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REGULAR ARTICLE

Enhancing Parent-Child Interactions through Home Visiting: Promising Practice or Unfulfilled Promise?

CARLA A. PETERSON AND GAYLE J. LUZE

Iowa State University

ELAINE M. ESHBAUGH

University of Northern Iowa

HYUN-JOO JEON

University of California at Los Angeles

KELLY ROSS KANTZ

University of the Virgin Islands – St. Croix Campus

IN MEMORY OF SUSAN L. MCBRIDE

Many intervention programs use home visiting to target enhanced parent-child interactions; however, few studies have examined specific intervention strategies, limiting the potential utility of evaluation results to guide practice, research, or policy effectively. In this paper, we recommend that researchers and program evaluators open the “black box” of home visiting intervention strategies. We initiate this effort by exploring the overall intervention processes in two home visiting programs and describing specific strategies (e.g., coaching and modeling) interventionists used during triadic interactions with the parent and child together. One study included 28 families parenting a child with a disability and receiving Part C services, and the second study included 92 families receiving Early Head Start services. Interventions were not homogeneous across programs or families. Minimal time was focused on facilitating parent-child interactions; when these strategies were used, however, mothers were more likely to be engaged in the intervention activities.

Home visiting programs frequently focus on enhancing parent-child interactions and overall parenting practices to facilitate child development; unfortunately, relations between specific elements of home visiting interventions and outcomes have been studied rarely (McBride & Peterson, 1997). Specific intervention strategies used by early interventionists to promote the development of positive parent-child interactions are in-

frequently described by program evaluators, limiting the potential utility of evaluation results to guide practice, research, or policy effectively. The results of Sweet and Appelbaum's (2004) meta-analysis suggested that participation in home visiting programs generally resulted in positive outcomes for children and families (e.g., improved parent-child interactions); however, similar to earlier home visiting program evaluations (Gomby,

Culross, & Behrman, 1999), the specific intervention strategies that effected those changes could not be identified. In light of these findings, some researchers have called for interventionists and investigators to open the “black box” of home visiting (Berlin, 1998; Korfmacher et al., 2006) to understand quantities and qualities of services that make them effective. Systematic methods for documenting and evaluating the content addressed and intervention strategies used in home visiting programs are essential to help researchers and practitioners identify the differential effectiveness of various strategies to address a variety of goals including enhanced parent-child interactions.

Intervening in Parent-Child Interactions

Parent-child interactions help set the course for a child’s development (Barnard, 1997). Developmental researchers have shown that responsive, sensitive, warm parent-child interactions and appropriate levels of stimulation nurture positive global child outcomes (Bornstein & Tamis-LeMonda, 1989; Clarke-Stewart, 1979) and more specific outcomes in the areas of social competence (Denham, Mitchell-Copeland, Strandberg, Auerbach, & Blair, 1997; Havinghurst, Harley, & Prior, 2004), cooperation (Kuczynski, Marshall, & Schell, 1997), language (Hart & Risley, 1995), and cognition (Landry, Smith, Miller-Loncar, & Swank 1998; Landry, Smith, Swank, & Miller-Loncar, 2000). Recognizing the powerful influence that parent-child interactions have on child outcomes, intervention programs frequently target parenting skills directly. The assumption that enhanced parent-child relationships will lead to improved parenting and more positive child outcomes represents the hypothesis regarding pathways through which intervention effects change, or the theory of change (Weiss, 1995). As a result, intervention activities are focused on supporting parents’ efforts to stimulate their children’s development.

Frequently, interventions that target enhanced parent-child interactions are delivered via home visits. These interventions are directed to specific populations of families

whose children are at risk for poor developmental outcomes (e.g., due to premature birth, disabilities, mother’s young age, poverty) and often are a major component of comprehensive family support and child development programs. Enhancing family capacity to provide quality care and stimulation for young children is a stated goal for both the Early Head Start (EHS; Administration on Children and Families, 2004) and Part C programs (IDEA, 2004). Goals for each include increasing parental knowledge and enhancing family interactions.

Interventionists participating in a variety of home-based programs (e.g., Parents as Teachers, Part C, EHS) identify improving parent-child interactions as an important goal (Hebbeler & Gerlach-Downie, 2002; McBride & Peterson, 1997; Raikes et al., 2005). Interventionists within home-based programs have provided services and supports to improve parent-child interactions (Barnard, 1997; McCollum & Hemmeter, 1997). Other scholars, however, have noted missed opportunities to influence parent-child interactions directly (Hebbeler & Gerlach-Downie, 2002; McBride & Peterson, 1997) or reluctance to take on this task (Mahoney, Boyce, Fewell, Spiker, & Wheeden, 1998). Few researchers have examined the relations between specific intervention processes and changes in parent or child behaviors (Casady & Van Egeren, 2002; Llewellyn, McConnell, Honey, Mayes & Russo, 2003; Rush, Shelden, & Hanft, 2003; Woods, Kashinath, & Goldstein, 2004).

Intervention Processes

Home visitors are generally encouraged to engage parents actively in the intervention process using a variety of strategies including modeling, coaching, prompting, listening, and problem solving (Hanft, Rush, & Shelden, 2004; Klass, 2003; Wasik & Bryant, 2001). These intervention strategies could be combined under the umbrella term “coaching,” which has been defined as “a reciprocal process between a coach and a learner, comprised of a series of conversations focused on mutually agreed upon outcomes”

(Rush et al., 2003, p. 34). Coaching involves supporting and encouraging an individual during the process of learning and using new skills through giving specific feedback about performance (Kaiser & Hancock, 2003). This learner focused context provides a framework for self-observation, self-correction, reflection, and discussion that actively engages the learner by providing multiple opportunities to practice new skills with guided feedback (Rush et al., 2003). The concept of coaching has been borrowed from the field of athletics and has been used successfully to facilitate skill development across a variety of early intervention contexts (e.g., supporting classroom teachers as they learn new skills; Gallacher, 1997; Wolfe & Snyder, 1997).

Coaching has been advanced as a strategy for enhancing parent-child interactions, and appears to be an ideal way to address this goal during home visits because of the informal and intimate nature of these interactions (Rush et al., 2003). Coaching strategies have been used in relationship-focused interventions designed to enhance parent-child interactions (Mahoney & Perales, 2003), routines-based interventions designed to help parents optimize naturalistic teaching opportunities (Hughes & Summers, 2002; Woods et al., 2004), and milieu language interventions (Kaiser & Hancock, 2003; Yoder & Warren, 2002). Specific training has assisted interventionists in increasing the use of coaching during parent-child interactions, which in turn, has been associated with parents' increased use of positive behaviors during teaching interactions with their children (Hester, Kaiser, Alpert, & Whiteman, 1995; Kelly, Buehlman, & Caldwell, 2000).

Available evidence suggests little home visiting intervention time is spent using coaching strategies during triadic interactions involving the interventionist, parent, and child. Interventionists reported, via interviews, their beliefs that modeling positive parenting skills and encouraging parents to join in these interactions in order to become comfortable with incorporating these behaviors into daily routines are two important roles they played with families (Peterson,

McBride, Larson, Seifert, & Riggs, 1995). Interventionists reported using modeling or coaching strategies even when detailed observations of their home visits revealed very limited actual use of these strategies (McBride & Peterson, 1997). Efforts aimed specifically at helping interventionists use strategies to promote parent-child interactions during home visits (e.g., coaching, supporting parent-child interaction) have failed to result in targeted percentages of time spent this way (Roggman, Boyce, Cook, & Jump, 2001; Hughes & Summers, 2002). These results raise more questions about how interventionists use coaching strategies and their effect on parent-child interactions.

It is likely that coaching, modeling, and problem-solving strategies will not help families meet their goals unless interventionists actively engage parents in intervention activities. Parent's level of engagement in intervention activities has been found to relate to (a) parent use of the strategies between home visits (Wagner, Spiker, Linn, Gerlach-Downie, & Hernandez, 2003); (b) generally enhanced parenting; and (c) child engagement with the parent (Korfmacher, Kitzman, & Olds, 1998). One limitation of these studies is that they relied on interventionists' retrospective ratings of parent engagement rather than evaluation by objective observers.

The current exploratory examination was undertaken to identify specific intervention processes used in home visiting programs and expand knowledge of strategies used to target parent-child interactions. The questions guiding this research were: (a) What specific intervention processes were used in two home visiting programs? (b) To what degree did interventionists target triadic interactions with the parent and child? and (c) How were specific intervention strategies and maternal engagement related during home visits?

METHOD

Two different types of home visiting programs in central Iowa were chosen for this study, Part C early intervention and Early Head Start (EHS) programs. The participat-

ing Part C early intervention programs were designed to serve children with disabilities, between birth and 3 years of age and their families. The EHS programs were designed to provide services to facilitate positive child growth and development and family support to children and families living in poverty that include a pregnant woman or a child under age 3. The EHS component of the current study was 1 of 15 local studies conducted in conjunction with the EHS Research and Evaluation Project. Both Part C and EHS programs in this study used home visiting as their primary mode of service delivery. Research team members were not involved in the design or implementation of either program.

Participants

Part C program participants. Participants in the Part C program included families of children with disabilities and licensed early childhood special educators serving the families as home visitors and providing service coordination for the majority of them. Services were provided in accordance with the current Individuals with Disabilities Education Act (IDEA) regulations at the time. One goal of the Part C program was to enhance the family's capacity to provide appropriate nurturance and guidance for their child with a disability or developmental delay (IDEA, 2004). Programs participating in this study provided interventionists with support and training to implement comprehensive, family-centered services.

Fifteen home-based interventionists, 28 families, and 28 children with disabilities, participated in the study. Participating home-based interventionists were employed by six intermediate education agencies or local school districts in Iowa; all participated voluntarily. All home interventionists were female, Caucasian, and ranged in age from 25 to 54 years ($M = 40$). Interventionists had 2 to 18 years experience ($M = 8$) working with children with disabilities, birth to 3 years of age. Twelve interventionists had training beyond a bachelor's degree, which for the majority, focused on special educa-

tion. The interventionists conducted weekly home visits with most families.

Purposive sampling was employed to select family participants whose children represented maximum variation among those served, thus providing information-rich cases (Patton, 2002). Participating interventionists each invited 2 families with whom they worked, 1 family whose child had complex caretaking needs and 1 family whose child presented fewer caretaking challenges, to participate in the study. The biological mothers of participating children (each of whom was her child's primary caregiver) gave permission for their home visits to be observed and provided information about their families (see Table 1). The majority of parents were Caucasian and married, but other characteristics varied considerably. The children had a variety of identified special needs including general developmental delay, physical disability, and language delay.

Participating families had been receiving early intervention services for an average of 8 months when the study began. On average, 6 visits (range 4 to 7) with each family (approximately 1 per month across 9 months) were observed. Observational data were collected in the families' homes on a total of 160 visits.

EHS program participants. Participants in the EHS program included families receiving EHS services provided by Mid-Iowa Community Action (MICA). The MICA EHS program implemented a unique home-based model that assigned two developmental resource specialists to work with each family. Family development specialists (FDSs), who focused on broad family goals, visited families on a bi-weekly basis. The purpose of FDS services was to empower parents to support their relationships with their children and build their capacities to plan goals and access necessary resources to achieve their goals. Child development specialists (CDSs) completed weekly home visits to address child-related needs. The purpose of CDS services was to enhance each family's abilities to nurture their young children's development (Mid-Iowa Community Action,

Table 1
Demographics of Family and Child Participants

Parent and child characteristics	Part C families		EHS families	
	<i>n</i> = 28	%	<i>n</i> = 92	%
Primary caregiver gender				
Female	28	100	91	98.9
Primary caregiver relationship to child				
Biological mother	28	100	90	97.8
Biological father	0	0	1	1.1
Aunt	0	0	1	1.1
Primary caregiver age				
Less than 20 years	1	3.6	20	21.8
20 to 29 years	16	57.1	62	67.3
30 years or older	10	35.7	10	10.9
Not reported	1	3.6	0	0
Race and ethnicity of applicant				
White non-Hispanic	25	89.3	76	82.6
Black non-Hispanic	1	3.6	3	3.3
Hispanic	1	3.6	6	6.5
Other	0	0	7	7.6
Not reported	1	3.6	0	0
Primary caregiver education level				
Less than high school	2	7.1	29	31.4
High school diploma or GED	8	28.6	30	32.6
Some college (including associate's degree)	11	39.3	22	23.9
Bachelor's degree or higher	6	21.4	9	9.8
Not reported	1	3.6	2	2.2
Primary language				
English	28	100	7	83.7
Spanish	0	0	4	4.3
Other	0	0	1	1.2
Marital status				
Single/separated	6	21.4	46	50.0
Married/cohabitating	21	75.0	45	48.9
Not reported	1	3.6	1	1.1
Annual income				
Less than \$10,000	6	21.4	62	67.4
\$10,000 to \$30,000	8	28.6	27	29.3
Over \$30,000	12	42.9	1	1.1
Not reported	2	7.1	2	2.2
Gender of child				
Male	17	60.7	46	50.5
Age of focus child at enrollment				
Unborn	0	0	11	12.0
Less than 150 days	0	0	26	28.3
150 to 364 days	4	14.3	53	57.6
365 days or older	24	85.7	2	2.2

Note. EHS = Early Head Start; GED = graduate equivalency diploma.

1995). Specific goals included providing families with information about child development principles and parenting skills and facilitating parent-child interactions during developmentally appropriate play activities and daily routines.

Forty-six EHS interventionists participated in the study. Seventeen interventionists were CDSs, all of whom were females ranging in age from 21 to 59 years ($M = 28$). All CDSs had bachelor's degrees and had worked as home-based interventionists for an average of 2 years (range 0 to 7 years). A majority of CDSs were inexperienced; 13 had worked as home-based visitors for 1 year or less, and only two had worked for more than 5 years. Twenty-eight of the 29 FDS interventionists were females ranging in age from 19 to 53 years ($M = 31$). Twenty-four FDSs had bachelor's degrees (83%), one had an associate's degree (3%), and four had high school diplomas (14%). On average, the FDSs had worked as home-based interventionists for 2 years (range 0 to 19 years). The FDSs were inexperienced as well; 23 had held their positions for 1 year or less, and only two had more than 15 years of experience.

A majority of the 92 participating EHS families were Caucasian; and half included a mother who had never married or was separated (see Table 1). Mothers' ages ranged from 15 to 37 years ($M = 24$); 64% had at least a high school education. A majority of families had annual incomes below \$10,000. Observational data were collected on 1,131 home visits (555 CDS visits and 576 FDS visits) conducted across 4 years. With each family, the research team arranged as many observations as possible between enrollment and the end of services due to their child's transition out of the program at age 3, withdrawing from the program, or the study ending. On average, 12 visits (range 1 to 41 visits) were observed with each family.

Measures

The Home Visit Observation Form (HVOF; McBride & Peterson, 1993) was used to collect observational data from Part C participants and the Home Visit Observation

Form – Revised (HVOF-R; McBride & Peterson, 1996) was used to collect data from EHS participants. The HVOF was developed to document the interaction partners, content covered, and intervention strategies used during home visits. Categories and subcategories were developed based on available home visiting guidelines (Wasik, Bryant, & Lyons, 1990) and variables perceived by the current researchers to reflect indicators of quality early intervention services. The HVOF-R was refined through collaboration between research team members and MICA's EHS service providers. Revisions included the addition of codes to reflect specific topics and behaviors MICA staff members believed to be unique to their EHS program model. The same HVOF-R was used to code visits conducted by FDS and CDS interventionists.

Both the HVOF and the HVOF-R permit simultaneous recording of data in four major categories: (a) Individuals Present, (b) Primary Interaction Partners, (c) Content of Interaction, and (d) Nature of the Interventionist's Interaction. Each category is divided into mutually exclusive subcategories. Subcategory definitions in the HVOF and HVOF-R are generally parallel, with some HVOF-R definitions being more specific than those in the HVOF. Direct comparisons of the two instruments and operational definitions of subcategories for the last three categories are shown in Table 2. Both observational forms were used to organize the collection of data using a partial interval recording system. All categories were coded during each 30-sec observation interval on the HVOF. The Individuals Present category was coded only once at the beginning of each observation on the HVOF-R and the remaining categories were coded during each interval. If more than one subcategory of behavior occurred during a specific interval, the behavior that occurred for the longest period of time during that interval was coded.

Additionally, maternal engagement was rated with the HVOF-R every 10 min during home visits for EHS participants. A longer interval was used because engagement levels

Table 2
HVOF and HVOF-R – Operational Definitions of Observation Categories and Subcategories

Categories and subcategories		Operational definition
HVOF Part C	HVOF-R EHS	
Primary interaction partners		
Joint interventionist-child	Joint CDS or FDS-child	Interaction between interventionist, another adult, and focal child
Parent-interventionist	Parent-CDS/FDS	Interaction between parent and interventionist
Parent-child	Parent-child	Interaction between parent and focal child
Interventionist-child	CDS/FDS-child	Interaction between the interventionist and focal child
Parent-other	Parent-other	Parent interaction with person other than interventionist or focal child
Interventionist-other	CDS/FDS – other	Interventionist interaction with other adult or non-focal child (e.g., sibling or visitor)
Other joint interaction (with child)	Other joint interaction (with child)	Two or more adults involved in an interaction with the child
Joint adult-or non-focal child	Joint adult-or non-focal child	Two or more individuals (adults or non-focal child) involved in a joint interaction with focal child
Child-other	Child-other	Focal child interacts with Other adult (not parent or interventionist identified as leading the visit; e.g., a visiting grandparent interacts with the child; during a CDS visit, the FDS is there and interacts with the child)
Content of interaction		
Child-focused content		
Child's skill development and caretaking		Related to focal child's cognitive, social-emotional, language, motor and behavior development; focal child's physical health and special needs; or behavioral guidance needs
	Child's development	Related to cognitive, social-emotional, language, motor and behavioral development of the focal child, including provision of an environment to support development
	Child's health and safety	Related to physical health and illness of the focal child (e.g., immunizations, dental care, nutrition, car safety, special needs)
	Parenting issues	Discussions of issues such as behavioral guidance, sleeping, eating, child care needs, that do not fall within the above two categories

Table 2
Continued

Categories and subcategories		Operational definition
HVOF Part C	HVOF-R EHS	
Primary interaction partners		
Family-focused content		
Family issues		Related to family members other than focal child; including reference to marriage, employment, need for respite, relationships with relatives and friends
	Functioning of family members	Discussions of patterns of stress and coping, family interactions and relationships of family members other than the focal child
	Family member physical health	Discussions of illness, preventive health care, nutrition, substance use/abuse and safety of family members other than the focal child
	Basic needs of family	Discussions regarding food, housing, finances, transportation, child support, immigration or other issues regarding meeting basic needs
	Employment/ education of parents	Discussion of status of employment or education, or opportunities or resources for employment or education
Community services	Community resource and referral	Discussion about or referral to services available other than those being provided by the interventionist (e.g. WIC, transportation, mental health)
Administrative – other		
Administration/scheduling	Administration/scheduling	Reference to documentation of services, scheduling of visits or other meetings, policies and services available through the interventionist and their department or agency
	Other	Discussions of a topic not addressed by another category
Nature of interventionist's interaction		
Supporting child-oriented interactions		
Direct teaching with child	Direct teaching with child	Interventionist "plays" with focal child to elicit responses, initiate activities, and control materials in small group activities
Modeling for parent	Modeling for parent	Demonstration of interaction with focal child while parent is attending to interventionist and child

Table 2
Continued

Categories and subcategories		Operational definition
HVOF Part C	HVOF-R EHS	
		Primary interaction partners
Coaching/supporting parent	Coaching/supporting parent-child interactions	Interventionist interprets focal child's behavior for parent, provides suggestions regarding interaction with child, encourages or reinforces parent interaction with focal child while they are interacting
Facilitates child's play		Interventionist joins in focal child's play
Supporting adult interactions		
Provides or asks for information	Provides information	Relaying information verbally or in writing regarding the child, family or household, including demonstration or support of reflection for parents
	Asks for information	Interventionist poses questions or probes and listens to parent response, including reflections on what other has said
Listening	Listening	Other adult or child initiates exchange and most of the interval interventionist's attention is focused on what is said
	Provides positive affirmation	Interventionist acknowledges accomplishments, reinforces parent competence, "celebrates", hugs - parent and child are not interacting at the time
	Self-disclosure	Interventionist relays relevant personal experience or feelings to demonstrate empathy and/or relationship building
	Effort to engage other family members	Interventionist directly refocuses parent attention to child or tries to involve sibling or others to be involved in the interaction
Other activities		
Observe interaction (general)	Observe interaction	Interventionist is focused on the verbal and nonverbal interactions of others. This includes looking on with no vocalization or physical support, such as watching a child play with toys
Transition	General conversation Other Paper work Interacts with nonfocal child	Discussion that is not described elsewhere Getting organized, transition activities Interventionist completes forms or documentation related to services provided Interventionist interacts with nonfocal child (e.g., sibling or visitor)

Note. EHS = Early Head Start; CDS = child development specialist; FDS = family development specialist; HVOF = Home Visit Observation Form; HVOF-R = Home Visit Observation Form - Revised.

changed less frequently than behaviors captured by the other category codes. To allow simultaneous examination of engagement and interval category codes, maternal engagement ratings for the 10 min segments were matched to the codes for Interaction Partners, Content of Interaction, and Nature of the Interventionist's Interaction for each 30-sec interval. Engagement ratings ranged from 1 to 6, where 1 indicated that the mother *appeared uninterested in the material or activities, did not initiate topics with the child or CDS/FDS, displayed flat affect, appeared distracted, was physically distant, or was involved in another activity*. In contrast, a rating of 6 indicated that the mother *displayed much interest in or initiated activities and discussion related to issues meaningful for the child and family, elaborated discussion, asked questions or provided information, was in close proximity to the interventionist or child, and appeared to enjoy the interactions*. Ratings of engagement were not initiated until data collection was underway and thus, are available for a subset of the observations, including 346 (62%) of CDS visits and 318 (55%) of FDS visits.

Data Collection Procedures

Graduate research assistants, trained in the use of the current observational instruments, accompanied interventionists and acted as nonparticipant observers throughout the home visits. Observers sat in the same room as the home-visit participants, but made every effort not to intrude on interactions. Research assistants began observing approximately 5 min after arrival. They recorded using the HVOF or HVOF-R for 10 min, took a 2-min break, and repeated this cycle until the home visit concluded or until 60 min of data had been coded, whichever came first. Observations ranged from 21 to 44 ($M = 34$) min for Part C participants and from 11 to 60 ($M = 51$) min for EHS participants.

Interobserver Agreement

Across both groups of participants, interobserver agreement was monitored to ensure

consistency of observations and ratings across observers. Observers were trained to criterion in the use of each instrument before data collection began. Training sessions involved studying the code categories and subcategories, then jointly coding videotaped home visits until the observers were familiar with the operational definitions for all categories and subcategories and general coding procedures. Following these training sessions, observers watched and independently coded videotaped home visits until they reached the established criterion of 85% agreement overall with no category below 80% agreement with the code authors across at least two consecutive sessions.

Interobserver agreement was calculated for sessions in which two or three observers simultaneously watched videotaped home intervention sessions and independently coded the HVOF or HVOF-R, as appropriate. Home visit sessions with participating families were videotaped, using a camera set on a tripod or operated by an additional research assistant, and focused on the primary interactors. Data collected in vivo during home visits were used for all substantive analyses, and videotapes were observed to maintain high levels of interobserver agreement. This strategy allowed observers to conduct frequent interobserver reliability assessments during observation sessions similar to those used for data collection purposes, but avoided having more than one observer present for home visits.

Agreement was calculated by dividing the number of agreements by the number of agreements plus disagreements multiplied by 100 for each category. For Part C participants, interobserver agreement data were collected for 41 observation sessions over the 9-month period of the study (23% of visits). For EHS participants, interobserver data were collected for 182 sessions across 46-months of the study (16% of visits). Observers checked agreement with one another using videotapes at least monthly, with each coder checking her codes with one to three other data collectors to prevent observer drift. Table 3 shows the mean overall

Table 3
Interobserver Reliability Estimates Across Part C and EHS Participants

Content category	Mean rates of interobserver agreement (range)	
	Part C	EHS
Overall	85 (71–98)	88 (65–98)
Interaction partners	80 (63–98)	94 (68–100)
Content of interaction	96 (80–100)	88 (60–100)
Nature of interventionist's interaction	80 (40–99)	81 (48–97)
Maternal engagement		93 (0–100)

Note. EHS = Early Head Start.

interobserver reliability estimates and the subcategory reliability estimates.

RESULTS

Data Reduction

Home visit observation data were collapsed across Part C and EHS visits and families to present an overall summary of the percentages of time spent in various intervention arrangements. For EHS participants, data were divided into visits made by CDSs and those made by FDSs. To facilitate between sample comparisons, some subcategories within the Content of Interaction and Nature of Interventionist's Interaction categories were combined to provide parallel categories across the two measures. For example, the HVOF contains only the subcategory Child Skill Development and Caretaking to describe the child-focused content of home visits. This HVOF subcategory was compared to the combination of three HVOF-R subcategories: Child's Development, Child's Health and Safety, and Parenting Issues. Similarly, the HVOF subcategory Family Issues was compared to the HVOF-R subcategories Functioning of Family Members, Family Members' Physical Health, and Basic Needs combined. The HVOF subcategory Community Services was compared to the combined HVOF-R subcategories of Community Resource/Referral and Employment/Education. The HVOF subcategory of Provide or Ask for Information was compared to the combined HVOF-R subcategories Ask for Information and Provide

Information. Table 2 presents the parallel observation subcategories used across participant groups.

Subcategories within the Nature of the Interventionist's Interaction category were grouped to describe interactions that involved the child directly to facilitate examination of intervention efforts focused specifically on enhancing parent-child interactions. To facilitate this, the subcategories Direct Teaching, Modeling for the Parent, Coaching/Supporting Parent-Child Interactions, as well as Facilitating Child's Play which is included only on the HVOF, were combined to describe child-focused interactions. For these analyses, Observes Interaction was included in this child-focused interaction summary category when the interventionist engaged in this behavior during intervals immediately preceding intervals during which she was facilitating parent-child interaction, modeling for the parent, teaching the child directly, or facilitating the child's play. This decision reflects a broad definition of coaching that encompasses observing the learner's skills, modeling new skills, and providing feedback on performance during practice sessions.

Intervention Process and Content During Home Visits

Findings will be presented for the four main categories observed. All individuals present during home visits are reported as participants. For the remaining three categories, mean percentages of time for each subcategory were calculated to describe home visits

overall. Summaries of observational data for both studies are presented in Table 4.

Home visit participants. There was similarity in home visit participants across Part C and EHS participants. For Part C participants, mothers were present for 94% of the visits and children were present for 99% of visits. Other family members, service providers, and individuals not specifically identified participated at much lower rates. For EHS participants, mothers were present at almost all visits (98% of CDS visits and 99% of FDS visits) and children were present at the vast majority of visits (95% of CDS visits and 85% of FDS visits). Other participants attended much less frequently; fathers were present for 24% of visits, siblings of the target child were present for 38% of visits, other people (e.g., grandparents, friends, other service agency providers) were present for 13% of visits, and other MICA staff were present for 6% of visits. These percentages were very similar for CDS and FDS visits.

Interaction partners: Who was interacting with whom? Different interaction patterns were observed across Part C and EHS participants. For Part C participants, adults interacted with the child 69% of the time. These interactions included the interventionist and the child (26% of intervals), the interventionist and another adult (parent or another professional such as an occupational or speech and language therapist) interacting with the child jointly (40%), and the parent interacting with the child (3%).

The EHS interventionists, in contrast, spent the majority of their time (59% for CDSs and 86% for FDSs) interacting with adults (includes subcategories of Interventionist-Parent and Joint Adult or Non-focal Child) with very small amounts of time devoted to interacting with the child alone (5% for CDSs and 2% for FDSs). Most CDS-child interactions were in the context of triadic parent-child-interventionist interactions (27% of all interactions). Part C and EHS parents spent little time interacting with their child unless another adult was included in the interaction.

Content of interactions: What topics were addressed? The child's development and care were addressed almost exclusively (89%) for Part C participants. The content of interactions for EHS participants was more varied with the emphasis reflecting the interventionist's role. Child-related issues (e.g., child development, parenting issues) were addressed by CDSs 60% of the time. The FDS visits were a mirror image of CDS visits with 74% of the time focused on family-related issues (e.g., functioning of family members, basic needs) and community resources (e.g., employment/education).

Interventionists' roles: What strategies did home interventionists use? For Part C participants, interventionists spent 51% of their time teaching the child directly and less than a third of their time engaged in adult interactions. In contrast, EHS interventionists spent the majority of their time supporting adult interactions (54% for CDSs and 78% for FDSs). Overall, the CDSs spent approximately 24% of their time supporting child-oriented interactions with about half this time (13%) spent modeling for parents, but only 6% of their time coaching parent-child interactions.

Triadic Interactions: Interventionist, Parent, Child

This section focuses on home visits for Part C participants and EHS home visits conducted by CDSs; as noted, FDSs were charged with addressing a broad range of family issues and observations of their home visits confirmed that FDSs spent little time addressing child-related content, interacting with the child directly, or facilitating parent-child interaction. Part C and CDS interventionists spent the majority of their time addressing child-related content. Observations of interaction patterns and interventionists' roles during those interactions revealed that different strategies were used to address child-related content across the participant groups.

Part C interventionists spent 66% of their time interacting with the child directly. This time was divided between interventionist-child interactions (26%) and the interven-

Table 4

Percentage of Observation Intervals Spent in Specific Intervention Arrangements

	Part C						EHS					
	(n = 160)			(n = 555)			(n = 576)					
	M%	SD	Range	M%	SD	Range	M%	SD	Range	M%	SD	Range
Primary interaction partners												
Joint interventionist (CDS or FDS) and child	39.88	(29.44)	0-100	27.16	(16.37)	0-83	7.44	(8.62)	0-74	7.44	(8.62)	0-74
Parent-interventionist (CDS or FDS)	20.80	(21.27)	0-95	45.29	(23.53)	0-100	65.17	(29.69)	0-100	65.17	(29.69)	0-100
Parent-child	2.54	(4.15)	0-20	2.55	(3.40)	0-23	0.81	(1.78)	0-21	0.81	(1.78)	0-21
Interventionist (CDS or FDS)-child	26.40	(28.97)	0-100	5.37	(7.04)	0-68	1.62	(3.47)	0-32	1.62	(3.47)	0-32
Parent-other	1.19	(3.85)	0-33	1.17	(3.86)	0-68	1.15	(4.69)	0-89	1.15	(4.69)	0-89
Interventionist (CDS or FDS)-other	2.58	(6.87)	0-47	1.56	(3.30)	0-24	1.39	(3.39)	0-28	1.39	(3.39)	0-28
Other joint interaction (with child)	3.56	(9.12)	0-45	0.38	(2.23)	0-38	0.31	(1.66)	0-20	0.31	(1.66)	0-20
Joint adult or nonfocal child	1.34	(4.64)	0-46	14.17	(20.17)	0-98	20.67	(29.39)	0-100	20.67	(29.39)	0-100
Child-other	1.26	(4.86)	0-41	0.03	(0.32)	0-7	0.02	(0.16)	0-3	0.02	(0.16)	0-3
Content of interaction												
Child development/caretaking	89.10	(10.87)	32-100									
Child's development				47.11	(18.56)	0-95	12.43	(11.19)	0-81	12.43	(11.19)	0-81
Child's health and safety				6.73	(7.95)	0-49	2.79	(4.67)	0-42	2.79	(4.67)	0-42
Parenting issues				5.76	(6.69)	0-60	4.18	(5.79)	0-43	4.18	(5.79)	0-43
Family issues	3.49	(6.36)	0-40									
Functioning of family members				15.82	(13.51)	0-68	27.85	(16.40)	0-81	27.85	(16.40)	0-81
Family member physical health				2.17	(4.42)	0-48	4.19	(6.02)	0-38	4.19	(6.02)	0-38
Basic needs of family				2.60	(3.57)	0-20	14.84	(13.57)	0-90	14.84	(13.57)	0-90
Employment/education of parents				2.10	(3.43)	0-36	11.31	(11.95)	0-83	11.31	(11.95)	0-83
Community services/resource and referral	1.67	(4.87)	0-50	1.44	(2.69)	0-20	4.35	(5.98)	0-83	4.35	(5.98)	0-83
Administration/scheduling	1.48	(3.33)	0-20	7.64	(6.01)	0-46	8.79	(7.67)	0-52	8.79	(7.67)	0-52
Other	3.87	(5.24)	0-28	7.05	(7.51)	0-45	8.15	(8.24)	0-61	8.15	(8.24)	0-61
Nature of interventionist's interaction												
Supporting child-oriented interactions												
Direct teaching with child	50.79	(23.09)	0-100	5.42	(6.85)	0-68	1.73	(3.57)	0-33	1.73	(3.57)	0-33
Modeling for parent	0.49	(1.90)	0-15	13.22	(10.85)	0-59	3.01	(4.78)	0-59	3.01	(4.78)	0-59
Coaching/supporting parent-child interaction	0.36	(1.18)	0-9	5.71	(5.97)	0-38	1.37	(2.31)	0-21	1.37	(2.31)	0-21

Table 4
Continued

	Part C			EHS						
	<i>(n = 160)</i>			<i>(n = 555)</i>			<i>(n = 576)</i>			
	M%	SD	Range	M%	SD	Range	M%	SD	Range	
Facilitates child's play	2.93	(5.43)	0-29							
Supporting adult interactions										
Provides or asks for information	23.57	(17.11)	0-83							
Provides information				17.54	(10.20)	1-57	15.11	(10.31)	0-61	
Asks for information				18.75	(11.09)	0-62	39.03	(15.71)	3-85	
Listening	7.02	(10.11)	0-63	14.84	(11.10)	0-61	21.54	(15.02)	0-91	
Provide positive affirmation				1.73	(2.40)	0-19	1.74	(2.36)	0-16	
Self-disclosure				0.70	(1.59)	0-17	0.61	(1.46)	0-13	
Effort to engage family members				0.09	(0.56)	0-9	0.06	(3.55)	0-5	
Other activities										
Observe interaction (general)	7.17	(8.27)	0-48	5.99	(7.22)	0-52	2.82	(4.51)	0-35	
General conversation	1.71	(2.94)	0-15	5.63	(6.67)	0-44	6.91	(7.68)	0-61	
Transition of topic/activity or other	5.96	(6.05)	0-28	1.88	(2.75)	0-21	1.01	(2.33)	0-26	
Paperwork				4.34	(4.48)	0-34	2.15	(3.36)	0-41	
Interacts with nonfocal child				3.73	(6.80)	0-53	2.48	(5.67)	0-46	
No interaction				0.43	(1.53)	0-18	0.43	(1.58)	0-18	

Note. EHS = Early Head Start; CDS = child development specialist; FDS = family development specialist.

tionist and another adult (parent or another professional) interacting jointly with the child (40%). In contrast, CDS interventionists rarely interacted with the child alone (5%) and engaged in joint interventionist-parent-child interactions 27% of the time. These interactions focused on child-related content but, examination of the nature of the interventionists' roles sheds further light on the between-program differences regarding intervention strategies used.

The percentage of time devoted to supporting parent-child interaction via coaching or modeling was limited in both programs. For Part C visits, interventionists spent 51% of their time directly teaching the child. Even during joint interventionist-parent-child interactions when the interventionist and parent were in close proximity and both focused on the child, the interventionist was generally initiating activities and controlling materials, acting as the child's "teacher", rather than facilitating parent-child interaction or modeling by focusing some attention on the parent to provide her information or guidance during the interaction. Less than 1% of home visit time was devoted to coaching parent-child interactions and modeling for parents combined. For EHS visits, CDS interventionists were more likely to use modeling, coaching, and related observations than they were to directly teach the child; however, only 19% of home visit time was spent on modeling and coaching parent-child interactions combined. CDS interventionists spent more than half their time talking with the parent. Part C interventionists spent nearly one-third of their time talking with the parent.

Relations among Intervention Strategies and Maternal Engagement during Home Visits

Maternal engagement ratings for EHS participants support the potential importance of using coaching to address child-related content. Maternal engagement ratings were examined for 346 CDS home visits. Overall, ratings of maternal engagement were above the midpoint of the scale ($M = 4.76$, $SD =$

.72) across all observation categories. Mothers were highly engaged (ratings of 5 or 6) 61% of the time ($SD = .32$). Percentages of time during which mothers were highly engaged varied when different content categories were addressed or different intervention strategies were used (see table 5).

The first column of table 5 shows that mothers were highly engaged when interventionists were addressing child development content (26% of the total time) or functioning of family members (10%) and least often when interventionists were addressing community resources and referral (1%). These percentages reflect the overall percentages of time that CDSs spent addressing these topics. The second column of Table 5 presents the proportion of time mothers were highly engaged within each specific intervention category. For example, while CDSs spent only 5.71% of home-visit time coaching parent-child interactions, mothers were highly engaged 66.07% of that time.

Percent of maternal engagement during intervals when child development content was being addressed are presented to highlight the potential effectiveness of the strategies CDSs used to target parent-child interactions. Mothers were highly engaged most often when the interventionist was listening to her (11%) or asking for information (10%). In contrast, the conditional probability that mothers would be highly engaged given that a specific intervention strategy was being used presents a very different and clearer picture of how coaching strategies have the potential to affect intervention outcomes positively. The conditional probability of an event (e.g., being highly engaged) reflects its probability given that its occurrence is conditioned by the occurrence of a simultaneous event (e.g., the interventionist was addressing child development content via providing information or coaching). Conditional probabilities were calculated by dividing the number of intervals during which mothers were highly engaged while the interventionist used a specific intervention strategy to address child development content by the total number of

Table 5

Percentage of Observed Intervals During Which Mothers were Engaged Highly During EHS Visits by Child Developmental Specialists (n = 346)

Observation categories	Percent of total intervals during which mothers were engaged highly	Proportion of intervals during which mothers were engaged highly within a specific observed subcategory
Primary interaction partners		
No interaction	0.00	0.00
Parent-child	1.43	55.64
Parent-CDS	27.25	62.98
CDS-child	2.38	42.05
Parent-other	.35	35.71
Child-other	.01	25.00
Interventionist-other	.47	30.52
Joint interventionist and child	15.96	56.04
Joint other adult with child	.07	50.00
Joint adult or other child	7.98	53.88
Content topics		
Child development	26.20	55.27
Child health	3.25	68.57
Parenting issues	4.24	66.15
Functioning of family members	9.58	57.40
Family member physical health	1.38	69.35
Basic needs	1.67	63.74
Community resource and referral	1.07	64.85
Employment and education	1.32	65.02
Administration and scheduling	4.07	52.79
Other	3.68	58.97
Interventionist Roles		
Direct teaching	2.29	42.02
Modeling	6.47	47.75
Coaching parent-child interaction	3.35	66.07
Providing information	10.07	58.48
Asking for information	9.47	57.88
Listening	10.70	68.20
Providing positive affirmation	1.46	68.54
Self-disclosure	.57	76.00
Effort to engage family members	.02	33.00
General conversation	3.05	60.52
Paperwork	2.17	48.12
Interacting with the nonfocal child	1.74	42.44

Note. EHS = Early Head Start; CDS = child development specialist.

intervals the interventionist used that strategy to address child development content.

Mothers were more likely to be highly engaged when interventionists addressed child development content using strategies that involved them in direct interactions with their children rather than via conversation. Overall, mothers were highly engaged during 26% of the intervals focused on child development

content (base rate), but when interventionists addressed child development content by coaching a parent-child interaction, the likelihood that mothers would be highly engaged increased dramatically to 62% of the intervals. Similarly, increased probabilities of mothers being highly engaged were associated with the interventionist addressing child development content via modeling (47%), observing the

mother interact with her child (46%), or directly teaching the child (41%). In contrast, several intervention strategies were associated with a decreased likelihood of mothers being highly engaged while child development content was being addressed. These intervention strategies and the conditional probabilities of maternal engagement associated with them included: doing paperwork (which usually involved child assessment or goal setting; 22%), providing positive affirmation (19%), providing information (14%), efforts to engage others in the interaction (13%), listening (9%), asking for information (8%), and Self-disclosure (8%).

Relationships between maternal engagement ratings and mothers' characteristics were identified. Across content areas, older mothers were more likely to be highly engaged than younger mothers, $r(71) = .35, p < .01$, but this correlation was not statistically significant when mother's education level was controlled, $r(68) = .10, p = .40$. Mothers with more education were more likely to be highly engaged than less educated mothers, even when age was controlled, $r(68) = .36, p < .01$.

More specific examination of engagement levels during intervals when child development content was being addressed reveals noteworthy differences. Mothers with higher levels of education were more likely to be highly engaged, $r(68) = .52, p < .001$, when child development content was being addressed regardless of the strategies used by the CDS interventionist. Teen mothers were less likely than older mothers to be highly engaged when the CDS used modeling strategies or provided information, $t(70) = 2.01, p < .05$. In contrast, when the CDS interventionists were coaching parent-child interaction, listening, or directly teaching the child, teen mothers' engagement levels were similar to the levels of older mothers, $t(70) = .34, p = .74$.

DISCUSSION

The results of this study provide a glimpse into the intervention strategies used by home-

based interventionists. While some results of the present study are encouraging, perhaps the most important and provocative finding from this examination of home visiting practices is that in these community-based programs, very little intervention time was focused directly on enhancing parenting behaviors via coaching parent-child interactions or modeling. Families' actual intervention experiences often did not match stated program goals.

Goals for both Part C and EHS programs include enhancing families' capacities to support their children's optimal development. Interventionists participating in the present study affirmed that this goal guides their work and that supporting parent-child interactions is an important role they play (McBride & Peterson, 1997; Peterson, Luze, & Clawson, 2002). The EHS proposal from MICA stated that a key element of CDS home visits would be facilitating parent-child interactions during developmentally appropriate play activities and daily routines (Mid-Iowa Community Action, 1995). Thus, it was anticipated that large percentages of time would be spent in triadic interactions with interventionists actively engaging parents in intervention activities; clearly, this was not the case. Part C interventionists, all licensed as early childhood special educators, spent more than half their time teaching the child directly and rarely facilitated parent-child interactions. In contrast, CDS interventionists for EHS, whose disciplinary training varied, spent relatively more time (almost 20%) modeling for and coaching parents during interactions with their children. Still, CDSs used these strategies only about one-third of the time that child development content was addressed, despite the fact that these strategies were associated with increased rates of mothers' engagement. The higher engagement levels associated with intervention strategies that involve a mother interacting with her child directly might be particularly important for teen mothers and those with relatively little education. Indeed, maternal engagement during home visits was related to a number of important outcomes

including maternal supportiveness during play, a more stimulating home environment, and better child cognitive development (Peterson et al., 2006).

Limitations of the Study

Several limitations must be noted when considering study findings. The observation instruments developed for and first used in these studies are new. Observation categories were defined to reflect recommended practices (Sandall, Hemmeter, Smith, & McLean, 2004; Wasik et al., 1990) and capture important dimensions of home-visiting interventions (Korfmacher et al., 2006). The instruments have been adapted by other researchers (Campbell, Dugan, & Sawyer, 2005) and observations have identified relations between specific intervention strategies and important child and family outcomes (Peterson et al., 2006); however, observational data presented here represent only a first step in understanding home-visiting intervention processes. Further work is needed to identify the relative effectiveness of various dimensions of home-visiting interventions.

Data presented here were collected in central Iowa, primarily in rural areas, which might have influenced the interactions between interventionists and family members. It is impossible to know how accurately the intervention experiences of participating families reflect those of families enrolled in home-visiting programs in other parts of the country. Participating interventionists were well educated and experienced, making it possible that they used a wider range of intervention strategies than less educated or experienced interventionists.

Another important consideration is that all interventionists and the majority of families were Caucasian, which might have influenced interactions during home visits. Interventionists must understand the cultural perspectives of families with whom they work to intervene in ways that recognize the meanings of family interaction patterns and pursue shared goals. Culturally sensitive intervention strategies will become increasingly important as our society continues to

become more diverse (Lynch & Hanson, 2004) and measures used to describe intervention strategies must capture these individual differences sensitively.

Implications for Research and Practice

Interventions delivered during home visits typically are not homogeneous across programs or families; services and supports often are tailored to meet the preferences and needs of individual families. Differences in intervention experiences might be driven by a variety of program factors including staff training, characteristics of participating families and interventionists, and a program's theory of change (Weiss, 1995), whether or not that theory is stated explicitly. Exploring a program's theory of change can lead to clearer understanding of intended intervention processes but might be only a first step toward greater understanding of general program approaches, specific program activities, or eventual program outcomes. As evidenced by data from the present studies, what actually happens during service delivery does not necessarily match what program designers intended.

Detailed service documentation is essential to understand how staff members address goals and to identify the relations between intervention processes and outcomes. Scholars (McBride & Peterson, 1997; Sweet & Appelbaum, 2004) acknowledge this type of information is difficult to gather; however, these studies reinforce Sweet and Appelbaum's conclusion (2004) that judging the effectiveness of home-based programs without understanding the interventions delivered might be premature and short sighted. Home visits should be viewed as an intervention setting rather than as "the intervention." Delivering interventions via home visits is a complex process, and we should be mindful of the 2-decades old suggestion that instead of asking whether home visits are effective, the question should be, "What characteristics of home-based interventions are effective in facilitating which areas of competence for which members of the families in which social contexts?" (Gray & Wandersman,

1980, p. 995). Calls for research that will assist in explaining relations between intervention processes and specific outcomes persist (Guralnick, 1997).

Clearer understanding of the relative effectiveness of specific intervention strategies will advance understanding of how to enhance parent-child interactions. Interventionists generally embrace this goal, and coaching strategies have been advocated to facilitate parent-child interactions (Hanft et al., 2004). While the term coaching has been used more in recent years, enhancing families' abilities to nurture their children's development has been a stated goal for a variety of early intervention programs (e.g., Part C, EHS, Parents as Teachers) for more than a decade, and triadic intervention strategies have been used to enhance parent-child interactions for several years (Barnard, 1997; McCollum & Yates, 1994). The efficacy of coaching parents in their interactions with their children has been documented (Kaiser & Hancock, 2003; Woods et al., 2004; Yoder & Warren, 2002), and the high levels of maternal engagement associated with the use of coaching and modeling observed in the current study support the notion that these strategies could potentially have a powerful impact on intervention outcomes. The small amount of time devoted to these strategies, however, indicates that intervening with parent-child interactions directly is more difficult than it first appears which has important implications for both training and research.

Research efforts to understand interventionists' perspectives on this gap between stated goals and actual intervention strategies might be a first step in shaping staff training and supervision efforts. Knowledge about the importance of positive parent-child interactions might assist some interventionists to increase their attention to facilitating these interactions, but systematic examination of the effectiveness of various supports to assist interventionists learn how to support parents' interaction with their children effectively is needed. Staff support strategies such as (a) targeting increased triadic interaction during home visits; (b) using videotaped home visits in

reflective supervision sessions (Roggman et al., 2001); or (c) providing feedback on efforts to intervene with parents and children during daily routines (Hughes & Summers, 2002) have been associated with increased proportions of home visit time devoted to engaging parents and their children actively in play or daily routines. With this type of staff support, interventionists in an EHS program increased the percentage of time they spent interacting jointly with the parent and child but did not reach intended levels (Roggman et al., 2001). Additional staff training and support strategies need to be explored if current home visitors are to intervene to enhance parent-child interactions effectively, and strategies to support preservice interventionists in these efforts will likely be needed as well. Unfortunately, many preservice interventionists have little coursework or practical experience devoted to working with families in home-based settings (Winton, McCollum, & Catlett, 1997).

Practitioners and researchers need to take several steps together if interventionists are to support families' efforts to enhance their children's development. Program designers must articulate a theory of change and use this theory to develop intervention goals and identify strategies to address those goals. Careful attention to program implementation is necessary to identify the staff training interventionists need to understand program goals and use evidence-based strategies. Practice and policy can be guided effectively only by program evaluation that includes examination of the congruence among a program's theory of change, intervention strategies used, and families' actual experiences, along with examination of intended outcomes.

REFERENCES

- Administration on Children and Families. (2004). *Early Head Start programs and services*. Retrieved from: <http://www.pcsd.org/ecfs/ehs/default.html>.
- Barnard, K. E. (1997). Influencing parent-child interactions for children at risk. In M. Guralnick (Ed.), *The effectiveness of early intervention* (pp. 249-268). Baltimore: Brookes.

- Berlin, L. J. (1998). Opening the black box: What makes early child and family development programs work? *Zero to Three*, 18, 1-3.
- Bornstein, M. H., & Tamis-LeMonda, C. S. (1989). Maternal responsiveness and cognitive development in children. In M. H. Bornstein (Ed.), *Maternal responsiveness: Characteristics and consequences. New directions for child development* (pp. 49-61). San Francisco: Jossey-Bass.
- Campbell, P., Dugan, L., & Sawyer, B. (2005, October). *Looking for a new way to assess the quality of home visits*. Paper presented at the 21st Annual International Conference on Young Children with Special Needs and Their Families, Portland, OR.
- Casady, A., & Van Egeren, L. (2002, June). *A meta-analysis of home visitor programs: Moderators of improvements in maternal behavior*. Paper presented at the 6th Head Start National Research Conference, Washington, DC.
- Clarke-Stewart, K. A. (1979). Evaluating parental effects on child development. In L. Shulman (Ed.), *Review of research in education, Vol. 6*. (pp. 471-491). Itasca, IL: F. E. Peacock.
- Denham, S. A., Mitchell-Copeland, J., Strandberg, K., Auerbach, S., & Blair, K. (1997). Parental contributions to preschoolers' emotional competence: Direct and indirect effects. *Motivation and Emotion*, 21, 65-86.
- Gallacher, K. K. (1997). Supervision, mentoring, and coaching: Methods for supporting personnel development. In P. J. Winton, J. A. McCollum & C. Catlett (Eds.), *Reforming personnel preparation in early intervention: Issues, models, and practical strategies* (pp. 191-214). Baltimore: Brookes.
- Gomby, D. S., Culross, P. L., & Behrman, R. E. (1999). Home visiting: Recent program evaluations - analysis and recommendations. *The Future of Children*, 9, 4-26.
- Gray, S. W., & Wandersman, L. P. (1980). The methodology of home-based intervention studies: Problems and promising strategies. *Child Development*, 51, 993-1009.
- Guralnick, M. (1997). *The effectiveness of early intervention*. Baltimore: Brookes.
- Hanft, B. E., Rush, D. D., & Shelden, M. L. (2004). *Coaching families and colleagues in early childhood*. Baltimore: Brookes.
- Hart, B., & Risley, T. R. (1995). *Meaningful differences in the everyday experiences of young American children*. Baltimore: Brookes.
- Havinghurst, S. S., Harley, A., & Prior, M. (2004). Building preschool children's emotional competence: A parenting program. *Early Education and Development*, 15, 423-447.
- Hebbeler, K. M., & Gerlach-Downie, S. G. (2002). Inside the black box of home visiting: A qualitative analysis of why intended outcomes were not achieved. *Early Childhood Research Quarterly*, 17, 28-51.
- Hester, P. P., Kaiser, A. P., Alpert, C. L., & Whiteman, B. (1995). The generalized effects of training trainers to teach parents to implement milieu teaching. *Journal of Early Intervention*, 19, 50-51.
- Hughes, K., & Summers, J. A. (2002, June). *Examining fidelity of implementation in home visiting programs*. Paper presented at Head Start's 6th National Research Conference, Washington, DC.
- Individuals with Disabilities Education Improvement Act Amendments of 2004, Pub. L. No. 108-446, U.S.C. 20, 1400 et seq.
- Kaiser, A. P., & Hancock, T. B. (2003). Teaching parents new skills to support their young children's development. *Infants and Young Children*, 16, 9-21.
- Kelly, J. F., Buehlman, K., & Caldwell, K. (2000). Training personnel to promote quality parent-child interaction in families who are homeless. *Topics in Early Childhood Special Education*, 20, 174-185.
- Klass, C. S. (2003). *The home visitor's guidebook*. Baltimore: Brookes.
- Korfmacher, J., Green, B., Staerkel, E., Peterson, C. A., Gook, G., Roggman, L. A., Faldowski, R., & Schiffman, R. (2006). Parent involvement in early childhood home visiting. Unpublished manuscript.
- Korfmacher, J., Kitzman, H., & Olds, D. (1998). Intervention processes as predictors of outcomes in a preventative home-visitation program. *Journal of Community Psychology*, 26, 49-64.
- Kuczynski, L., Marshall, S., & Schell, K. (1997). Value socialization in a bi-directional context. In J. E. Gruscoe & L. Kuczynski (Eds.), *Parenting strategies and children's internalization of values: A handbook of theoretical and research perspectives* (pp. 23-50). New York: Wiley.
- Landry, S. H., Smith, K. E., Miller-Loncar, C. L., & Swank, P. R. (1998). The relation of change in maternal interactive styles to the developing social competence of full-term preterm children. *Child Development*, 69, 105-123.

- Landry, S. H., Smith, K. E., Swank, P. R., & Miller-Loncar, C. L. (2000). Early maternal and child influences on children's later independent cognitive and social functioning. *Child Development, 71*, 358–375.
- Llewellyn, G., McConnell, D., Honey, A., Mayes, R., & Russo, D. (2003). Promoting health and home safety for children of parents with intellectual disability: A randomized controlled trial. *Research in Developmental Disabilities, 24*, 405–431.
- Lynch, E. W., & Hanson, M. J. (2004). *Developing cross-cultural competence: A guide for working with children and their families*. Baltimore: Brookes.
- Mahoney, G., Boyce, G., Fewell, R. R., Spiker, D., & Wheeden, C. A. (1998). The relationship of parent-child interaction to the effectiveness of early intervention services for at-risk children and children with disabilities. *Topics in Early Childhood Special Education, 18*, 5–17.
- Mahoney, G., & Perales, F. (2003). Using relationship focused intervention to enhance the social-emotional functioning of young children with autism spectrum disorders. *Topics in Early Childhood Special Education, 23*, 77–89.
- McBride, S. L., & Peterson, C. A. (1993). *Home visit observation form*. Unpublished manuscript, Iowa State University.
- McBride, S. L., & Peterson, C. A. (1996). *Home visit observation form-revised*. Unpublished manuscript, Iowa State University.
- McBride, S. L., & Peterson, C. A. (1997). Home-based early intervention with families of children with disabilities: Who is doing what? *Topics in Early Childhood Special Education, 17*, 209–233.
- McCullum, J. A., & Hemmeter, M. L. (1997). Parent-child interaction intervention when children have disabilities. In M. J. Guralnick (Ed.), *The effectiveness of early intervention* (pp. 549–576). Baltimore: Brookes.
- McCullum, J. A., & Yates, T. (1994). Dyad as focus, triad as means: A family-centered approach to supporting parent-child interactions. *Infants and Young Children, 6*, 54–63.
- Mid-Iowa Community Action, Inc. (1995). Early Head Start program proposal. Unpublished manuscript.
- Patton, M. Q. (2002). *Qualitative research and evaluation methods*. (3rd ed.). Thousand Oaks, CA: Sage.
- Peterson, C. A., Luze, G. J., & Clawson, C. (2002). *Project HOME (Home observation to measure effectiveness): Final report*. Unpublished manuscript, Iowa State University.
- Peterson, C. A., McBride, S. L., Larson, K., Seifert, H., & Riggs, S. (1995, November). *Home visiting roles: Parent and interventionist perspectives*. Poster presented at the 11th Annual International Early Childhood Conference on Children with Special Needs, Orlando, FL.
- Peterson, C. A., Roggman, L. A., Starkel, F., Cook, G., Jeon, H. J., & Thornburg, K. (2006). *Understanding the dimensions of family involvement in home-based Early Head Start programs*. Unpublished manuscript, Iowa State University.
- Raikes, H. A., Peterson, C. A., Roggman, L., Constantine, J., Brooks-Gunn, J., Chazan-Cohen, R., Jones-Harden, B., & Schiffman, R. (2006). *Theories of change and outcomes in Early Head Start home-based programs*. Manuscript submitted for publication.
- 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.
- Rush, D. D., Shelden, M. L., & Hanft, B. E. (2003). Coaching families and colleagues: A process for collaboration in natural settings. *Infants and Young Children, 16*, 33–47.
- Sandall, S., Hemmeter, M. L., McLean, M., & Smith, B. J. (2004). *DEC recommended practices: A comprehensive guide for practical applications in early intervention/early childhood special education*. Longmont, CO: Sopris West.
- Sweet, M., & Appelbaum, M. (2004). Is home visiting an effective strategy: A meta-analytic review of home visiting programs for families with young children. *Child Development, 75*, 1435–1456.
- Wagner, M., Spiker, D., Linn, M. I., Gerlach-Downie, S., & Hernandez, F. (2003). Dimensions of parental engagement in home visiting programs: Exploratory study. *Topics in Early Childhood Special Education, 23*, 171–187.
- Wasik, B. H., & Bryant, D. M. (2001). *Home visiting: Procedures for helping families* (2nd ed.). Thousand Oaks, CA: Sage.
- Wasik, B. H., Bryant, D. M., & Lyons, C. M. (1990). *Home visiting: Procedures for helping families*. Thousand Oaks, CA: Sage.

- Weiss, C. H. (1995). Nothing as practical as good theory: Exploring theory-based evaluation for comprehensive community initiatives for children and families. In J. P. Connell (Ed.), *New approaches to evaluating community initiatives: Concepts, methods, contexts* (pp. 65–92). Queenstown, MD: Aspen Institute.
- Winton, P. J., McCollum, J. A., & Catlett, C. (1997). *Reforming personnel preparation in early intervention: Issues, models, and practical strategies*. Baltimore: Brookes.
- Wolfe, B. L., & Snyder, P. (1997). Follow-up strategies: Ensuring that instruction makes a difference. In P. J. Winton, J. A. McCollum & C. Catlett (Eds.), *Reforming personnel preparation in early intervention: Issues models, and practical strategies* (pp. 173–190). Baltimore: Brookes.
- Woods, J., Kashinath, S., & Goldstein, H. (2004). Effects of embedding caregiver-implemented teaching strategies in daily routines on children's communication outcomes. *Journal of Early Intervention, 26*, 175–193.
- Yoder, P. J., & Warren, S. F. (2002). Effects of prelinguistic milieu teaching and parent responsiveness education on dyads involving children with intellectual disabilities. *Journal of Speech, Language, and Hearing Research, 45*, 1158–1174.

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*Correspondence concerning this article should be addressed to **Carla A Peterson**, 1085 Elm Hall, Department of Human Development and Family Studies, Iowa State University, Ames, IA, 50011. E-mail: carlapet@iastate.edu*