both parents and Early Head Start program caregivers completed independently to assess their perceptions of relationship quality with each other. Items in the scale assess the factors level of trust/confidence (e.g., ''The caregiver is someone I can rely on''), collaboration (e.g., ''We talk about problems right away''), affiliation (e.g., ''I am interested in the caregiver's personal life''), and caring (e.g., ''This parent is a caring person''). The scale consists of 35 items scored on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). For the current sample, the internal consistency reliability was .97 for the parent report and .96 for the program caregiver report. Table 1 shows that correlations between parent and staff ratings were modest.

Child and Parent Outcomes

Early Head Start children's social competence and cognitive abilities were assessed using a naturalistic observation scale, parent and caregiver reports, and standardized assessments by trained examiners, and the outcome measures aimed to look at the whole child's development. In addition, Early Head Start parents' interactive parenting behaviors in a videorecorded home play session were coded.

Child outcome: object play. A child's level of play with objects, considered an indicator of cognitive development, was rated using the scale developed by Rubenstein and Howes (1979) during a 2-hr observation in the classroom or during a home visit. This 5-point scale rates the complexity of the child's object play from oral contact and passive holding to active manipulation and exploration of the object's unique properties for creative uses (1 = oral contact, 2 = passive, 3 = active, 4 = exploitative, and 5 = creative). For each 20-s interval during eight equally spaced, 15-min observation sessions, the highest level of play complexity was coded. The mean level of object play over the 2-hr observation period was calculated. The scale has adequate test–retest reliability and predicted other child development outcomes (Howes & Smith, 1995). An interobserver reliability criterion of 80% exact agreement during two consecutive live observations was met by all observers prior to data collection.

Child outcome: social competence. Both the parents and Early Head Start caregivers reported on the child's emerging social competence and behavioral problems using the Brief Infant–Toddler Social and Emotional Assessment (BITSEA; Briggs-Gowan & Carter, 2002). The BITSEA includes 60 items, and each item is scored on a 3-point scale (0 = not true/rarely, arely, 1 = somewhat true/sometimes, and 2 = very true/often). The scale is composed of two subscales—problem behaviors (49 items, such as hits, bites, or kicks the parent) and social competence behaviors (11 items, such as paying attention for a long time)—and has established reliability (range = .66–.89) and validity (Briggs-Gowan, Carter, Skuban, & Horwitz, 2001). In the current study, a composite score was created by combining social competence and reversed problem behavior item raw scores into a total score representing overall socioemotional competence (with a higher score representing greater competence). Internal consistency reliabilities for parent and caregiver reports were .80 and .69, respectively. Because parent and caregiver

reports were not highly correlated at either time point (rs = .48 and .19 at Time 1 and Time 2, respectively), scores were computed separately for parent and caregiver BITSEA social-emotional adjustment.

Child outcome: cognitive skills. The Mullen Scales of Early Learning, American Guidance Services edition (Mullen, 1995) is an individually administered developmental test that can be used with children from birth to 68 months. The participating children were administrated the test during both initial and follow-up assessments. The assessment consists of four cognitive scales (visual reception, receptive language, expressive language, and fine motor) plus one gross motor scale. Scores on the four cognitive scales are combined to yield an Early Learning Composite score, which, according to Mullen (1995) is an indicator of general intellectual competence, with a mean of 100 and a standard deviation of 15. The internal consistency reliabilities for the five subscales were reported to range from .75 to .83, and the interrater reliabilities ranged from .91 to .99 for age groups between 1 and 44 months. The concurrent validity of the measure has been supported by its correlations with other early development measures (e.g., the Bayley Mental Development Index, rs = .53–.59; the Preschool Language Assessment Auditory Comprehension, r = .85; Mullen, 1995).

Parent outcome: responsive parenting behaviors. Six responsive parenting behaviors were coded from the videotaped parent–child play interactions in the home setting using the Three Bag Coding Scales (NICHD ECCRN, 1999). sensitivity (how the parent observes and responds to the child's cues), intrusiveness (the degree to which the parent controls the child, rather than respecting his or her perspective), stimulation of cognitive development (the parent's effortful teaching to enhance perceptual, cognitive, and linguistic development), positive regard (parent's expression of love, respect, and admiration for the child), negative regard (parent's expression of discontent with, anger toward, disapproval of, and rejection of the child), and detachment (parent's lack of awareness of, attention to, and engagement with the child). Each behavior was rated on a 7-point scale (1 = a very low incidence of the behavior, 7 = a very high incidence of the behavior). The interrater reliability on each scale was established at 90% exact agreement or better. Because all six parenting behaviors were positively intercorrelated at both data collection points (bivariate rs ranging from .36 to .83), a composite score representing overall responsive parenting behaviors was computed for both Time 1 and Time 2 by summing the six individual behavior scores (negative parenting behavior scores were reversed). For the current sample, the internal consistency for the six parenting behaviors was .91.

Participant Characteristics

Participant demographic characteristics and program information were collected through the parent and caregiver surveys. In addition, parental depressive symptoms were assessed using the Center for Epidemiological Studies–Depression scale (Radloff, 1977), a 20-item, 4-point scale (example items: ''I thought my life had been a failure'', or ''I felt fearful'': 0 = rarely or none of the time, 3 = all of the time). Higher scores reflect greater depressive symptoms.

Early Head Start program caregivers also completed the Early Childhood Work Environment Survey (Jorde-Bloom, 1988), designed for early childhood care administrators, teachers, or support staff for assessing dimensions of organizational climate (e.g., peer cohesion, support for professional and personal growth, and the presence of facilitative leadership). The survey

consists of 75 items, with 10 items rated on 5-point Likert scales and the rest rated on dichotomous scales (yes vs. no). The scale has adequate reliability and validity and has been used in several studies assessing early childhood program work environments (e.g., Jorde-Bloom, 1999).

RESULTS

This study explored questions regarding the nature of Early Head Start relationships, how they change over time, their association with short-term child and parent program outcomes, how family and program characteristics are associated with relationships, and how these characteristics moderate the associations between Early Head Start relationships and program outcomes. The following sections are organized to present results answering these questions.

What is the Nature of Early Head Start Relationships, and How Do They Change over Time?

Table 2 summarizes the data on relationship quality among Early Head Start caregivers and participants at the two assessment points, disaggregated by program type (center-based vs. home-based programs). Attachment security between children and their program caregivers was observed at a moderate level of quality (between 5 and 6 on the 9-point scale) at both Time 1 and Time 2 and in both programs, with a relatively large degree of variance. Similarly, mean levels of children's interactive involvement with caregivers were low to moderate (between

TABLE 2
Early Head Start Relationships and Outcomes: Descriptive Statistics

| | Center-Based program | | | | Home-Based program | | | |
| | Time 1 (N = 34) | | Time 2 (N = 27) | | Time 1 (N = 37) | | Time 2 (N = 22) | |
Variable	M	SD	M	SD	M	SD	M	SD
Caregiver–child relationship								
Attachment security[a]	5.11	0.79	6.03	1.04	5.16	0.87	5.75	1.19
Child–caregiver involvement[b]	2.52	0.87	3.31	0.71	3.27	0.86	3.59	0.47
Positive caregiving[c]	3.10	0.27	3.49	0.30	3.28	0.24	3.44	0.36
Caregiver–parent relationship[d]								
Parent-rated relationship	4.22	0.45	4.17	0.72	4.01	0.76	4.00	0.66
Caregiver-rated relationship	4.11	0.57	3.95	0.55	3.94	0.62	3.82	0.65
Program outcomes								
Object play	2.40	0.51	2.70	0.50	2.55	0.50	2.71	0.59
Early learning (Mullen)	104.59	15.13	103.52	16.01	100.05	16.92	94.45	17.96
Parent-rated BITSEA	0.99	7.34	4.33	7.57	−1.15	11.23	−2.49	12.63
Caregiver-rated BITSEA	4.25	9.89	2.82	12.38	2.47	12.23	2.29	12.40
Parenting behavior	32.12	4.42	33.52	3.23	29.67	6.05	30.59	6.11

Note. BITSEA = Brief Infant–Toddler Social and Emotional Assessment.
[a]Attachment security was assessed on a 9-point scale.
[b]Child–caregiver involvement was assessed on 6-point scale.
[c]Positive caregiving was assessed on 4-point scale.
[d]Caregiver–parent relationship was assessed on a 5-point scale.

"routine" and "minimal" at Time 1 and between "minimal" and "social" at Time 2). The program caregivers displayed overall a high level of positive caregiving toward the group, as measured by the CIS scale at both assessment points. Overall, the results suggested moderately positive relationship quality between Early Head Start caregivers and children. As for adult relationship quality, both program caregivers and parents rated their relationships quite positively (means were greater than 4 on the 5-point scale for parents and approaching 4 for caregiver ratings), although program caregivers' perceptions were slightly less positive than parents'.

A multivariate general linear model test was performed to examine whether the Early Head Start relationships changed over the observed 6-month time period. The test (Roy's largest root) showed that there was an overall positive change in the Early Head Start relationships from the Time 1 to Time 2 assessments, $F(5, 43) = 5.99$, $p = .00$. The univariate statistics indicated that the three relationship measures that assessed Early Head Start caregivers and children had statistically significant positive changes over time ($ps < .01$); however, the adult relationship ratings from program caregivers and parents did not change significantly across this 6-month period ($p > .24$).

What Are the Characteristics of the Program, Caregivers, and Families that Are Associated with Early Head Start Relationship Quality?

The associations between participant characteristics and Early Head Start relationships were examined using the full sample at the Time 1 assessment, allowing for a more extensive analysis of these factors. The program and participant characteristics included in this analysis were child age, gender, and ethnicity; parent education and depression; program caregiver work experience, education, and perceptions of the work environment; and program service delivery model (center-based child care vs. home visitation). Pearson correlations were conducted with continuous family and program characteristic variables (i.e., child age, parent depression, program caregiver work experience, and perceptions of the work environment). Analysis of variance was conducted with the discrete variables (i.e., child gender, ethnicity, parent education, program caregiver education, and program service delivery model).

Analyses of variance showed that girls had more secure relationships than boys with their center-based caregivers and home visitors (Safe and Secure Scale; $Ms = 5.30$ and 4.90 for girls and boys, respectively), $F(1, 69) = 4.26$, $p < .05$. Children in the home-based program were observed as showing a higher level of interactive involvement with program caregivers than children in the center-based program ($Ms = 3.27$ and 2.52, respectively), $F(1, 69) = 13.48$, $p < .01$. And caregivers in the home-based program displayed a higher level of positive caregiving as measured by the CIS than those in the center-based program ($Ms = 3.28$ and 3.10, respectively), $F(1, 69) = 8.93$, $p < .01$. Child ethnicity and caregiver education level were not significantly associated with any of the three caregiver–child relationship measures.

As for the caregiver–parent relationships, program caregivers reported more positive relationships with parents who had *higher* levels of education ($Ms = 4.13$ and 3.62 for parents who had finished high school and parents who had not, respectively), $F(1, 69) = 7.53$, $p < .01$. However, parents reported better relationship quality with program caregivers who had *lower* education levels ($Ms = 4.31$ vs. 3.99 for caregivers who had an associate's degree and ones who had a bachelor's degree or higher, respectively), $F(1, 69) = 4.66$, $p < .05$. Adult relationship quality was not different for the two program service delivery models.

TABLE 3
Correlations Between Participant Characteristics and Early Head Start Relationships ($N = 71$)

Variable	Child age	Caregiver work experience	Caregiver-Rated work environment	Parent depression
Caregiver–child relationship				
Attachment security	−.32**	.11	−.12	−.22
Child–caregiver involvement	−.03	.30*	−.06	.10
Positive caregiving	−.25*	.03	−.07	−.001
Caregiver–parent relationship				
Parent-rated relationship	−.10	.27	.08	−.15
Caregiver-rated relationship	.06	.04	.44**	−.23

*$p < .05$. **$p < .01$.

Table 3 presents correlations among the continuous measures of participant characteristics and the Early Head Start relationships. Younger children tended to display higher attachment security and experienced more positive interactions with program caregivers (as measured by the CIS). Caregivers who had more years of work experience demonstrated higher levels of interactive involvement with children; those who had more positive perceptions about their Early Head Start program work environment reported more positive relationships with the parents. Parental depressive symptoms were not significantly related to any of the relationship measures.

Are Early Head Start Relationships Associated with Child and Parent Outcomes?

Table 2 presents descriptive statistics for the child and parent program outcome measures at the two assessment points, disaggregated by the program type (center-based vs. home-based program). The paired samples t tests showed that children's object play ($t = -2.41$, $p = .02$) and parenting behaviors ($t = -2.90$, $p = .006$) had significant gains over the 6-month period, whereas the other three child outcomes did not show significant changes.

The associations between Early Head Start relationships and program outcomes were analyzed through hierarchical linear modeling (HLM; Raudenbush & Bryk, 2002) because of the nested nature of the data. The sample children were nested within three different centers, two different program models (center-based vs. home-based programs), and 32 Early Head Start caregivers. However, multilevel modeling could not be performed at the level of the center or program type because these higher group-level samples were too small. They were, however, included as dummy-coded covariates. The study involved 32 program caregivers, and on average, each caregiver worked with two children in the sample (34% worked with one child, 34% worked with two children, and 32% worked with more than two). Therefore, it was appropriate to conduct multilevel analysis at the caregiver level. The methodology literature suggested that even though this Level 2 caregiver sample was relatively small, the analysis would allow for precise estimations (Maas & Hox, 2005; Snijders & Bosker, 1999). However, because of the overall small sample in this study and the degree of data attrition over time, the HLM analysis could be conducted only with the Time 1 full sample ($n = 71$), not with the Time 2 sample ($n = 49$). These analysis decisions were guided by general principles of sample size for HLM

analysis (Tabachnick & Fidell, 2006). Because of the sample size limitations of the study, it was necessary to reduce the number of variables included in the analysis. Given the fact that the Early Head Start caregiver–child relationship measures were significantly correlated (see Table 1), a composite score (computed by standardizing each measure and then summing the weighted units) was used to represent overall caregiver–child relationship quality. Similarly, a composite score for overall caregiver–parent relationship quality was computed by averaging the total scores of the parents' and Early Head Start caregivers' ratings. Although the parent and caregiver ratings were only modestly correlated, this composite score took into account the perspectives of both parties. The resulting caregiver–child and caregiver–parent relationship composite scores were not significantly correlated, $r(71) = .04$, $p > .05$.

Two-level HLM analyses were performed to predict each child and parent outcome. Analyses were conducted in two steps. The first step was to examine unconditional models that did not include any covariates, only the intercept. Next two-level contextual models were estimated that included the child and family covariates and relationship variables as Level 1 predictors and caregiver-level covariates as Level 2 predictors. The Level 1 covariates included the caregiver–child and caregiver–parent relationship variables, child age, child gender, parent education, parent depression, and program type (center-based child care vs. home visitation; dummy coded). These predictors were significantly correlated with one or more outcomes in the preliminary analysis. The Level 2 covariates included the program caregivers' work experience and education level. Preliminary analyses suggested weak correlations among all of the covariates. Only the caregiver–child relationship composite was inversely and modestly correlated with child age ($r = -.25$). Therefore, concern about collinearity was allayed.

The models were computed in HLM 6.06 and estimated using full maximum likelihood. Both Level 1 and Level 2 covariates were grand-mean-centered (given the small n per caregiver). The Level 2 intercept was modeled as randomly varying. The contextual model was as follows: The Level 1 model was:

$$Y_{ij} = \beta_{0j} + \beta_{1j}{}^{*}(PROGRAM_{ij}) + \beta_{2j}{}^{*}(P\_EDU_{ij})$$
$$+ \beta_{3j}{}^{*}(DEPRESSION_{ij}) + \beta_{4j}{}^{*}(CHILDSEX_{ij}) + \beta_{5j}{}^{*}(CHILDAGE_{ij})$$
$$+ \beta_{6j}{}^{*}(SC\_RELATION_{ij}) + \beta_{7j}{}^{*}(SP\_RELATION_{ij}) + r_{ij}$$

The Level 2 model was:

$$\beta_{0j} = \gamma_{00} + \gamma_{01}{}^{*}(CAREGIVER\_EXPERIENCE_{j}) + \gamma_{02}{}^{*}(CAREGIVER\_EDU_{j}) + u_{0j}$$
$$\beta_{1j} = \gamma_{10}$$
$$\beta_{2j} = \gamma_{20}$$
$$\beta_{3j} = \gamma_{30}$$
$$\beta_{4j} = \gamma_{40}$$
$$\beta_{5j} = \gamma_{50}$$
$$\beta_{6j} = \gamma_{60}$$
$$\beta_{7j} = \gamma_{70}$$

The two Level 2 covariates were included to predict the intercept from the Level 1 model.

The unconditional model indicated that the proportion of variance in child/parent outcomes between Early Head Start caregivers (intraclass correlation coefficient).ranged from about 1% to 27% (object play, 27%; early learning, 6%; parent-rated social competence, 2%; caregiver-rated social competence, 1%; and parenting behaviors, 18%). Therefore, a larger proportion of variance resided within children and parents.

Results of the contextual HLM model are presented in Table 4. For the statistically significant coefficients, effect sizes were calculated as $(B_X^* SD_X)/SD_Y$, where SD_Y represents the variance term for the intercept at the level at which X centers in the model. Effect sizes are, therefore, interpreted as expected change in standard deviation units in Y that is associated with a standard deviation change in X. The caregiver–child relationship quality composite was not related to any of the child or parent outcomes at the initial assessment after child, parent, and

TABLE 4
Association Between Early Head Start Relationships and Program Outcomes ($N = 71$)

Variable	Object play	Early learning	Parent-Rated BITSEA	Caregiver-Rated BITSEA	Parenting behaviors
Fixed effects, coefficient (SE)					
Intercept (γ_{00})	2.50***	102.12**	−0.06	3.07*	30.58**
	(0.06)	(1.97)	(1.03)	(1.29)	(0.76)
Caregiver work experience (γ_{01})	−0.02	−1.44	−1.28	0.12	−0.22
	(0.05)	(1.48)	(0.79)	(0.99)	(0.54)
Caregiver education: bachelor's or higher (γ_{02})[a]	−0.11	−0.42	−1.56	4.46	0.66
	(0.16)	(5.05)	(2.68)	(3.35)	(1.87)
Program type: home-based program (γ_{10})[b]	0.05	−0.63	−1.21	−1.07	−1.09
	(0.16)	(5.02)	(2.69)	(3.36)	(1.78)
Parent education: high school or higher (γ_{20})[c]	0.03	9.39	−0.28	5.34	2.08
	(0.15)	(5.31)	(3.04)	(3.80)	(1.39)
Parent depression (γ_{30})	0.003	0.02	−0.11	−0.02	0.11
	(0.01)	(0.23)	(0.13)	(0.16)	(0.07)
Child gender: female (γ_{40})[d]	−0.23*	3.36	3.24	5.08	2.36*
	(0.11)	(3.88)	(2.20)	(2.75)	(1.07)
Child age (γ_{50})	0.03**	−0.09	0.25	0.10	0.23**
	(0.01)	(0.27)	(0.15)	(0.19)	(0.08)
Caregiver–child relationship composite (γ_{60})	0.04	−0.40	0.37	−0.61	−0.55
	(0.03)	(0.88)	(0.49)	(0.61)	(0.29)
Caregiver–parent relationship composite (γ_{70})	−0.25*	11.97**	7.86**	5.27	4.73**
	(0.12)	(4.09)	(2.28)	(2.85)	(1.16)
Random effects (variance components)					
Level 1 variance (r)	0.17	220.29	73.81	115.45	13.88
Intercept (u_0), variance [χ^2, p]	0.04	16.95	0.09	0.14	10.12
	[39.12, .10]	[33.61, .25]	[21.16, >.50]	[21.21, <.05]	[65.53, <.001]

Note. BITSEA = Brief Infant–Toddler Social and Emotional Assessment.

[a]Reference category is high school, Child Development Associate credential, or associate's degree.

[b]Reference category is center-based program.

[c]Reference category is no high school diploma or general equivalency diploma.

[d]Reference category is male.

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

program characteristics were controlled. However, caregiver–parent relationship quality was significantly associated with three child outcomes—object play (effect size = −0.73, $p = .04$), early learning composite (effect size = 0.03, $p = .01$), and parent-rated social competence (BITSEA; effect size = 0.05, $p = .006$)—although the association with children's level of object play was in an unexpected direction. Caregiver–parent relationship quality was also significantly associated with observed positive parenting behaviors (effect size = 0.17, $p < .001$). Girls displayed lower levels of object play compared with boys (effect size = −0.67, $p = .04$), but girls received more positive parenting from their parents than did boys (effect size = 0.08, $p = .04$). Child age was positively associated with level of object play (effect size = 1.32, $p = .002$) and parenting behaviors (effect size = 0.12, $p = .007$).

Do Characteristics of Program Caregivers and Families Moderate the Links Between Early Head Start Relationships and Child and Parent Program Outcomes?

Given the limited sample size, only three family and caregiver characteristics of interest were included as potential moderators: child gender, parent education level, and Early Head Start caregiver education level. Full data collected at the initial assessment were again used for this analysis. HLM analyses were run by including one outcome as the dependent variable, a moderator variable (dummy coded), a relationship composite variable (grand mean centered), and an interaction term between the moderator and the relationship variable (also grand mean centered) as the independent variables. Child gender and parent education were included as Level 1 variables, and Early Head Start caregiver education was included as a Level 2 variable. If the interaction term is significant, it indicates that the family or program caregiver characteristic variable moderates the association between the relationship quality and the outcome variable. To further explore a significant moderation effect, the association between the relationship quality variable and the outcome measure was examined within two subsample groups formed based on the moderators (i.e., with and without high school diploma based on parent education; girls and boys based on child gender). This analytic strategy for examining and interpreting moderation effects is based on recommendations by Aiken and West (1991). Graphic plots of the moderation effects and the simple slope computation (predicting effects of the relationship variable) for each subgroup were constructed using Mod-Graph software (Jose, 2008).

Two significant moderation effects were found, and they are displayed in Figures 1 and 2, where the x-axis represents the caregiver–parent relationship quality composite and the y-axis represents the level of observed positive parenting behaviors (total score). As shown in Figure 1, the association between caregiver–parent relationship quality and observed responsive parenting behaviors was moderated by parent education. The interaction between parent education and the caregiver–parent relationship was found to be significant ($\beta = -5.56$, $p = .03$; effect size = −0.05). A stronger association between observed positive parenting behaviors and caregiver–parent relationship quality was seen in parents who did not finish high school. This association was weaker among parents who had a high school diploma or more education. Another significant interaction was found with Early Head Start caregivers' education level and the quality of the parent–caregiver relationships ($\beta = 7.68$, $p = .006$; effect size = 0.57). As indicated in Figure 2, Early Head Start caregivers' education level moderated the association between the quality of parent–caregiver relationships and observed positive parenting behavior, such that families who worked with program caregivers holding a bachelor's degree or higher
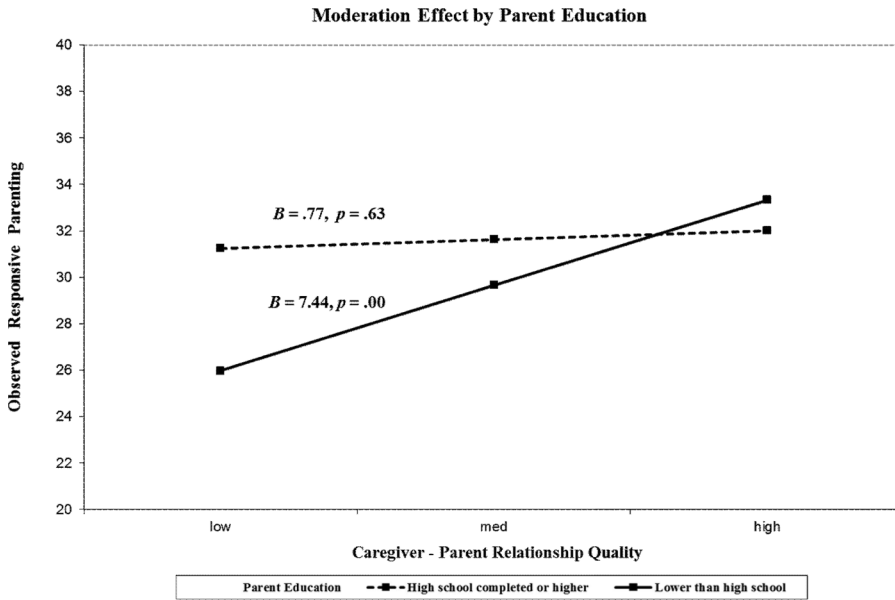
Moderation Effect by Parent Education

FIGURE 1 Moderation effect by parent education. Parent education moderates the association between Early Head Start caregiver–parent relationships and the observed responsive parenting behaviors.
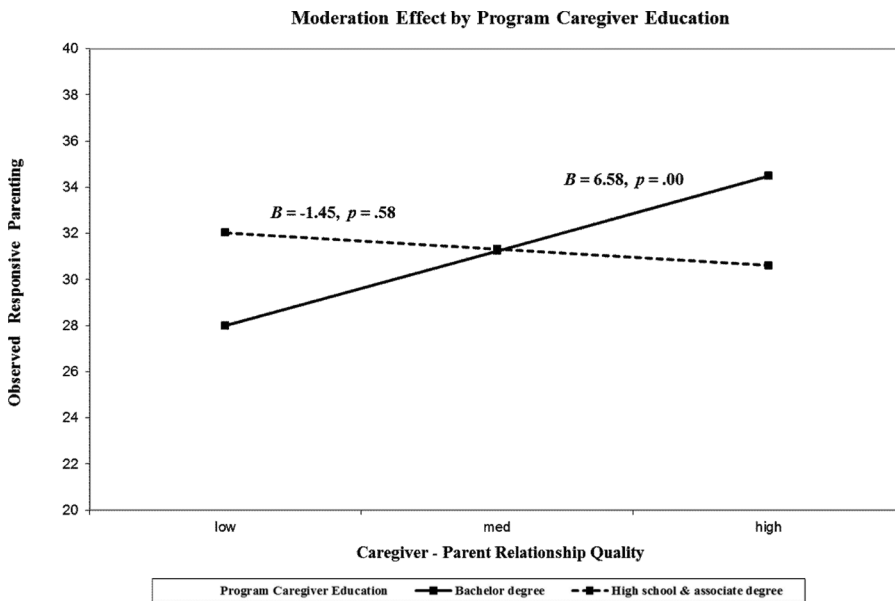
Moderation Effect by Program Caregiver Education

FIGURE 2 Moderation effect by program caregiver education. Early Head Start caregivers' education moderates the association between caregiver–parent relationships and the observed responsive parenting behaviors.

displayed more positive parenting when their relationships with the Early Head Start caregiver or home visitor were more positive. However, this association was not observed among families working with program caregivers with lower degrees. Child gender did not show any moderating effects on associations between the Early Head Start relationships and child or parent outcomes.

DISCUSSION

This study of the interpersonal relationships among parents, children, and program caregivers in three midwestern Early Head Start programs contributes new insights, in terms of both theory and application. Though the sample was relatively small, including 71 child–parent–caregiver triads, the study included intensive observations and assessments over a 6-month period. Using relatively new measures, we described the nature and variation of relationships children and parents had with Early Head Start program staff. We identified factors that were associated with more or less positive Early Head Start program relationships, and we found that positive and supportive relationships, especially those between parents and program caregivers, predicted positive outcomes for both parents and children.

For the Early Head Start children, we found that caregiver–child relationships varied but were generally positive in terms of attachment security, interactive involvement, and positive caregiving and that these relationships became increasingly positive over the 6-month period of our observations. This suggests that given time, Early Head Start caregivers will develop more positive and secure relationships with children. Such a continuity of care hypothesis is consistent with current recommendations and some previous research emphasizing more time and continuity as key factors for nonparental caregivers to develop supportive relationships with young children (e.g., Elicker et al., 1999; Howes & Hamilton, 1992; Lally, 2009).

Caregiver–parent relationships were uniformly positive in these Early Head Start programs based on both parties' reports. Parents' perceptions were somewhat more positive, with less variation, than ratings by program caregivers, a finding consistent with previous research (Elicker et al., 1997; Green, McAllister, & Tarte, 2004; Korfmacher, Green, Spellmann, & Thornburg, 2007; Roggman, Boyce, Cook, & Jump, 2001; Wen & Elicker, 2012). Although Early Head Start caregivers' evaluations tended to be positive, their relatively lower ratings could be due to the fact that they hold higher standards for what an optimal relationship with parents is like. Caregivers' relationship assessments are made in the context of work with many parents, therefore their evaluations may be more discerning and more variable across parents, whereas parents have limited experience in relationships with program caregivers. These are possibilities that should be explored in future research. Given the generally high ratings, it was not surprising to find that relationships did not increase in quality over time, probably reflecting a ceiling effect. Future research may want to use measures of caregiver–parent relationships that capture a broader range of variation in relationship perceptions.

What characteristics of children, parents, or program caregivers predicted positive relationships? We found that Early Head Start caregivers were more likely to have positive, secure relationships with girls and with younger children (infants) compared with boys and older children (toddlers). It may be that boys and toddlers present challenges for caregivers striving to develop positive relationships with them, as boys may be more active and less verbal, and toddlers are more likely than infants to attempt to gain independence and autonomy, sometimes reacting with

resistance (e.g., Smith et al., 2000). Girls have been observed in other research to have more secure attachment relationships with child care providers than boys (Ahnert et al., 2006). These findings are also consistent with available evidence about parent–toddler relationships (e.g., Schoppe-Sullivan et al., 2006) and suggest a need for increased attention in Early Head Start staff training to the process of building positive relationships with toddlers and with boys.

Children in the home-based program showed higher levels of interactive involvement with their Early Head Start caregivers, and home-based caregivers displayed more positive caregiving than the center-based caregivers. This is probably related to the fact that in home visiting, the program caregiver focuses on one individual child and the parent intensively, usually for 3 hr one time per week, and therefore is better able to spend quality time with the child and be attentive to the child's needs. In classroom settings, caregivers work with a small group all day every day, typically four to eight children, including the focal child that we were observing. Therefore, this difference in observed interactive involvement between the center-based and home-based samples (less frequent/more intense vs. more frequent/less intense) is probably due to the distinctive context for caregiver–child interaction that each of these program service delivery models presents.

Caregivers who rated their program work environment as more supportive, and those who had attained a Child Development Associate credential or associate's degree, tended to have more positive relationships with parents than those who reported more negative views of their work environment or those with higher levels of education. These findings support the importance of a positive and supportive work environment for caregivers in relationship-focused programs like Early Head Start (Bertacchi, 1996; Jorde-Bloom, 2004). The results also suggest that there may be special challenges for caregivers with more advanced levels of education to develop trust, open communication, and feelings of collaboration with intervention families. It could be beneficial in future research to examine more closely how and whether staff education level makes a difference in the interactions and relationships that develop between program caregivers and parents. Better educated, sometimes less experienced caregivers, when working with parents with lower incomes and education levels, may feel unprepared, threatened, or mistrustful in their interactions with those parents. However, caregivers with more similar backgrounds to the parents' backgrounds might be more comfortable balancing power and trust in their relationships with parents. In fact, similarity in background with families has been a rationale for hiring community members as paraprofessionals in some early intervention and family support programs (Behnke & Hans, 2002; Hans & Korfmacher, 2002). We do not think these results necessarily imply that advanced education needs to be an impediment for program caregivers in establishing positive relationships with families. In fact, the results also showed that relationship quality with parents was most strongly associated with positive parenting outcomes when program caregivers had higher education levels. An important task for future inquiry should be to determine how to provide preservice education, in-service training, and technical support for professional caregivers to enable them to utilize their knowledge to effectively understand and support parents and children in Early Head Start and similar programs serving families at risk.

Contrary to our hypothesis, the quality of caregiver–child relationships did not predict current or future levels of children's cognitive or social development. However, we did find that the quality of caregiver–parent relationships was associated with concurrent measures of children's object play, social competence, early learning, and positive parenting. There are a number of plausible explanations for these links. Supportive staff relationships with parents, with a focus on the child's development, may be a key part of an effective intervention for positive change

in both parents and children, a hypothesis that has been supported by results of randomized studies (e.g., Heinicke et al., 2000; Roggman, Boyce, & Cook, 2009). The findings of the current study contribute further evidence, though we cannot draw causal conclusions, given the correlational design of the study.

The obtained inverse association between the quality of program caregiver–parent relationships and children's complexity of object play was counter to our expectations. A possibility that bears further investigation is that children whose parents are more positively engaged with program caregivers (and perhaps other adults) are also socially oriented and less likely to engage in more complex play with objects at this age and in this observation context. Our finding that there were no significant associations between the quality of caregiver–child relationships and child outcomes was also unexpected and not consistent with previous research (e.g., NICHD ECCRN, 2000b). It is possible that this particular age (around 20 months) and this study's short, 6-month observation period, coupled with the relatively small sample, did not enable us to detect influences of program caregiver–child relationships that may be modest, compared with the parenting influences. Our results did show that caregiver–child relationships improved over time. However, our longitudinal analysis focused on the effects of initial relationship quality (using the Time 1 sample), primarily because of sample size limitations. More extended longitudinal studies with larger samples and repeated measures of both relationships and child outcomes would enhance understanding of the influences of program caregiver–child relationships. It may also be that normal developmental changes or other influences (especially family influences) at this age overshadow the influences of program relationships on children's development (e.g., Downer & Pianta, 2006; NICHD ECCRN & Duncan, 2003).

The discovery of family and caregiver characteristics that were moderating influences help us better understand potential associations between relationships and program outcomes. One moderation effect suggests that parents with lower education levels are more likely to exhibit positive parenting in a play session with their child when they have more positive relationships with their child's program caregivers, whereas the parenting of those with higher education levels was less strongly linked to the quality of this adult relationship. A plausible interpretation is that supportive relationships with program caregivers are especially important in supporting positive parenting in parents with lower education levels. Relationships with a caring and supportive professional may provide both emotional security for the parent and a model for how to support the child. Although this study design was not experimental, this finding is also consistent with previous research showing that families with higher risk levels benefit most from early intervention programs (Bradley, Burchinal, & Casey, 2001; Robinson & Emde, 2004).

However, although program caregivers with higher levels of education (bachelor's degree or higher) tended to have *less* positive relationships with Early Head Start parents, we found that when these more educated caregivers *did* establish positive relationships with parents, the quality of the relationships was significantly associated with observed positive parenting behaviors. This association between relationship quality and parenting outcome was significantly weaker for caregivers with lower education levels. One possible conclusion from this pattern of results is that building positive relationships with parents might be an important and necessary step for higher educated staff to help families achieve more favorable program outcomes. Overall, our findings suggest that program caregivers with varying levels of experience or education do productively engage families and do promote positive program outcomes for children and families, perhaps in distinctive ways. Also, individualized approaches to in-service training and other

program supports may be needed for program caregivers with different backgrounds, so that each one is able to engage families, develop positive relationships, and use those relationships to support positive changes in children and parents.

As with many intensive observational field studies of early childhood programs with high-risk clients, limitations stemmed from a smaller sample size and the attrition of research participants over time. The use of larger samples and additional strategies to retain study participants will be beneficial in future research examining program relationships with Early Head Start families. Finally, although multilevel modeling analyses were conducted to address the issue of nested data, future research should strive to examine interpersonal relationships within more homogeneous program contexts or in samples of sufficient size to tease out all of the patterns of nested groups.

This study breaks new ground with its focus on the assessment and description of Early Head Start caregiver relationships with both children and parents over time, using multiple measures and methods to assess relationships and program outcomes. The findings challenge researchers and practitioners to consider variations in program relationships and the fact that these relationships can be an important aspect of the intervention. The results reinforce the findings in previous research that it may be challenging to develop supportive relationships with parents who have lower levels of education. However, positive and supportive relationships with program caregivers may support more positive outcomes for those who are at risk for negative parenting or less optimal child development outcomes. Likewise, these results suggest that it may be more challenging for caregivers to develop relationships with boys and toddlers than with girls and infants, so these issues may also be important to consider as staff are guided to build secure, positive relationships with children.

The study of relationships in early intervention programs is a complex matter. The relational experiences that young children, parents, and professionals have when they come together in a program like Early Head Start are rich and variable. Relationship constructs such as attachment security have been tremendously helpful in understanding and supporting early development. However, researchers will certainly need more differentiated relationship constructs and ways of assessing them in the future study and improvement of relationship-focused early intervention programs like Early Head Start.

ACKNOWLEDGMENTS

REFERENCES

Ahnert, L., Pinquart, M., & Lamb, M. E. (2006). Security of children's relationships with nonparental care providers: A meta-analysis. *Child Development*, *74*, 664–679. doi:10.1111/j.1467-8624.2006.00896.x

Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.

Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. (1978). *Patterns of attachment: A psychological study of the strange situation*. Hillsdale, NJ: Erlbaum.

Arnett, J. (1989). Caregivers in day-care centers: Does training matter? *Journal of Applied Developmental Psychology*, *10*, 541–552. doi:10.1016/0193-3973(89)90026-9

Behnke, E. F., & Hans, S. L. (2002). Becoming a doula. *Zero to Three*, *23*, 9–13.

Belsky, J. (1984). The determinants of parenting: A process model. *Child Development*, *55*(1), 83–96.

Berlin, L. J., O'Neal, C. R., & Brooks-Gunn, J. (2003). Early childhood intervention research initiatives. In J. Brooks-Gunn, A. S. Fuligni, & L. J. Berlin (Eds.), *Early child development in the 21st century* (pp. 65–90). New York, NY: Teachers College Press.

Bernstein, V. (2002). Strengthening families through strengthening relationships: Supporting the parent-child relationship through home visiting. *Newsletter of the Infant Mental Health Promotion Project*, *35*, 1–5.

Bertacchi, J. (1996). Relationship-based organizations. *Zero to Three*, *17*, 1–7.

Booth, C. L., Kelly, J. F., Spieker, S. J., & Zuckerman, T. G. (2003). Toddlers' attachment security to child-care providers: The Safe and Secure Scale. *Early Education & Development*, *14*, 83–100. doi:10.1207/s15566935eed1401_6

Bowlby, J. (1973). *Separation: Anxiety and anger*. New York, NY: Basic Books.

Bradley, R. H., Burchinal, M. R., & Casey, P. H. (2001). Early intervention: The moderating role of the home environment. *Applied Development Science*, *5*, 2–8. doi:10.1207/S1532480XADS0501_1

Briggs-Gowan, M. J., & Carter, A. S. (2002). *Brief Infant–Toddler Social and Emotional Assessment (BITSEA) manual, version 2.0*. New Haven, CT: Yale University.

Briggs-Gowan, M. J., Carter, A. S., Skuban, E. M., & Horwitz, S. M. (2001). Prevalence of social-emotional and behavioral problems in a community sample of 1- and 2-year-old children. *Journal of the American Academy of Child and Adolescent Psychiatry*, *40*, 811–819. doi:10.1097/00004583-200107000-00016

Brookes, S., Ispa, J. M., Summers, J. A., Thornburg, K. R., & Lane, V. (2006). Building successful home visitor-mother relationships and reaching program goals: A qualitative look at contributing factors. *Early Childhood Research Quarterly*, *21*, 25–45. doi:10.1016/j.ecresq.2006.01.005

Cicchetti, D., Toth, S. L., & Lynch, M. (1995). Bowlby's dream comes full circle: The application of attachment theory to risk and psychopathology. *Advances in Clinical Child Psychology*, *17*, 1–75.

Copple, C., & Bredekamp, S. (2009). *Developmentally appropriate practice in early childhood programs*. Washington, DC: National Association for the Education of Young Children.

Crittenden, P. M., & Claussen, A. H. (2000). *The organization of attachment relationships: Maturation, culture, and context*. New York, NY: Cambridge University Press.

Downer, J. T., & Pianta, R. C. (2006). Academic and cognitive functioning in first grade: Associations with earlier home and child care predictors and with concurrent home and classroom experiences. *School Psychology Review*, *35*(1), 11–30.

Early, D. M., Maxwell, K. L., Burchinal, M., Bender, R. H., Ebanks, C., Henry, G. T., . . . Zill, N. (2007). Teachers' education, classroom quality, and young children's academic skills: Results from seven studies of preschool programs. *Child Development*, *78*, 558–580. doi:10.1111/j.1467-8624.2007.01014.x

Early Head Start National Resource Center. (2008). *What is Early Head Start?* Retrieved from http://www.ehsnrc.org/AboutUs/ehs.htm

Egeland, B., & Erickson, M. F. (2003). Lessons from STEEP: Linking theory, research, and practice for the well-being of infants and parents. In A. J. Sameroff, S. C. McDonough, & K. L. Rosenblum (Eds.), *Treating parent-infant relationship problems: Strategies for intervention*, (pp. 213–242). New York, NY: Guilford Press.

Egeland, B., Weinfield, N. S., Bosquet, M., & Cheng, V. K. (2000). Remembering, repeating, and working through: Lessons from attachment-based interventions. In J. D. Osofsky, & H. E. Fitzgerald (Eds.), *WAIMH handbook of infant mental health: Vol. 4. Infant mental health in groups at high risk* (pp. 35–89). New York, NY: Wiley.

Elicker, J., Englund, M., & Sroufe, A. L. (1992). Predicting peer competence and peer relationships in childhood from early parent-child relationships. In R. Parke, & G. Ladd (Eds.), *Family-peer relations: Modes of linkage*, (pp. 77–106). Hillsdale, NJ: Erlbaum.

Elicker, J., & Fortner-Wood, C. (1995). Research in review: Adult-child relationships in early childhood settings. *Young Children*, *51*(1), 69–78.

Elicker, J., Fortner-Wood, C., & Noppe, I. C. (1999). The context of infant attachment in family child care. *Journal of Applied Developmental Psychology*, *20*, 319–336.

Elicker, J., Magaňa, L., & Sketchley, K. (2000). *Relationship work in Early Head Start programs: How do staff describe it?*. Unpublished technical report, Purdue University, West Lafayette, IN.

Elicker, J., Noppe, I. C., Noppe, L. D., & Fortner-Wood, C. (1997). The Parent–Caregiver Relationship Scale: Rounding out the relationship system in infant child care. *Early Education & Development*, *8*, 83–100. doi:10.1207/s15566935eed0801_7

Emde, R. N., Korfmacher, J., & Kubicek, L. F. (2000). Toward a theory of early relationship-based intervention. In J. D. Osofsky, & H. E. Fitzgerald (Eds.), *WAIMH handbook of infant mental health: Vol. 2. Early intervention, evaluation, and assessment*, (pp. 3–32). New York, NY: Wiley.

Florian, V., Mikulincer, M., & Bucholtz, I. (1995). Effects of adult attachment style on the perception and search for social support. *Journal of Psychology*, *129*, 665–676.

Garcia Coll, C. T., & Meyer, E. C. (1993). The sociocultural context of infant development. In C. H. Zeanah (Ed.), *Handbook of infant mental health* (1st ed., pp. 56–72). New York, NY: Guilford Press.

Green, B. L., McAllister, C. A., & Tarte, J. (2004). The strengths-based practices inventory: A measure of strengths-based practices for social service programs. *Families in Society*, *85*, 326–335.

Halpern, R. (2000). Early childhood intervention for low-income children and families. In J. P. Shonkoff, & S. J. Meisels (Eds.), *Handbook of early childhood intervention* (2nd ed., pp. 361–386). New York, NY: Cambridge University Press.

Hans, S., & Korfmacher, J. (2002). The professional development of paraprofessionals. *Zero To Three*, *23*(2), 4–8.

Harms, T., Cryer, D., & Clifford, R. M. (2003). *Infant/Toddler Environment Rating Scale: Revised edition*. New York, NY: Teachers College Press.

Hausfather, A., Toharia, A., LaRoche, C., & Engelsmann, F. (1997). Effects of age of entry, day-care quality, and family characteristics on preschool behavior. *Journal of Child Psychology and Psychiatry*, *38*, 441–448. doi:10.1111/j.1469-7610.1997.tb01529.x

Heinicke, C. M., Fineman, N. R., Ponce, V. A., & Guthrie, D. (2001). Relation-based intervention with at-risk mothers: Outcome in the second year of life. *Infant Mental Health Journal*, *22*, 431–462. doi:10.1002/imhj.1010

Heinicke, C. M., Goorsky, M., Moscov, S., Dudley, K., Gordon, J., Schneider, C., & Guthrie, D. (2000). Relationship-based intervention with at-risk mothers: Factors affecting variations in outcome. *Infant Mental Health Journal*, *21*(3), 133–155. doi:10.1002/1097-0355(200007) 21:3<133::AID-IMHJ1>3.0.CO;2-P

Howes, C. (1997). Teacher sensitivity, children's attachment, and play with peers. *Early Education & Development*, *8*, 41–49. doi:10.1207/s15566935eed0801_4

Howes, C. (1999). Attachment relationships in the context of multiple caregivers. In J. Cassidy, & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications* (pp. 671–687). New York, NY: Guilford Press.

Howes, C., Burchinal, M., Pianta, R., Bryant, D., Early, D., Clifford, R., & Barbarin, O. (2008). Ready to learn? Children's pre-academic achievement in pre-kindergarten programs. *Early Childhood Research Quarterly*, *23*, 27–50. doi:10.1016/j.ecresq.2007.05.002

Howes, C., & Hamilton, C. E. (1992). Children's relationships with child care teachers: Stability and concordance with parental attachments. *Child Development*, *63*, 867–878. doi:10.1111/j.1467-8624.1992.tb01667.x

Howes, C., & Smith, E. (1995). Relations among child care quality, teacher behavior, children's play activities, emotional security, and cognitive activity in child care. *Early Childhood Research Quarterly*, *10*, 381–404. doi:10.1016/0885-2006(95)90013-6

Howes, C., & Stewart, P. (1987). Child's play with adults, toys, and peers: An examination of family and child-care influences. *Developmental Psychology*, *23*, 423–430.

Jaeger, E., & Funk, S. (2001). *The Philadelphia child care quality study: An examination of quality in selected early education and care settings*. Philadelphia: United Way of Southeastern Pennsylvania.

Jorde-Bloom, P. (1988). Factors influencing overall job satisfaction and organizational commitment in early childhood work environments. *Journal of Research in Childhood Education*, *3*(2), 107–122.

Jorde-Bloom, P. (1999). Using climate assessment to improve the quality of work life in early childhood programs. *Advances in Early Education and Day Care*, *10*, 115–146. doi:10.1016/S0270-4021(01)80006-9

Jorde-Bloom, P. (2004). Teacher job satisfaction: A framework for analysis. *Early Childhood Research Quarterly*, *1*(2), 167–183.

Jose, P. E. (2008). *ModGraph-I: A programme to compute cell means for the graphical display of moderational analyses: The Internet version, Version 2.0*. Retrieved from http://www.victoria.ac.nz/psyc/staff/paul-jose-files/modgraph/modgraph.php

Juffer, F., Bakermans-Kranenburg, M. J., & van IJzendoorn, M. H. (2007). *Promoting positive parenting: An attachment-based intervention*. New York, NY: Erlbaum.

Klass, C. S. (2003). *The home visitor's guidebook* (2nd ed.). Baltimore, MD.

Korfmacher, J., Adam, E., Ogawa, J., & Egeland, B. (1997). Adult attachment: Implications for the therapeutic process in a home visitation intervention. *Applied Developmental Science*, *1*, 43–52. doi:10.1207/s1532480xads0101_5

Korfmacher, J., Green, B., Spellmann, M., & Thornburg, K. R. (2007). The helping relationship and program participation in early childhood home visiting. *Infant Mental Health Journal*, *28*, 459–480. doi:10.1002/imhj.20148

Korfmacher, J., Kitzman, H., & Olds, D. (1998). Interaction processes as predictors of program outcomes in a preventive home visitation program. *Journal of Community Psychology*, *26*(1), 49–64. doi:10.1177/105381510702900205

Korfmacher, J., O'Brien, R., Hiatt, S., & Olds, D. (1999). Differences in program implementation between nurses and paraprofessionals in prenatal and infancy home visitation: A randomized trial. *American Journal of Public Health*, *89*, 1847–1851.

Lally, J. R. (2009). The science and psychology of infant-toddler care: How an understanding of early learning has transformed child care. *Zero to Three*, *30*(2), 47–53.

Lally, J. R., Griffin, A., Fenichel, E., Segal, M., Szanton, E., & Weissbourd, B. (2003). *Caring for infants in groups: Developmentally appropriate practice*. Washington, DC: Zero to Three.

Lally, R. J., & Keith, H. (1997). Early Head Start: The first two years. *Zero to Three*, *18*(2), 3–8.

LoCasale-Crouch, J., Konold, T., Pianta, R., Howes, C., Burchinal, M., Bryant, D., . . . Barbarin, O. (2007). Observed classroom quality profiles in state-funded pre-kindergarten programs and associations with teacher, program, and classroom characteristics. *Early Childhood Research Quarterly*, *22*(1), 3–17. doi:10.1016/j.ecresq.2006.05.001

Love, J. M., Kisker, E. F., Ross, C. M., Schochet, P. Z., Brooks-Gunn, J., Paulsell, D., . . . Smith, C. B. (2002). *Making a difference in the lives of infants and toddlers and their families: The impacts of Early Head Start*. Washington, DC: U.S. Department of Health and Human Services.

Lyons-Ruth, K., & Zeanah, C. H. (1993). The family context of infant mental health: Infant development in the primary caregiving relationship. In C. H. Zeanah (Ed.), *Handbook of infant mental health* (1st ed. pp. 14–37). New York, NY: Guilford Press.

Maas, C. J., & Hox, J. J. (2005). Sufficient sample sizes for multilevel modeling. *Methodology*, *1*(3), 86–92.

Mashburn, A. J. (2008). Quality of social and physical environments in preschools and children's development of academic, language, and literacy skills. *Applied Developmental Science*, *3*, 732–749. doi:10.1080/10888690802199392

Mullen, E. M. (1995). *Mullen scales of early learning*. Circle Pines, MN: American Guidance Services.

National Institute of Child Health and Human Development Early Child Care Research Network. (1996). Characteristics of infant child care: Factors contributing to positive caregiving. *Early Childhood Research Quarterly*, *11*, 269–306. doi:10.1016/S0885-2006(96)90009-5

National Institute of Child Health and Human Development Early Child Care Research Network. (2000a). Characteristics and quality of child care for toddlers and preschoolers. *Applied Developmental Science*, *4*(3), 116–135. doi:10.1207/S1532480XADS0403_2

National Institute of Child Health and Human Development Early Child Care Research Network. (2000b). The relation of child care to cognitive and language development. *Child Development*, *71*, 960–980.

National Institute of Child Health and Human Development Early Child Care Research Network, & Duncan, G. J. (2003). Modeling the impacts of child care quality on children's preschool cognitive development. *Child Development*, *74*, 1454–1475. doi:10.1111/1467-8624.00617

NICHD Early Child Care Research Network. (1999). Childcare and mother-child interaction in the first three years of life. *Developmental Psychology*, *35*, 1399–1413.

Parlakian, R. (2001). *Look, listen, and learn: Reflective supervision and relationship-based work*. Washington, DC: Zero to Three.

Pianta, R. C., & Walsh, D. (1996). *High-risk children in the schools: Constructing sustaining relationships*. New York, NY: Routledge.

Radloff, L. S. (1977). The CES-D scale: A self-reported depression scale for research in the general population. *Journal of Applied Psychological Measurement*, *1*, 385–410. doi:10.1177/014662167700100306

Raikes, H. H., & Edwards, C. P. (2009). *Extending the dance in infant and toddler caregiving: Enhancing attachment and relationships*. Baltimore, MD: Brookes.

Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models* (2nd ed.). Thousand Oaks, CA.

Robinson, J. L., & Emde, R. N. (2004). Mental health moderates of Early Head Start on parenting and child development: Maternal depression and relationship attitudes. *Parenting: Science and Practice*, *4*(1), 73–94. doi:10.1037/a0015709

Robinson, J. L., Korfmacher, J., Green, S., Song, N., Soden, R., & Emde, R. N. (2002). Predicting program use and acceptance by parents enrolled in Early Head Start. *NHSA Dialog*, 5(2), 311–324.

Roggman, L. A., Boyce, L. K., & Cook, G. A. (2009). Keeping kids on track: Impacts of a parenting-focused Early Head Start program on attachment security and cognitive development. *Early Education & Development*, 20, 920–941.

Roggman, L. A., Boyce, L. K., Cook, G. A., & Jump, V. K. (2001). Inside home visits: A collaborative look at process and quality. *Early Childhood Research Quarterly*, 16, 53–71. doi:10.1016/S0885-2006(01)00085-0

Rubenstein, J., & Howes, C. (1979). Caregiving and infant behavior in day care and homes. *Developmental Psychology*, 15, 1–24.

Schoppe-Sullivan, S. J., Diener, M. L., Mangelsdorf, S. C., Brown, G. L., McHale, J. L., & Frosch, C. A. (2006). Attachment and sensitivity in family context: The roles of parent and infant gender. *Infant & Child Development*, 15, 367–385. doi:10.1002/icd.449

Shonkoff, J. P., & Phillips, D. A. (Eds.). (2000). *From neurons to neighborhoods: The science of early childhood development*. Washington, DC: National Academies Press.

Smith, K. E., Landry, S. H., & Swank, P. R. (2000). The influence of early patterns of positive parenting on children's preschool outcomes. *Early Education & Development*, 11, 147–169.

Snijders, T. A., & Bosker, R. J. (1999). *Multilevel analysis: An introduction to basic and advanced multilevel modeling*. Thousand Oaks, CA: Sage.

Spieker, S. J., Solchany, J., McKenna, M., DeKlyen, M., & Barnard, K. B. (2000). The story of mothers who are difficult to engage. In J. D. Osofsky, & H. I. Fitzgerald (Eds.), *WAIMH handbook of infant mental health. Vol. 3: Parenting and child care* (pp. 172–209). New York, NY: Wiley.

Sroufe, A. L. (1983). Infant-caregiver attachment and patterns of adaptation and competence in preschool: The roots of maladaption and competence. In M. Perlmutter (Ed.), *Minnesota Symposium in Child Psychology: Vol. 16. Development and policy concerning children with special needs* (pp. 41–81). Hillsdale, NJ: Erlbaum.

Tabachnick, B. G., & Fidell, L. S. (2006). *Using multivariate statistics*. (5th ed.). Boston, MA.

Turnbull, A. P., Turbiville, V., & Turnbull, H. R. (2000). Evolution of family-professional partnership: Collective empowerment as the model for the early twenty-first century. In J. P. Shonkoff, & S. J. Meisels (Eds.), *Handbook of early childhood intervention* (2nd ed. pp. 630–650). New York, NY: Cambridge University Press.

U.S. Department of Health and Human Services. (2002). *Head Start program performance standards and other regulations (45 CFR Parts 1301, 1302, 1303, 1304, and guidance, 1305, 1306, 1308, and guidance)*. Washington, DC: U.S. Government Printing Office.

van IJzendoorn, M. H., & Sagi, A. (1999). Cross-cultural patterns of attachment: Universal and contextual dimensions. In J. Cassidy, & P. R. Shaver (Eds.), *Handbook of attachment: Theory, research, and clinical applications*, (pp. 713–734). New York, NY: Guilford Press.

Wasik, B. H., & Bryant, D. M. (2001). *Home visiting: Procedures for helping families* (2nd ed.). Thousand Oaks, CA.

Waters, E. (1995). The Attachment Q-Set (version 3.0). *Monographs of the Society for Research in Child Development*, 60(2–3, Serial No. 244), 234–246.

Webster-Stratton, C., Reid, M. J., & Hammond, M. (2001). Preventing conduct problems, promoting social competence: A parent and teacher training partnership in Head Start. *Journal of Clinical Child Psychology*, 30(3), 283–302.

Wen, X. (2005). *Parent involvement in Early Head Start: Dimensions and associations with parenting outcomes*. (Unpublished doctoral dissertation). Purdue University, West Layfayette.

Wen, X., Korfmacher, J., Hans, S. L., & Henson, L. (2010). Young mothers' involvement in a prenatal and postpartum support program. *Journal of Community Psychology*, 38(2), 172–190. doi:10.1002/jcop.20358

Whitebook, M., Howes, C., & Phillips, D. (1989). *Who cares? Child care teachers and the quality of care in America: Final report of the national child care staffing study*. Oakland, CA: Child Care Employee Project.

Whitebook, M., Sakai, L., & Howes, C. (2004). *By a thread: How child care centers hold on to teachers, how teachers build lasting careers*. Kalamazoo, MI: W. E. Upjohn Institute.