EARLY HEAD START

RESEARCH

Making a Difference in the Lives of Infants and Toddlers and Their Families: The Impacts of Early Head Start

Volume III: Local Contributions to Understanding the Programs and Their Impacts

U.S. Department of Health and Human Services
Administration for Children and Families
Office of Planning, Research and Evaluation
Child Outcomes Research and Evaluation
Administration on Children, Youth and Families
Head Start Bureau

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Final Report: June 2002

Child Outcomes Research and Evaluation
Office of Planning, Research, and Evaluation
Administration for Children and Families
And the Head Start Bureau
Administration on Children, Youth and Families
Department of Health and Human Services

Early Head Start Evaluation Reports

Leading the Way: *Describes the characteristics and implementation levels of 17 Early Head Start programs in fall 1997, soon after they began serving families.*

Executive Summary (December 2000): *Summarizes Volumes I, II, and III.*

Volume I (December 1999): *Cross-Site Perspectives—Describes the characteristics of Early Head Start research programs in fall 1997, across 17 sites.*

Volume II (December 1999): *Program Profiles—Presents the stories of each of the Early Head Start research programs.*

Volume III (December 2000): *Program Implementation—Describes and analyzes the extent to which the programs fully implemented, as specified in the Revised Head Start Program Performance Standards, as of fall 1997.*

Pathways to Quality and Full Implementation (spring 2002): *Describes and analyzes the characteristics, levels of implementation, and levels of quality of the 17 Early Head Start programs in fall 1999, three years into serving families. Presents an analysis of the pathways programs followed to achieve full implementation and high quality.*

Building Their Futures: How Early Head Start Programs Are Enhancing the Lives of Infants and Toddlers in Low-Income Families: *Presents analysis of the impacts that the research programs have had on children's development, parenting, and family development through 2 years of age.*

Summary Report (January 2001): *Synopsis of the major findings.*

Technical Report (June 2001): *Detailed findings and report on methodology and analytic approaches.*

Special Policy Report on Child Care in Early Head Start (summer 2002): *Describes the nature, types, and quality of child care arrangements in which Early Head Start and control group children enrolled, and presents implications for public policy.*

Special Policy Report on Children's Health in Early Head Start (summer 2002): *Describes health services received by Early Head Start and control group families.*

Making a Difference in the Lives of Infants and Toddlers and Their Families: The Impacts of Early Head Start (June 2002): *Presents analysis of the impacts that the research programs have had on children's development, parenting, and family development through the children's third birthday (including two to three years of program participation).*

Reports Are Available at:

http://www.acf.dhhs.gov/programs/core/ongoing_research/ehs/ehs_intro.html

http://www.mathematica-mpr.com/3rdLevel/ehstoc.htm

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PREFACE

The Early Head Start Research Consortium comprises individuals from the 17 programs participating in the evaluation, 15 university research teams funded by ACYF to work with 16 of the research programs, ACYF's Head Start Bureau, ACF's Child Outcomes Research and Evaluation (CORE) team, and the national team of Mathematica Policy Research, Inc. and Columbia University's Center for Children and Families, Teachers College.

In addition to participating in many national evaluation activities (including collecting cross-site data and participating collaboratively throughout the study), each local research team also conducted site-specific local research. These research projects were designed to augment the national study. In general, they focused on in-depth research on understanding the local context and the role of mediators and moderators in child outcomes. Their research often encompassed measures that augmented those used in the national, cross-site data collection. The local Early Head Start program staff helped with all phases of the study, from random assignment and locating families for data collection to participation in discussions of analysis and reporting. Local research teams and their program partners have been analyzing data and presenting at state, national, and international conferences and meetings and publishing descriptive findings in peer review journals since early in the project.

This appendix presents brief write-ups of 21 studies from 9 of the local research teams and from staff in 2 of the programs. The Consortium established a peer-review process, which resulted in contributions reflecting a variety of perspectives. Each of these brief papers expands on the synopses included as boxes in Volume I of this report. They appear alphabetically, by first author.

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PARENT RESPONSIVENESS AND CHILDREN'S DEVELOPMENTAL OUTCOMES

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One of the primary goals of Early Head Start (EHS) is to support parents in fostering their children's development. EHS programs attempt to engage families in a variety of experiences to help them learn how to interact with their children in ways that will stimulate language and cognitive development and that will provide emotional support. Compared to children whose parents face fewer challenges, children from families with multiple risks – such as substance abuse, poverty, and limited education – are more likely to experience negative interactions and non-responsive parenting (Booth, Barnard, Mitchell & Spieker, 1987; Kelly, Morriset, Barnard, Hammond & Booth, 1996). Because they miss out on critically important opportunities to interact with their parents, the children in these families often have slower rates of cognitive and language development in the early years and, thus, often begin school at a disadvantage (Beckwith, 1971; Downey & Coyne, 1990; Furstenberg, Brooks-Gunn & Chase-Lansdale, 1989).

Project EAGLE, an EHS program in Kansas City, Kansas, has identified responsive parent-child interaction as an optimal and essential context for promoting children's development and for fostering families' well being. The present analyses were designed to support this program focus by examining parent responsiveness (close involvement and verbal response) as a predictor of early development for children in multi-risk families. In addition, for EHS families, we asked whether the level of engagement in home-based services, which were designed to enhance parent-child relationships, would be related to the level of parents' responsiveness with their children and to children's developmental progress.

Method

Participants

The analysis sample includes 74 families randomly assigned to the EHS Program Group and 79 control families. All families in the Program Group were offered home-based EHS services; and, for families with child care needs, the EHS program also provided placement in developmentally appropriate, community-based child care. Comparison families were free to access community services other than those provided by Project EAGLE. A stratified random sample was selected to represent the ethnic diversity of the community: 59 percent African American, 20 percent European American, and 20 percent Hispanic/Latino. When the focus children were born, maternal age ranged from 12 to 39 years (mean = 21.8).

Measures

Parent responsiveness. Parent responsiveness was assessed during 1-hour home-based observations scheduled to occur when children were 8, 14, 18, 24, 30 and 36 months of age, with actual ages ranging from 7 to 42 months. Data were collected during typical, unstructured home activities using the Code for Interactive Recording of Children's Learning Environments (CIRCLE) (Atwater, Montagna, Creighton, Williams & Hou, 1993). The CIRCLE system is a computer-based direct observation instrument that provides a sequential record of parent and child behaviors, as well as the context of their interactions, and includes 90 specific behavior and context codes. Inter-observer agreement, assessed during six percent of observations, averaged 91.1 percent across all CIRCLE codes (range = 80.7-96.30). For the specific behaviors used in these analyses, mean percentage agreement was 85.4 percent for parent involvement, 87.7 percent for parent verbal responses, and 80.2 percent for child social behavior.

For the present analyses, we identified a subset of behaviors relevant to the concept of parent responsiveness and constructed five measures to reflect different aspects of

responsiveness. Each measure represents the percentage of intervals the behavior occurred during observations, averaged across all observations for a given family. First, we identified two composite measures that provide an index of the parent's general responsiveness with the child.

- Parent talk to the child–Any parent talk directed specifically to the focus child.
- Close involvement–Any time the parent is in close proximity and attending to the child.

Second, we selected three specific measures that describe qualitative features of Parent Talk and Close Involvement. These behaviors are subsets of the two general measures described above and were selected because of their relevance to supporting children's language and learning.

- Prompt/expansion of child communication–The parent (a) requests a communicative response from the child, or (b) expands or elaborates on the child's communication.
- Positive/exuberant response–The parent (a) praises, affirms, or expresses affection to the child, or (b) speaks in a warm, enthusiastic manner to engage the child.
- Shared activity–The parent is closely involved, and is also participating with the child in an activity (e.g., playing with a toy, making cookies together). The parent is a co-participant rather than simply directing the child.

Children's development. To track developmental progress, we analyzed children's cognitive and language growth over time, using hierarchical linear modeling (HLM) (Raudenbush, Bryk, Cheong & Congdon, 2000). We assessed children's cognitive development with the Bayley Scales of Infant Development. Like the observations, Bayley assessments were scheduled at 8, 14, 18, 24, 30 and 36 months of age, with actual age of administration ranging from 7 to 42 months. The measure of language development was the percentage of time focus children talked (using words or signs) to other children or adults during CIRCLE observations.

For half of the assessment periods (14, 24 and 36 months), Bayley and CIRCLE assessments were conducted during the separate home visits. At other age levels, the two assessments typically were completed during the same visit.

Family risk factors. In previous studies, family risk factors have been associated with a higher risk of developmental delay (e.g., Sameroff & Fiese, 1990). Thus, to control for the possible confound of family risk status in the present analyses, a Cumulative Risk Index was calculated for each family, composed of factors assessed at enrollment: low parent education, parent not employed or in school, single parent status, adolescent mother, large family, minority status, and limited English proficiency.

Parent engagement in the EHS program. Active engagement in EHS services was examined as a possible predictor of parents' responsiveness with their children. We hypothesized that more highly engaged parents would carry through on program goals by being more responsive during parent-child interactions outside the intervention context. The engagement summary score is a composite of ratings that represent three different aspects of families' participation in EHS services: the level and consistency of parent participation over time, active interest and involvement during home visits, and follow through on individual program goals between visits. Program staff rated parent engagement after children aged out of the EHS program at age 3.

Results and Discussion

Indicators of Family and Child Risk

Many of the families in our sample experienced multiple risk factors in addition to poverty: 57 percent of mothers had not finished high school, 59 percent were neither employed nor attending school, 14 percent were minors when their children were born, 73 percent were single parents, 13 percent had large families (more than five members), 10 percent did not speak English, and 79 percent were from minority groups that are at increased risk for limited

opportunities in American society. On average, families experienced 3.1 risk factors in addition to low income (range = 0-6). Children's standard scores for cognitive development also indicate the level of risk in this sample (see Table 1). Although we found significant variation in children's cognitive development, their average scores were approximately one standard deviation below the mean and tended to decline over time.

TABLE 1
BAYLEY MENTAL DEVELOPMENT INDEX (MDI)

Child Age	N	Mean	Range
8 months	54	90.0	74 – 111
14 months	116	89.6	53 – 110
18 months	93	82.5	55 – 117
24 months	79	83.1	52 – 118
30 months	92	85.8	55 – 120
36 months	95	85.0	52 – 105

What Was the Relationship Between Parent Responsiveness and Children's Development?

To answer this question, we examined developmental trajectories for children in both the EHS Group and the Comparison Group. As a preliminary step, we first used HLM analyses to determine whether family risk status and group assignment (EHS vs. comparison) were significant predictors of the developmental measures. To control for the number of analyses conducted, results were evaluated at a .01 significance level. In contrast to expectations, risk status and group assignment were not significant predictors of children's Bayley performance or verbal communication. Thus, those variables were not included in further tests of parent responsiveness as a predictor of child outcomes.

Next, the five measures of responsiveness were examined individually as possible predictors of children's Bayley performance and verbal communication. HLM analyses revealed that every measure of verbal responsiveness (Parent Talk, Prompt/Expansion, and Positive/Exuberant

Response) was a significant predictor of Bayley outcomes (see Table 2). Figure 1 illustrates growth trajectories in cognitive development for children whose parents talked to them more often (the highest quartile for parent talk), compared to those who experienced the lowest level of parent talk (lowest quartile). Although the general measure of Close Involvement was not a significant predictor, Shared Activity was related positively to cognitive outcomes and was the only significant predictor of growth in cognitive development from 8 to 36 months.

Results for children's verbal communication were even more striking and consistent. Every measure of responsiveness was a significant predictor of both communication outcomes and increases in verbal communication from 8 to 36 months (see Table 3). Figure 2 illustrates developmental trajectories in communication for children who received the highest and lowest levels of parent talk. Thus, when parents were more verbally responsive and involved in their children's activities, children not only talked more; their use of words also increased more rapidly over time.

TABLE 2
SUMMARY OF HLM ANALYSES FOR PREDICTORS OF THE BAYLEY SCALES OF INFANT DEVELOPMENT (RAW SCORES)

		Intercept			Slope		
Predictors	df	Coefficient	T	P	Coefficient	T	P
Unconditional	50	113.20	94.302	.000	2.78	27.983	.000
Parent Talk to Child	150	0.19	3.883	.000**	-0.002	-0.405	-
Unconditional	150	113.45	73.280	.000	2.65	21.598	.000
Close Involvement	150	0.09	2.515	.012	0.003	0.956	-
Unconditional	150	115.37	177.450	.000	2.83	48.992	.000
Prompt/Expansion	150	0.46	4.117	.000**	-0.02	-1.803	-
Unconditional	150	115.92	193.826	.000	2.70	55.431	.000
Positive/Exuberant Response	150	0.87	3.703	.000**	0.04	2.352	.019
Unconditional	150	116.68	222.025	.000	2.72	66.061	.000
Shared Activity	150	0.42	2.799	.006*	0.04	3.933	.000**

Note: The unconditional model is the Level 1 HLM model without predictor variables. The intercept represents developmental level at the midpoint of the age range (23.5 months). The slope represents developmental change per month. Significance levels of .05 or better are listed in the table; asterisks indicate those Level 2 predictors that meet the .01 standard.

* $p < .01$
**$p<.001$

FIGURE 1
MODELED GROWTH TRAJECTORIES FOR COGNITIVE DEVELOPMENT ACROSS LEVELS OF PARENT TALK

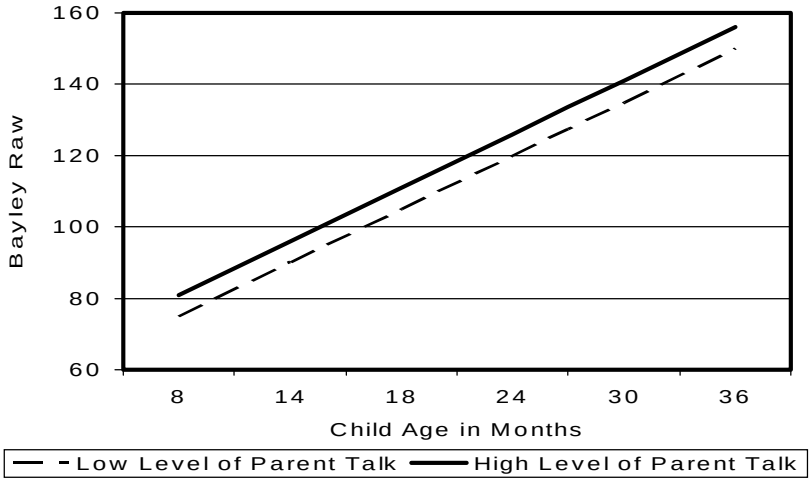


TABLE 3

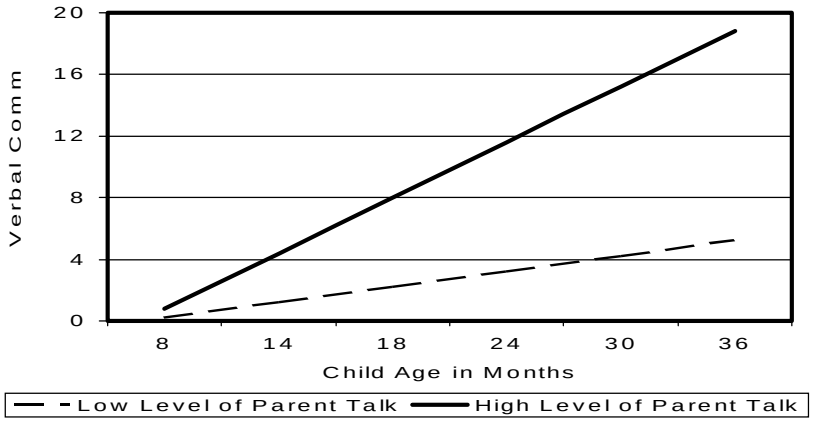
SUMMARY OF HLM ANALYSES FOR PREDICTORS OF CHILDREN'S VERBAL COMMUNICATION DURING TYPICAL HOME ACTIVITIES

		Intercept			Slope		
Predictors	df	Coefficient	T	P	Coefficient	T	P
Unconditional	151	0.42	0.616	-	0.04	0.587	-
Parent Talk to Child	151	0.24	6.741	.000**	0.02	6.002	.000**
Unconditional	151	0.57	0.678	-	0.11	1.598	-
Close Involvement	151	0.12	5.121	.000**	0.01	4.561	.000**
Unconditional	151	2.89	5.779	.000	0.29	5.578	.000
Prompt/Expansion	151	0.62	4.719	.000**	0.04	3.053	.003*
Unconditional	151	3.74	10.667	.000	0.35	9.919	.000
Positive/Exuberant Response	151	1.33	3.950	.000**	0.11	3.629	.001**
Unconditional	151	4.78	14.121	.000	0.41	13.261	.000
Shared Activity	151	0.58	3.577	.001**	0.08	4.713	.000**

Note: The unconditional model is the Level 1 HLM model without predictor variables. The intercept represents developmental level at the midpoint of the age range (23.5 months). The slope represents developmental change per month. Significance levels of .05 or better are listed in the table; asterisks indicate those Level 2 predictors that meet the .01 standard.

* $p < .01$
** $p < .001$

FIGURE 2
MODELED GROWTH TRAJECTORIES FOR VERBAL COMMUNICATION ACROSS LEVELS OF PARENT TALK



What Was the Relationship of Program Engagement to Parent Responsiveness and Child Development?

Given the results of the previous analyses, our next question was whether responsive parent behavior would be more frequent among those families who had participated most actively and consistently in EHS services. Although group differences were modest, parents with the highest level of program engagement had higher rates of verbal responsiveness with their children (see Table 4). In other words, those parenting behaviors that were most clearly related to child outcomes occurred more frequently in families who were highly engaged in the EHS program. Moreover, engagement in the program was predictive of more positive outcomes in children's cognitive development and verbal communication and of growth over time in verbal communication (see Table 5). Thus, the present results are consistent with previous evidence of a positive relationship between program engagement and developmental progress at 24 months (Atwater, Carta, Summers & Staker, 2001) and suggest that responsive interactions might be one of the processes that underlie that relationship.

Taken together, these analyses provide empirical support for the EHS program's emphasis on responsive parent-child interactions as a key component of intervention for children and families who experience multiple risks.

TABLE 4
DIFFERENCES IN RESPONSIVENESS ACROSS LEVELS OF PROGRAM ENGAGEMENT

	Level of Program Engagement			
Responsiveness Measure	Low (n=21)	Moderate (n=27)	High (n=26)	df = 2,70
Parent Talk to Child	16.37	19.81	25.71	F = 4.799**
Close Involvement	43.02	38.01	46.63	-
Prompt/Expansion	2.55	3.28	5.00	F = 3.990*
Positive/Exuberant Response	0.80	0.98	1.91	F = 3.491*
Shared Activities	0.12	0.78	0.96	-

Note: The Cumulative Risk Index was entered as a covariate in these analyses.

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

TABLE 5
HLM ANALYSES OF PROGRAM ENGAGEMENT AS A PREDICTOR OF CHILDREN'S COGNITIVE DEVELOPMENT AND VERBAL COMMUNICATION

Predictors	df	Intercept			Slope		
		Coefficient	T	P	Coefficient	T	P
Cognitive Development							
Unconditional	75	115.66	49.673	.000	3.04	11.825	.000
Risk	75	-0.96	-1.961	.050	-0.04	-0.761	-
Engagement	75	0.33	2.681	.008*	-0.01	-0.951	-
Verbal Communication							
Unconditional	71	-0.67	-0.336	-	0.10	0.512	-
Risk	71	0.85	1.660	-	0.05	0.890	-
Engagement	71	0.31	3.103	-.002*	0.02	2.686	.008*

Note: The unconditional model is the Level 1 HLM model without predictor variables. The intercept represents developmental level at the midpoint of the age range (23.5 months). The slope represents developmental change per month. Significance levels of .05 or better are listed in the table; asterisks indicate those Level 2 predictors that meet the .01 standard.

* $p < .01$
** $p < .001$

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EARLY HEAD START IMPACTS ON PARENTAL STRESS AND HARSH PARENTING ATTITUDES AMONG RURAL FAMILIES

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In addition to examining key child outcome measures, the Early Head Start (EHS) evaluation study has sought to examine impacts on parenting knowledge, attitudes, and behavior. Early Head Start programs such as Early Education Services in Windham County, VT, see parenting as a critical pathway in influencing the development of infants and toddlers. To supplement national findings and to inform practice at the local level, researchers at the Harvard Graduate School of Education gathered longitudinal data at the VT site that provide a closer look at parenting stress and parenting attitudes. This effort was motivated by the belief that goal setting for families with young children in programs like EHS can be enhanced by a greater awareness of the range of parent-related needs and how those needs may change over time as infants and toddlers mature. This study, then, was designed to examine parenting stressors and child rearing attitudes, as well as emotional issues such as parental depression, anxiety, and rigidity, that may influence the quality of parenting for children in rural families such as those living in VT.

Method

The sample for this study consisted of 141 parents at the VT site1. All of the primary caregivers were mothers. More than half of these rural families, like many of their urban counterparts, consist of single female heads of household. Most mothers were between 20 and 29 years old at enrollment in the study; the youngest was 17 years old and the oldest 41. The

[1]Five of the participants from the original study sample only had baseline data and were excluded from all analyses.

majority of the mothers enrolled in the study just after the birth of their first child. In contrast to families in some urban sites, the vast majority of families in the VT sample are white native English speakers. Families in the comparison group received services typical for this community. The state of Vermont has been one of the most progressive in the promotion of services for young children. For example, most children in the state receive some form of home visitation during the first year of life. Childcare services are more readily available and more comprehensively funded by the state than in many other states (Vermont Agency of Human Services, 2001). Consequently, many of the services offered by EHS were available to mothers in the comparison group, though components were not coordinated and were not provided continuously over time as they were for program families served by Early Education Services.

The goal of this study was to examine parenting stress and parenting attitudes over time. Parenting stress was measured by the Parenting Stress Index-Short Form (PSI; Abidin, 1995), the short version of a well validated instrument that yields measures of parental distress, parent-child relationship, and the parent's perception of the child's functioning, as well as a measure of total parenting stress. Harsh parenting attitudes were measured using the Child Abuse Potential Inventory (CAP; Milner, 1986), a 120-item questionnaire that provides an indication of the potential for harsh or abusive parenting, as well as more specific indices of distress, rigidity, and unhappiness. Both the PSI and the CAP are self-report measures. Each was administered on four occasions: at baseline (i.e., enrollment in the study) and at child ages 14, 24, and 36 months.

In this report, we first present descriptive baseline data for the sample as a whole. Next we compare observed levels of parenting stress and harsh parenting attitudes at successive points in time for the program and comparison groups. Finally, based on individual growth modeling, we examine group differences in rate of change in parenting stress and harsh parenting attitudes over time.

Results

Baseline. Wide variation was observed in both parenting stress and parenting attitudes at the time of enrollment. Based on the PSI, mothers in this sample found parenting more stressful than the average parent in the general population. However, sample mothers' perceptions of parenting stress varied from a low total parenting stress score (7th percentile), indicating no stress in the parenting role, to a high total stress score (98th percentile), in which stress was the norm in almost every domain of parenting. Based on clinically validated cut-off values established by the authors of PSI, parents were considered to be at "high levels" of stress if their total parenting stress score was above the 85th percentile. In this sample, responses of over a fourth of the mothers (28 percent) indicated high levels of parenting stress.

Maternal responses to the CAP questionnaire also showed wide variation in mothers' parenting values and beliefs and emotional health. Maternal responses varied from the 1st to the 99th percentile in terms of predicted potential for harsh parenting practices (i.e., acting in a physically abusive way toward their children). Using the clinical cut-off of the 95th percentile as an indicator of high risk parenting (Milner, 1986), over a fourth (26 percent) of the mothers in our sample expressed potentially harsh, abusive values and beliefs about their children. With respect to the mother's emotional well-being, problems most frequently identified as influencing the potential for harsh parenting and child abuse included emotional health indicators of unhappiness/depression (reported by 26 percent of the mothers) and emotional distress (reported by 22 percent of the mothers). In contrast, many mothers saw their relationships with their infants and toddlers as positive (95 percent). One fifth of the mothers felt that their lives were relatively stress-free in terms of their parenting (PSI 19 percent) and emotional health (CAP 21 percent). These indices speak to the strengths, as well as the risks, of most families at baseline.

Change over time for each group. We next asked whether there were changes in parenting stress, harsh parenting attitudes, and emotional mental health in the mothers over time. Changes in the level of *total parenting stress*, in *parental distress* (subscale of the PSI) and in *harsh parenting attitudes* were observed for the sample as a whole across time. The level of parenting stress fell for both groups across time, with the highest stress usually reported during the child's infancy (see Table 1). The change over time was most striking for parenting distress. These findings support the notion that infancy is a relatively stressful period of adjustment and reaffirm the importance of intervention with families as early as possible in the lives of young children.

Group differences in levels at each time point. There were no statistically significant differences in levels of total parenting stress, parenting distress subscale scores, harsh parenting attitudes, or in maternal mental health at baseline. However, by the time children were 14 months of age, statistically significant differences between the groups were evident, with parents in the program group showing lower levels of total parenting stress ($t = 2.39$, $p = .01$) and parental distress ($t = 2.73$, $p = .007$). At 24 months statistically significant group differences, again favoring the program group, were noted in total parenting stress ($t = 3.2$, $p = .001$), parental distress ($t = 3.76$, $p = .0003$) and in harsh parenting attitudes ($t = 2.4$, $p = .01$)[2]. Although both groups on average showed a reduction in all of these risk factors over time, the program group had steeper and more sustainable declines across the four waves of data collection (see Table 1). At 36 months of age, program parents continued to demonstrate statistically lower levels of total parenting stress ($t = 2.09$, $p = .03$) and parental distress ($t = 3.2$, $p = .001$). In addition, they showed lower levels of maternal unhappiness/depression ($t = 2.2$, $p =$

[2]Both scales measure the presence of negative factors in parenting. Therefore lower scores indicate a reduction in these negative factors.

TABLE 1
MEANS AND STANDARD DEVIATIONS OF RAW SCORES FOR TOTAL PARENTING STRESS, PARENTAL DISTRESS, AND HARSH PARENTING ATTITUDES ACROSS TIME

	Total Parenting Stress	**Parenting Distress Subscale**	**Harsh Parenting Attitudes**
Baseline			
EHS Group			
Mean	73	27	111
SD	13	7	101
Comp Group			
Mean	77	30	125
SD	16	7	92
14 Months			
EHS Group			
Mean	66	26	97
SD	15	8	85
Comp Group			
Mean	74	30	107
SD	21	10	88
24 Months			
EHS Group			
Mean	61	22	84
SD	14	8	71
Comp Group			
Mean	71	29	74
SD	18	9	104
36 Months			
EHS Group			
Mean	65	22	74
SD	16	8	76
Comp Group			
Mean	74	28	98
SD	23	11	79

.03). By this point, there were no longer group differences in harsh parenting attitudes as measured by the CAP.

Group differences in rate of change over time. Analysis of rates of change over time offered further evidence of greater decrease in parenting stress and harsh parenting attitudes among parents enrolled in EHS, relative to parents in the comparison group. Specifically, parents in the program group showed greater rates of change (i.e., decline) in both total parenting stress ($t = 2.02$, $p = .04$) and in parental distress ($t = 2.73$, $p = .007$) than did parents in the comparison group.

Discussion

Mothers with young children living in poverty in rural America can benefit from EHS intervention even in a community where a number of other, albeit less coordinated, services are available to low-income families. Parenting stress appears to be highest during the child's first year of life. Although reduction in parenting stress is observed among all parents as infants mature, the rate of reduction is accelerated among parents participating in EHS. Change is most notable in the parent's own distress around parenting (rather than her perception of her child as a 'difficult' child). As with parenting stress, harsh parenting attitudes appear to diminish over time among parents in both the program and comparison groups. Nonetheless, intervention does appear to have a beneficial impact on harsh parenting attitudes, particularly around child age 2. It may be that this is a period of parenting development when issues around discipline are more salient and during which coordinated interventions for both parent and child may be most valuable.

Taken together, these results suggest that the coordinated child and family-focused services of EHS have the potential to change parenting attitudes and practices. The reduction of parenting stress and parents' feelings of increased competence are important for framing positive parenting for the future. Among mothers of 2-year-olds, EHS also appears to reduce depression and unhappiness, two major impediments to positive parenting. Programs serving families like these must be able to assess each family's needs in terms of risks and strengths and develop an intervention plan tailored to individual needs. The above findings point out the importance of targeting the reduction of parental distress and depression as critical goals for intervention during the child's first three years of life.

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MOTHERS' SOCIALIZATION OF TODDLER CONFLICT RESOLUTION

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Numerous studies show that peer conflict is quite prevalent in young children's lives. As part of children's socialization, parents transmit beliefs regarding appropriate responses to conflict situations. Extant literature suggests that as these beliefs become instantiated in parental behavior, they influence children's social behavior and become critical to the development of social competence.

One such belief about conflict resolution is that aggression is a legitimate solution to social problems. Parents who fail to intervene when children behave aggressively implicitly communicate to their young children that aggression is acceptable. Investigations have linked the belief that aggression is a socially acceptable response with childhood aggression. This is troublesome since children's early patterns of aggression become increasingly stable and destructive as they grow older. Fortunately, intervention programs that target social problem solving have shown that the cognitions underlying aggression are potentially modifiable especially if interventions are introduced early.

While many studies demonstrate the importance of mothers' attributions of their children's social behaviors and mothers' overall parenting goals, few studies have investigated low-income mothers' beliefs about how their children should resolve peer conflicts. Likewise, many studies of children's conflict resolution have been conducted with elementary school children and have not been extended to parents' socialization of toddler conflict resolution. Therefore, in this particular examination, we sought to characterize mothers' attitudes about the strategies that their young children should employ in conflict situations with peers. We also explored how these maternal beliefs are affected by participation in Early Head Start.

The sample was comprised of a subset of families from the 36-month Early Head Start (EHS) cohort in New York City. Sixty mothers of 27 girls and 33 boys were participants in this particular study. Mothers' mean age at the time of their children's 3-year-old birthday was 24.6 (SD = 7.1). Mothers were from ethnically diverse backgrounds. Children's gender and mothers' ethnicity did not relate to maternal beliefs about conflict resolution.

During the 36-month-home visit, mothers were instructed to complete a conflict resolution self-administered questionnaire. The questionnaire was based on a social problem-solving scale used by Slaby and Guerra (1988) geared to a sample of adolescents. The questionnaire required mothers to choose strategies that they would want their 3-year-old children to use in four hypothetical conflict situations. Participants were asked to imagine that their child was involved in a situation with a peer who is intrusive or interferes with a goal, such as in the following situation:

Your child is standing in line for a drink at a water fountain. Another child comes along and pushes your child out of the way and takes his/her place. *What would you want your child to do?* (fill in **ALL** that apply)

- ❑ Call the other child names.
- ❑ Push the other child out of the way.
- ❑ Walk away.
- ❑ Tell an adult (parent, teacher) and ask for help.
- ❑ Tell the other child that "This is my place, please get in line."

The other three scenarios depicted conflict over a toy, name-calling, and physical belligerence. For each conflict, mothers were presented with solutions appropriate to the target situation. The five solutions reflected: *ask an adult for help, verbal prosocial responses* (words

with peers), *walk away, physical aggression*, and *verbal aggression*. Chronbach's alpha ranged from .66 to .89 indicating the internal reliability of the scale.

The ranges for *ask an adult for help, verbal prosocial responses, walk away, physical aggression, and verbal aggression* were 0-4, 0-6, 0-4, 0-3, and 0-1, respectively. To assess mothers' beliefs regarding their children's resolution of peer conflicts, frequencies of the five strategies were calculated across the four situations. Ninety-two percent of the mothers responded that *ask an adult for help* was desirable as opposed to 8 percent who did not choose the strategy once (see Figure 1). In fact, 29 of the mothers believed that asking an adult for help was preferred in all four situations. Responses that were verbally *prosocial* (with peers) were also common in that 75 percent of the mothers preferred it at least once; 25 percent of the mothers did not single it out (see Figure 2). Thirty-eight percent chose *walk away* at least once while 62 percent never viewed it as a way to solve peer conflicts (see Figure 3). Surprisingly, 23 percent of the mothers opted for *physical aggression* while 77 percent did not (see Figure 4). Only 8 percent of mothers stated that *verbal aggression* was an appropriate strategy at least once. Ninety-two percent never chose *verbal aggression* as a justifiable response to peer conflict (see Figure 5).

Some interesting patterns emerged regarding mothers' number of children and age. Mothers with more children were less likely to consider *walk away* as a viable alternative in conflict situations as compared to mothers with less children ($r = -.29$, $p < .05$). Older mothers were more likely than younger mothers to view *verbal prosocial* peer strategies as legitimate responses to peer conflict ($r = .26$, $p < .05$).

FIGURE 1
PERCENTAGE OF MOTHERS WHO ENDORSED ASK AN ADULT FOR HELP PEER CONFLICT RESOLUTION STRATEGY
N = 60

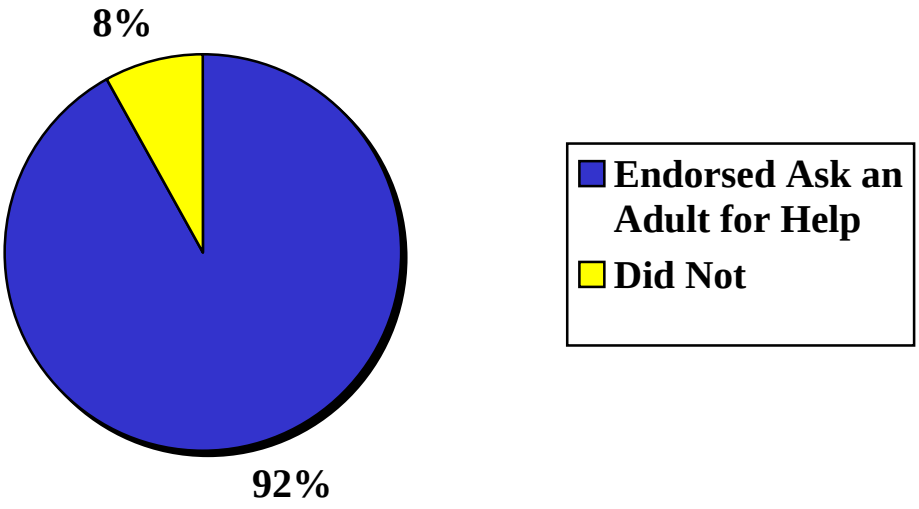


FIGURE 2
PERCENTAGE OF MOTHERS WHO ENDORSED VERBAL PROSOCIAL RESPONSES
PEER CONFLICT RESOLUTION STRATEGY
N = 60

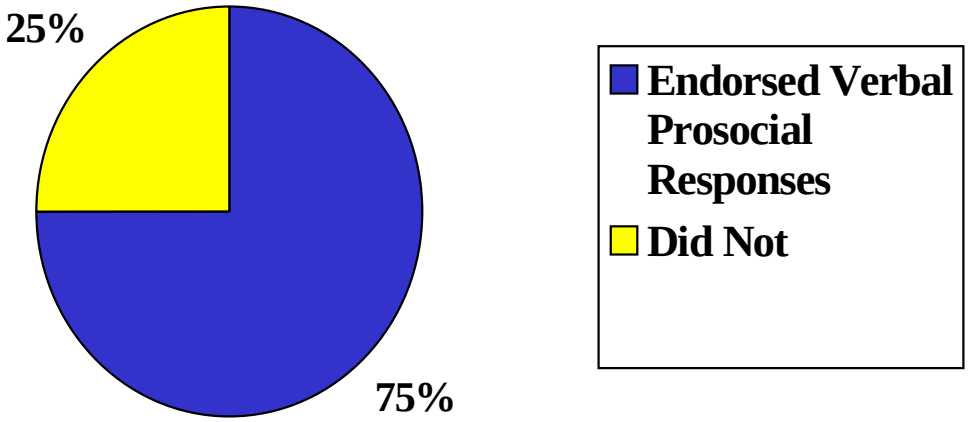


FIGURE 3

PERCENTAGE OF MOTHERS WHO ENDORSED WALK AWAY PEER CONFLICT RESOLUTION STRATEGY, N = 60

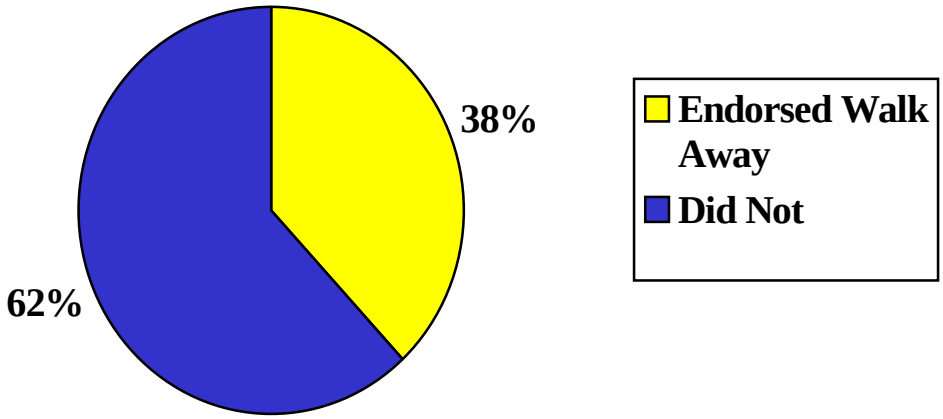


FIGURE 4
PERCENTAGE OF MOTHERS WHO ENDORSED PHYSICAL AGGRESSION PEER CONFLICT RESOLUTION STRATEGY, N = 60

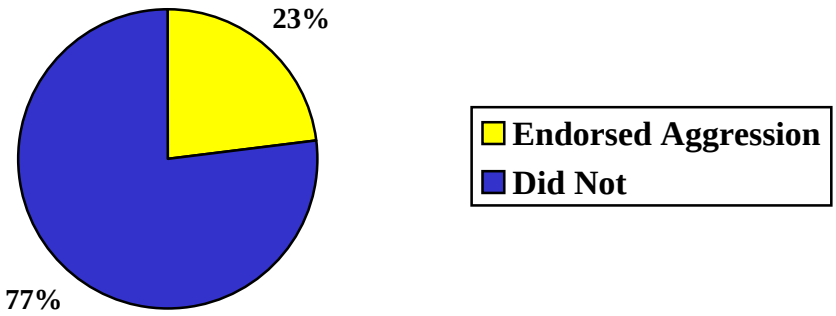
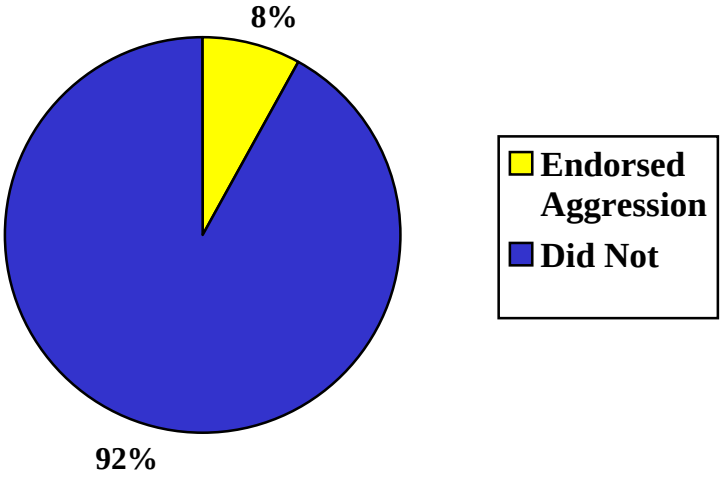


FIGURE 5
PERCENTAGE OF MOTHERS WHO ENDORSED VERBAL AGGRESSION PEER CONFLICT RESOLUTION STRATEGY, N = 60



Although it was possible for mothers to choose both aggressive and prosocial responses in the same situations, mothers tended not to do so. Mothers who chose *physical aggression* as a strategy were less likely to choose *verbal prosocial responses* ($r = -.27$, $p < .05$). Mothers who selected *verbal prosocial* strategies and *ask an adult for help* were less likely to select *verbal aggression* (rs = -.36, and -39, ps < .01). In contrast, mothers who viewed *verbal aggression* as a solution to peer provocation tended to view *physical aggression* as a noteworthy strategy ($r = .47$, $p < .001$). *Walk away* was not associated with any other variables.

Multiple t tests were calculated to examine the effects of Early Head Start on mothers' beliefs about strategies for children's peer conflict resolution. When Treatment mothers (N = 28) were compared to Control mothers (N = 32), no differences were found regarding conflict resolution strategies. However, many of the families randomly assigned to the two Early Head Start sites, Teen Aid High School and Educational Alliance, did not actually participate at the centers. Hence, program participation was determined by the staff at the Early Head Start sites. Families were considered to be "receiving" Early Head Start services only when attendance was "fair" or better and were called attendees. Families with "poor" attendance (no services from EHS) were excluded from further analyses. Importantly, findings suggested that the poor attendees had more traditional values, more violence in their lives, and less social support than attendees (M. Spellmann, personal communication, 2002).

Teen Aid attendees (N = 8) advocated *walk away* more than Teen Aid controls (N = 15), $t(21) = 2.12$, $p < .05$. Educational Alliance attendees (N = 7) endorsed *physical aggression* and *walk away* less than controls (N = 17), $t(22) = 2.50$, $p < .05$ and $t(22) = 1.77$, $p < .10$. In contrast to controls, mothers who received services from Educational Alliance tended to support *ask an adult for help*, $t(22) = 1.94$, $p < .07$.

In this study, we sought to elucidate mothers' attitudes about how their children should resolve peer conflicts. Although the literature suggests that mothers see their children's peer aggression as misbehavior, almost one quarter of the mothers in this study endorsed physical aggression as a desirable strategy in resolving peer conflict. This belief contributes to a socialization environment in which the child believes that aggression is appropriate and acceptable. In fact, highly aggressive children and adolescents see aggression as a legitimate response to social discord.

An important finding was that most of the mothers in this study selected conflict resolution strategies predictive of children's prosocial competence. In addition, mothers were consistent in their adoption of strategies. In general, those mothers who endorsed verbal aggression also endorsed physical aggression. Mothers who promoted verbal prosocial peer responses and asking an adult for help did not advocate aggression.

Although aggression is a relatively stable behavior, our findings suggest that mothers' beliefs about children's conflict resolution can be modified by intervention. Teen Aid mothers supported walking away more often than those participants who did not attend Teen Aid. Mothers that were present at Educational Alliance endorsed physical aggression less often than those participants who did not attend Educational Alliance. Instead, Educational Alliance mothers wanted their children to ask adults for assistance with peer disputes. It is notable that attendance in Early Head Start did not impact mothers' selection of prosocial peer responses, a solution touted in the literature and in schools. Programs may need to educate parents about the benefits of encouraging children to employ verbal strategies in negotiations with peers. Nevertheless, three quarters of the mothers chose this strategy at least once indicating that prosocial verbal negotiation is a recognized solution of mothers in this sample.

It is likely that Early Head Start program participation, perhaps by informing parenting or influencing child behaviors, positively influenced mothers' beliefs about how children should resolve peer conflict. Specifically, antiviolence messages, such as encouraging teens to walk away from potential conflicts, were possibly modeled and promoted in the Early Head Start sites. The particular content of the Early Head Start programs, which supported nonaggressive prosocial beliefs, should be identified to facilitate replication in other centers.

This study aimed to shed light on the value of maternal beliefs in shaping young children's resolution strategies in peer conflicts. However, it must be remembered that a mother's approach to conflict resolution is just one, albeit important, facet of a broader childrearing perspective. Further research should illuminate how parental beliefs emerge, how beliefs contribute to the developmental outcomes of children, and the styles of parenting that beliefs subsume.

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EARLY HEAD START INTERVENTION WITH FAMILIES AND FAMILIES' INVESTMENT IN CHILDREN

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A federally funded program serving young economically disadvantaged families with children under 3, United Cerebral Palsy Early Head Start in Northern Virginia (EHS) promoted child development through a flexible mixture of individualized, needs-oriented child and family services. The child-focused services included center-based childcare, family-based childcare, and home visiting. The family-focused services included parent mobilization activities and linkage to community resources on behalf of parents and children. In particular, parent mobilization involved psychosocial, informational, and task-focused practice activities designed to enable parents to fulfill their parenting roles, achieve family well-being, and move toward family economic self-sufficiency. Linking to community resources involved EHS staff's assistance in connecting families to their communities in order to secure supplemental services that support and promote children's healthy development, parents' competencies in childrearing, and parents' personal development. To date, however, little is known about how the provision of EHS services strengthens family functioning, parental investment in their children, and children's social development.

In exploring program impact on 73 EHS participants, the research team from The Catholic University of America: (a) assessed family needs and identified family aspirations at enrollment; (b) documented the type and amount of EHS services delivered to families; and (c) assessed family functioning and child social development when the enrolled child reached 30 months of age, a date six months prior to program exit. The researchers further explored whether variance in service delivery was associated with a family's status as a U.S. born or immigrant family. Last, the researchers explored whether EHS service delivery was congruent with families' needs

and aspirations at enrollment, and, in turn, whether such congruence empowered families to achieve greater competency in their pre-exit functioning; and whether family functioning created a family environment with increased investment in the targeted EHS children and, thereby, promoted the children's social development at 30 months.

Research Design

The investigation of pathways to desired child and family outcomes is based on information gained from 73 families, who were randomly assigned to participate in the EHS program. This study used an experimental research design with quantitative enrollment and

pre-exit measures and qualitative categorization of service activities by EHS staff.

Enrollment and Pre-Exit Measures

The enrollment data and pre-exit data from mothers were collected through structured interviews conducted by trained interviewers. Mothers were selected as respondents because of their universal presence and availability for interviews. Spanish-speaking interviewers and bilingual interpreters for other languages were used as needed.

Family Status. Because cultural identity affects people's perception of their needs, life style, and actions (Shonkoff & Phillips, 2000), families were identified as having an immigrant family birth status and lifestyle when the mother was born outside the U.S.

Enrollment Assessment of Family Needs and Resources. Adequacy of family resources for meeting needs was measured by the Family Resource Scale (Dunst & Leet, 1987; Wall, et al, 2000), a measure with established validity and reliability. The 33 items form five conceptual clusters denoting needs and wants for adequate level of living, needs for parenting supports, monetary resource wants, interpersonal resource wants, and personal resource wants. The 5-point Likert scale ranges from "never" to "always" adequate with a total score of less than 130 reflecting perception of family resources as usually inadequate.

Enrollment Family Goals and Aspirations. Family goals and aspirations were measured by an 11-item scale, which reflects parents' desire for future achievement and personal change in gaining greater economic self-sufficiency, improving their living situation, and increasing their family life satisfaction. The dichotomously scored items were adapted from the *Teenage Parent Demonstration Second Follow-Up*, a population survey similar in age and cultural diversity to the present sample (Aber, Brooks-Gunn & Maynard, 1995).

Pre-Exit Family Functioning Family functioning competencies were measured by an abbreviated 24-item Family Functioning Scale (Dunst, Trivette & Deal, 1988). The 5-point Likert scale reflects strengths associated with family commitment, appreciation, sense of purpose, congruence, communication, sense of relationship, coping, problem solving, positivism, flexibility, and sense of balance. The items cluster around three factors of family identity, information sharing, and coping and resource mobilization. The total score reflects overall competency in family functioning. The scale has established validity and an appropriate internal consistency alpha of .89.

Pre-Exit Family Investment in their Child. Family investment in the targeted child was conceptualized as parents' perception of their emotional and time availability for their child and was measured by two Likert-scaled items comprising one factor with established validity from the long form of the Family Functioning Scale (Dunst, Trivette & Deal, 1988).

Pre-Exit Child Social Development. Children's social development was measured by the 83-item Child Behavior Checklist (CBCL) (Achenbach, 1992), a measure with an established validity and reliability. The total score of this 3-point Likert scale identifies problems in children's social behavior based on established age norms.

Documentation of EHS Services Delivered

In order to assess the range and scope of EHS services documented in children's case records, a structured case-record review guide was developed from the monthly staff notations of service activities targeted to EHS children and families. In collaboration with the program staff and research team, the leading author developed the data collection instrument and trained a doctoral social work student in its use. To achieve consistency, the researcher and the doctoral student cross-referenced their procedures until they reached complete agreement for data categorization, interpretation, and documentation.

Child Care and Program Services. As this particular EHS center provided a flexible mixture of individualized, needs-based child and family services, it was possible for targeted EHS children to be serially enrolled in one to three program types for up to 3 years. For example, the family could enroll the child in the child development center (CDC) program, family child care (FCC) program, or home visiting (HV) program, or some sequential combination of the three programs.

Linkage to Community Services. The staff's linking of families and children to community services included referrals (phone calls and letters), advocacy contacts (meeting with other professionals or other agency representatives) on behalf of children and parents, and assistance with transportation or accompaniment to services. The recorded monthly contacts were tabulated and average monthly scores identified.

Parent Mobilization Services. These services included practice activities targeting child and family needs. Content analysis of narrative themes yielded 19 items reflecting child needs, 26 items reflecting family needs for parenting and self-sufficiency, and 20 items reflecting parents' personal needs. Specifically, practice activities targeting *child needs* clustered around child care, child health including insurance issues and illness status, child development (speech and

language, eating and nutrition, gross and fine motor development, toilet training), developmental delay including provision of assessment and early intervention services, child psychosocial behavior (socialization, play, and behavior self-control), parent-child relationship, and age-related transitioning out of EHS services. Practice activities targeting *family needs* clustered around: (a) parenting issues such as knowledge of parenting and disciplinary practices appropriate for infants and toddlers, and parent management of issues surrounding child custody and abuse/neglect, toys, child safety at home and in the neighborhood, and siblings' developmental and educational needs; and (b) self-sufficiency issues such as parents' concern about their legal status, education, employment, family income, extended family living in their household, and provision of household necessities (living space, food, clothing, transportation, telephone). Practice activities targeting *parents' personal needs* clustered around parents' health (insurance issues, health status, disability), mental health (mood, aggression, substance abuse), employment-related coping issues, marital or partner relationship issues, and community involvement.

Findings

Demographic Profile

Located along a busy corridor in a suburban Virginia county, the EHS center was part of a commercial strip mall in a densely populated multicultural area about 30 minutes south of Washington D.C. The center served economically disadvantaged families living predominantly in motels and low-rise apartments within a 10-mile radius.

Of the 73 EHS families, 19 percent enrolled in 1996; 44 percent enrolled in 1997; and 37 percent enrolled in 1998. Of all the families, 56 percent (N = 41) were U.S.-born and 44 percent (N = 32) were immigrant families. Most of the children in these families were enrolled by one year of age and several mothers were pregnant at enrollment. One third (32 percent) of all

families had one child; one third (36 percent) had two children; and one third (32 percent) had three to five children. Close to three-quarters (70 percent) of the targeted children lived with two parents and relatives; one fifth (20 percent) lived with a single parent (mother), and few (10 percent) lived with a single mother and relatives.

The families differed in parents' age, income, education and cultural heritage ($p < .05$). Immigrant families had mothers (M = 28, SD = 6) and fathers (M = 33, SD = 7) who were somewhat older, had slightly lower average poverty-based income (M = $11,958, SD = $4,519), were mainly of Spanish-speaking heritage (78 percent), and had mothers who have not completed high school education (65 percent). In comparison, the US-born families had mothers (M = 24, SD = 4) and fathers (M = 26, SD = 7) in their mid-twenties, had slightly higher but still poverty-based income (M = $13,226, SD = $4,756), were predominantly of African American (41 percent) or Caucasian heritage (39 percent), and had mothers who were more likely to have completed high school (81 percent).

The participating families did not differ in employment self-sufficiency in that three-quarters (75 percent) of mothers were unemployed while four-fifths (86 percent) of fathers were employed either part- or full-time.

Amount and Type of EHS Services Delivered

Program Types. Over two-thirds (66 percent) of families received home visiting, family childcare, or a combination of the two; the remainder (34 percent) received center-based childcare or a combination of center-based child care with family childcare or home visiting. When analyzed by family status, however, almost all (94 percent) immigrant families received family childcare, home visiting, or the two combinations. The US-born families differed from immigrant families in that half (51 percent) received center-based child care or a combination of center-based childcare with home visiting or family child care, while the other half (49 percent)

received a combination of family childcare and home visiting (x^2 = 16.8, df = 1, p = .000, Phi = .5).

To assess the amount of service received, the first and last known contact dates were adjusted for the number of times the EHS family could not be reached at their known address.

Length of time in the program (months) = Date of the last monthly note – Date of the first monthly note
Length of time served by the program (months) = Length of time in the program - Number of missed contacts

Therefore, based on the presence of the first and last documented monthly contact note, families participated in EHS for 25 months (SD = 10) on average and missed contact for 3 months (SD = 3) on average. Adjusting for absences, the families averaged 22 months (SD = 10) of actual program contact. Table 1 suggests that almost half received 2 to 3 years of actual contact; one-third (33 percent), from 1 to 2 years; and one-fifth (22 percent), less than 1 year.

TABLE 1
EHS PROGRAM CONTACT WITH PARTICIPATING FAMILIES

Length of Program Contact	**Number of Families**	**Percent of Families**
6 months or less	7	10%
7-12 months	9	12%
13-24 months	24	33%
25-39 months	33	45%
Total	73	100%

Regardless of the type of EHS program received, immigrant families (M = 26 months, SD = 8) participated significantly longer on average than US-born families (M = 18 months, SD = 10) (N = 73, F = 4.1, df = 72, p = .009).

Linkage to Community Services. Taking into account the actual service contact with families, four-fifths (82 percent) of the families averaged one to two monthly community service contacts; a few (6 percent), three to four monthly community contacts. Some families (12 percent) did not use such assistance. The type of program and family status did not influence provision of linkage.

Parent Mobilization for Children's Needs. Adjusted for the duration of actual EHS service contact, families received an average of two to three (SD = 1) activities per month (see Table 2) to assist with their children's needs. The type of program and family status did not influence the delivery of parent mobilization activities for children's needs.

TABLE 2
EHS PARENT MOBILIZATION FOR CHILDREN'S NEEDS PER MONTH OF SERVICE CONTACT

Number of Child-based Activities per Month of Service Contact	Number of Families	Percent of Families
Less than 1 Child Activity	4	5%
1-2 Child Activities	15	21%
2-3 Child Activities	32	44%
3-4 Child Activities	14	19%
4-5 Child Activities	8	11%
Total	73	100%

Parent Mobilization for Family Needs. Adjusted for the duration of actual EHS service contact, families received an average of one to two (SD = 1) activities per month (see Table 3) to assist with their overall family needs.

TABLE 3
EHS PARENT MOBILIZATION FOR FAMILY NEEDS PER MONTH OF SERVICE CONTACT

Number of Family-based Service Activities per Month of Service Contact	Number of Families	Percent of Families
Less than 1 Family Activity	15	21%
1-2 Family Activities	39	53%
2-3 Family Activities	10	14%
3-4 Family Activities	5	7%
4+ Family Activities	4	5%
Total	73	100%

Family status, however, influenced the total amount of parent mobilization for family needs (see Table 4). That is, immigrant families received an average of two parent mobilization family-based activities per month while US-born families received one such service activity per month.

Furthermore, examining the range of parent mobilization for family needs revealed that immigrant families (M = .5, SD = .4) received activities slightly more focused on parenting issues per month than US-born families (M = .3, SD = .3) (N = 73, F = 6.4, df = 1, p = .01).

TABLE 4
UNIVARIATE ANALYSIS OF VARIANCE: AVERAGE NUMBER OF TOTAL OF 26 PARENT MOBILIZATION ACTIVITIES FOR FAMILY NEEDS PER MONTH OF SERVICE (N 73)

Source	DF	Mean Square	F	Sig.
Model	3	7.2	4.8	.004
Intercept	1	102.9	68.3	.000
Program*	1	1.63E-02	.01	.917
Family Status**	1	8.1	5.4	.023
Program by Family Status	1	5.5	3.7	.059
Error	69	1.5		

* HV or FCC and CDC program services
** US-born and Immigrant families

Parent Mobilization for Parents' Personal Needs. Adjusted for the duration of actual EHS service contact, families received an average of one to two (SD = .7) activities per month targeting parents' personal needs (see Table 5). Family status and the type of EHS program did not influence parent mobilization for parents' personal needs.

TABLE 5
EHS PARENT MOBILIZATION FOR PARENTS' PERSONAL NEEDS PER MONTH OF SERVICE CONTACT

Number of Parents' Personal Needs Service Activities per Month of Contact	Number of Families	Percent of Families
Less than 1 Personal Need Activity	25	34%
1-2 Personal Needs Activities	36	49%
2+ Personal Needs Activities	12	16%
Total	73	100%

Total Number of EHS Parent Mobilization Services. Adjusted for the duration of actual EHS contact, families received an average of five to six total parent mobilization activities per month targeting their overall needs or the needs of their children, the whole family, and their own personal needs (see Table 6). Family status influenced total parent mobilization in that immigrant families (M = 6, SD = 2) received slightly more total parent mobilization than US-born families (M = 5, SD = 3) (N = 73, F = 2.9, df = 1, p = .09). The type of program did not exert any influence.

TABLE 6
EHS TOTAL PARENT MOBILIZATION PER MONTH OF SERVICE CONTACT

Number of Total Parent Mobilization Activities per Month of Service Contact	Number of Families	Percent of Families
Less than 4 Total Service Activities	12	16%
4-7 Total Service Activities	50	69%
8+ Total Service Activities	11	15%
Total	73	100%

Psychosocial Assessment at Enrollment Interview

Family Needs and Resources at Enrollment. Participating families averaged a total score of 110 (SD = 20), denoting somewhat less than adequate needs and resources at enrollment. Immigrant families (M = 97, SD = 17) had significantly fewer resources to meet family needs at enrollment than US-born families (M = 120, SD = 16) (N = 73, t = 5.7, df = 73, p = .000).

Family Aspirations at Enrollment. Families averaged 8 (SD = 3) out of 11 possible future goals and aspirations. Goals and aspirations did not vary by family status designation.

Outcomes at Pre-Exit Interview

Fifty-five (75 percent) of the 73 families and children originally enrolled in EHS completed the pre-exit (when child turned 30 months) outcome measures, an attrition rate of 25 percent.

Pre-Exit Family Functioning. Families averaged a total family functioning score of 106 (SD = 12), denoting adequate competencies at pre-exit interview.

Pre-Exit Family Investment in Children. Families averaged a total pre-exit child investment score of 9 (SD = 1), denoting a good amount of family investment in children. In addition, families with greater pre-exit family functioning invested more in their children (r = .41, p = .001).

Pre-Exit Child Social Development. Targeted 30 month olds achieved an average social development score of 41 (SD = 20) on the CBCL, denoting absence of clinical problems in socio-behavioral development.

Family Service Delivery, Family Functioning, and Child Social Development

To identify the connection between EHS family-focused service delivery (parent mobilization and linkage to community services), family functioning, and child social development, several path analyses examined the connection among baseline assessment of family needs and resources, aspirations, and family status; total EHS services delivered; pre-exit

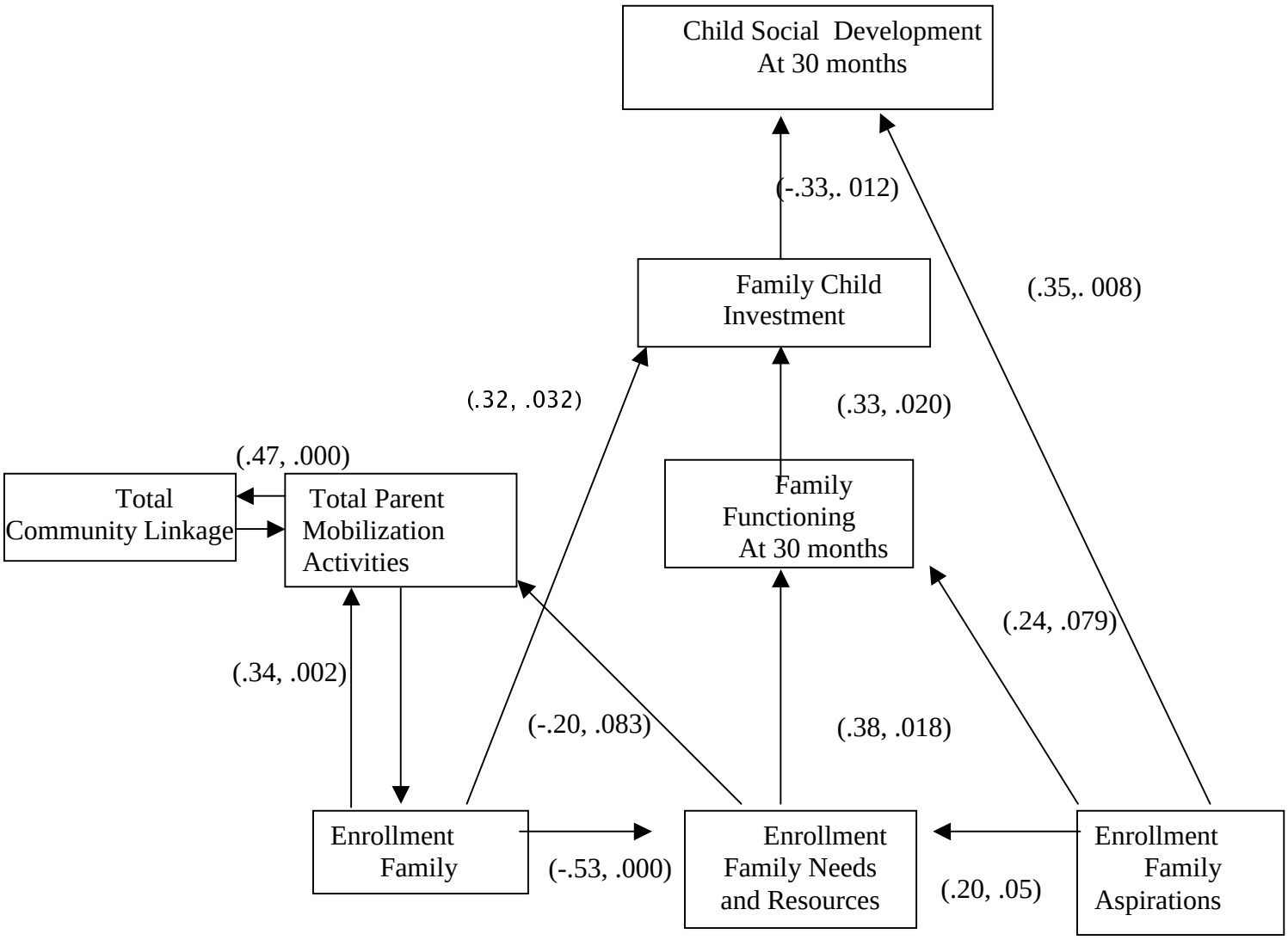
family functioning and investment in the targeted child; and the development of children's socio-behavioral problems at 30 months of age.

First, bi-variate correlations identified significant ($p < .05$) correlations between the following pairs of variables and, thereby, possible hypothesized pathways: (a) moderate correlations between EHS parent mobilization and linkage to community services (.48), family status (.45), and family needs and resources (.40); (b) a moderate correlation between family status and family needs and resources (.56), and small correlations with family child investment (.28), and child social development (.29); (c) small correlations between family aspirations and needs and resources (.28), family functioning (.28), and child social development (.29); (d) a small correlation between family needs and resources with family functioning (.32); (e) a moderate correlation between family functioning and family child investment (.42); and (f) a small correlation between family child investment and child social development (.27).

Subsequent multiple regression analyses (MRA) identified the EHS service path to family functioning and child social development (see Figure 1).

FIGURE 1

SIGNIFICANT PATH COEFFICIENTS BETWEEN EHS SERVICE DELIVERY ACTIVITIES, ENROLLMENT FAMILY STATUS, NEEDS AND RESOURCES, AND ASPIRATIONS, AND PRE-EXIT FAMILY FUNCTIONING, FAMILY CHILD INVESTMENT, AND CHILD SOCIAL DEVELOPMENT AT 30 MONTHS



Specifically, 29 percent (R^2 = .29) of *child social development* at 30 months of age was significantly predicted by family investment in their child at 30 months and family future aspirations at enrollment (see Table 7). Families who were more invested in their children had children with fewer social developmental problems while families who had more goals for their future had children with more social developmental problems.

TABLE 7
MRA CHILD 30-MONTH SOCIAL DEVELOPMENT WITH PRE-EXIT FAMILY INVESTMENT AND FAMILY FUNCTIONING, AND ENROLLMENT FAMILY STATUS, NEEDS, AND ASPIRATIONS, AND TOTAL DELIVERED EHS SERVICE ACTIVITIES (N 55)

Variable	Beta	T	Sig.
Investment	-.33	-2.6	.01
Aspirations	.35	2.6	.01
Family Status*	-.19		NS
Functioning	.01		NS
EHS Activities	-.02		NS
Needs	-.26		NS

* Immigrant family = 2, US-born family = 1
R^2 = .29, F= 5.6, p =.002

Second, 27 percent (R^2 = .27) of *family investment* in the targeted child was predicted by family status at enrollment and pre-exit family functioning (see Table 8). Specifically, immigrant families were invested slightly more in their children (M = 9, SD = 1) than U.S.-born families (M = 8, SD = 1). Families with better overall family functioning competencies invested more in their children.

TABLE 8
MRA FAMILY INVESTMENT AT 30 MONTHS WITH FAMILY FUNCTIONING AT 30 MONTHS, AND ENROLLMENT BIRTH STATUS, NEEDS, ASPIRATIONS, AND EHS SERVICE ACTIVITIES (N55)

Variable	Beta	T	Sig.
Family Status*	.32	2.2	.03
Functioning	.33	2.4	.02
Aspirations	.11		NS
EHS Activities	-.16		NS
Needs	.15		NS

* Immigrant family = 2, US-born family = 1
R^2 = .27, F=3.5, p=.01

Third, 18 percent (R^2 = .18) of pre-exit *family functioning* was predicted by family aspirations and adequacy of family resources in meeting needs at enrollment (see Table 9). Specifically, families who had more aspirations or more adequate resources for meeting their needs had better family functioning when their child turned 30 months.

TABLE 9
MRA PRE-EXIT FAMILY FUNCTIONING WITH ENROLLMENT FAMILY STATUS, ASPIRATIONS, AND NEEDS, AND EHS PARENT MOBILIZATION ACTIVITIES
(N 55)

Variable	Beta	T	Sig.
Needs	.38	2.4	.02
Aspirations	.24	1.7	.08
Family Status*	.19		NS
EHS Activities	.01		NS

* Immigrant family = 2, US-born family = 1
R^2 = .18, F=2.8, p =.03

Fourth, 38 percent (R^2 = .38) of assessment of *family needs and resources* at enrollment was predicted by family status and family aspirations (see Table 10). Specifically, immigrant families had somewhat more inadequate resources for meeting their needs while US-born families had slightly more aspirations at enrollment.

TABLE 10
MRA FAMILY NEEDS AT ENROLLMENT WITH FAMILY STATUS AND ASPIRATIONS (N 73)

Variable	Beta	T	Sig.
Family Status*	-.53	-4.2	.00
Aspirations	.19	1.8	.07

* Immigrant family = 2, US-born family = 1
R^2 = .38, F=19.3, p =.000

Last, 45 percent (R^2 = .45) of *EHS total parent mobilization* services were predicted primarily by EHS linkage to community services, family status, and family needs and resources at enrollment (see Table 11). That is, immigrant families received more EHS parent mobilization than US-born families but similar linkage to community services.

TABLE 11
MRA EHS PARENT MOBILIZATION ACTIVITIES WITH COMMUNITY LINKAGE ACTIVITIES, ENROLLMENT FAMILY STATUS, NEEDS, AND ASPIRATIONS (N 73)

Variable	Beta	T	Sig.
Linkage Activities	.47	5.2	.00
Family Status*	.34	3.2	.01
Needs	-.21	-1.8	.08
Aspirations	-.01		NS

* Immigrant family = 2, U.S.-born family = 1
R^2 = .45, F=14.2, p = .000

Discussion of Findings

The analyses revealed statistically significant and conceptually meaningful pathway relationships among psychosocial assessment of family needs and resources, status, and aspirations at enrollment; pre-exit outcomes of family functioning, family child investment, and child social development; and EHS delivery of service activities (see Figure 1). As demonstrated by these paths, EHS intervention takes place in a psychosocial environmental context far broader

than the consideration of the type of EHS program *per se*. Although it may appear puzzling that the type of EHS program (designated in this study by home visiting and family-based childcare or center-based childcare combinations) did not directly influence the proposed pathways to children's social development, it actually was not that surprising to the researchers. That is, in this study, the type of program designation based on the clustering of childcare services was related to family status at enrollment. Through this process, program designation became the extension of family assessment of needs at enrollment, and in turn guided the provision of EHS parent mobilization and linkage to community services.

Specifically, EHS family-focused services associated with the intervention objectives of parent mobilization and linkage to community resources were moderated by families' socio-cultural situation and psychosocial characteristics. The socio-cultural situation associated with economically-disadvantaged families' status designation (immigrant, U.S.-born) aligned with both family needs and resources and family goals, as assessed at enrollment, to create the psychosocial context for EHS service delivery. Through this psychosocial family context, EHS service activities, in turn, influenced family needs and resources. It was observed that at program enrollment, immigrant families had demonstrably more inadequate resources for meeting family need than US-born families. In targeting resource deficits for all families, EHS service activities used the family status as a way of better understanding culturally-based needs and as an entry point for helping families gain a sense of who they are and what they need to do in order to function well in today's society. To facilitate culturally competent service activities and meet identified need, EHS hired staff to accommodate the cultural, linguistic, and individual needs of the predominantly Spanish-speaking immigrant families.

Since service activities matched the needs and resources and goals of families at enrollment, pre-exit family functioning competencies were promoted. Through the focus on identifying and

matching the needs of family cultural life style, EHS service activities assisted families in gaining awareness of their strengths and weaknesses, the adequacy of their resources for meeting emotional and instrumental needs, and their goals for the future. Through these culturally based service activities, families gained knowledge about themselves. Thus, EHS services facilitated their pre-exit family functioning.

Further, the psychosocial context of family functioning and family status contributed to families' emotional investment and time availability for their children when children turned 30 months. Families were assisted in learning about themselves (their needs, wants, and aspirations) becoming more competent and investing more in their children.

Their pre-exit family investment in combination with their goals at enrollment became reflected in their children’s 30-month social development. This pathway highlighted children's social development as influenced by the meaning that children derive from parent-child interaction defined in this study as parental investment in their children. The pathways also highlighted family aspirations as subject to culturally-interpreted expectations of the future, underpinning parenting and life style actions, and, thereby bearing portent for children's social development. Families with lower family investment in their children or more family goals had children who demonstrated more socio-behavioral problems at 30 months than families with greater child investment or fewer goals for the future. It might be that families who set too many goals for themselves become over-extended. In turn this "over-drive" may become negatively reflected in their children's social development. However, as the children's social development at 30 months demonstrated age appropriate normative behavior, only future longitudinal investigation might clarify such effects or the effects of the EHS service delivery path upon children's future developmental accomplishments.

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ANDREYA EARNS HER HIGH SCHOOL DEGREE: THE ROLE OF EARLY HEAD START

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We met Andreya[1] in 1996, when she was 19 and living with her 1-year-old son, her mother, her 16-year-old brother, and her 12-year-old cousin. She had agreed to participate in our longitudinal case study research learning about the lives of nine Early Head Start families living in the inner core of a large Midwestern city. Like almost all the mothers served by this Early Head Start program, she was African American, young, and single. Shortly before she'd signed up for Early Head Start services, she'd also enrolled in Job Corps[2]. Though she knew very well how much her mother wanted her to finish high school, Andreya had had few models of school success to look to. Neither of the adults she was closest to, her mother and grandmother, had graduated, and by now her older brother had dropped out and was in jail. Her younger brother seemed headed in the same direction. Looking back five years later, she believes, as we do, that her Early Head Start home visitor was a central influence supporting her through the challenges that threatened to derail her as she struggled to obtain her degree. This paper describes the home visitor's pivotal role helping Andreya achieve her goal of a high school diploma.

Before Early Head Start

Andreya was 17 and in the second semester of 11th grade when she discovered that she was pregnant. She'd always adored babies and now she was in love with William, a man 11 years

[1]All names are fictitious.

[2]Job Corps is a federally funded program that provides high school education plus job training. To earn the high school degree, students must complete all high school requirements plus all requirements for their "trade" – the job-specific training.

her senior. Secretly, she'd actually wanted to get pregnant. After all, her friends had been asking her for years why she was putting off having a baby. Still, when the pregnancy test registered positive, she was terrified – mostly because she anticipated her mother's disappointment and anger. "It was like, how can I tell my mama? She was like, 'Well I got plans for you and you got dreams.'" She thought about how her mother would have felt at the high school graduation that now might not happen: "I'll be the first to graduate out of my mother's three, and she'll be happy for me and, you know, I made her satisfied; she proud of me. I thinkin' like that." Her voice dropping, Andreya recalls, "It's like when I got pregnant, seemed like I let everybody down."

She tried to continue going to school, but morning sickness and doctor's appointments added up to a lot of missed days. Finally, Andreya told the school counselor that she was pregnant. The counselor strongly recommended that she transfer to Stanton School. Andreya refers to it as "the pregnant school". It was a change for the worse. She had to take two buses, and sometimes the second bus had come and gone before the first one arrived at the transfer spot. But even more importantly, the classes didn't seem serious. She was taking 11th and 12th grade English and math, but the rest of the time was spent learning about parenting and money management. "Like I told my mama, that's not no kind of school." She dropped out. She figured that a year after her baby was born, she would return to school to earn bona fide high school degree. She didn't want just a GED.

She named the baby "Lavell" and loved him hugely. At first, William came over daily. As devoted as she was to her child and to William, however, Andreya felt cooped up. "It was just like William wanted me *not* to go back to school. He wanted me to always wait on him, depend on him." Plus, William's visits were becoming more and more irregular. Many evenings she

didn't know where he was. “It was just like, if I wait here to wait on him, I’m gonna lose out a long life. I knew I wasn’t gonna get nowhere without a education.”

As the months wore on, other problems cropped up or became magnified. Lavell, it turned out, was seriously asthmatic. Andreya often found herself at the hospital. She feared he might die. She begged her mother to stop smoking in the living room because she was sure the cigarette smoke exacerbated the child’s breathing problems. Her mother wouldn’t stop. Andreya started staying in her bedroom with the infant, towels pressed under the door so the smoke couldn’t enter.

That wasn’t the only reason she was hiding in her room. Her younger brother, Tony, and her cousin who lived with them, Kalia, were teenagers and “they think they know *everything*. Can't tell 'em nothing. There's always arguin' in the house about something.” Moreover, her mother, she thought, was very unfair, blaming her for things she hadn’t done and making her do more than her fair share of chores. Deep down, of course, she understood why her mother had such a short fuse – Patricia was exhausted from her night job as a grocery store cashier, and her sons were breaking her heart. Quintus, Andreya's older brother, had just been sentenced to a 6-year term for drug dealing. It was almost a relief to have him off the streets – in the past couple of years he’d been hospitalized twice after serious fights. It seemed Tony was set to follow in his footsteps. He’d been suspended from school for assaulting a teacher, and it wasn’t clear where he was getting the money he was spending on CDs and expensive shoes.

As if all this weren’t enough, Lavell was turning out to be a handful. He’d always been very active, afraid of little, and more than typically tolerant of pain. Now, as he grew into a “busybody” toddler, he was getting into everything and being more than a little aggressive. The steroids prescribed to control his asthma seemed to make matters worse. Andreya described him

as “hyper” and uncontrollable after every dose. Some of the arguments in the house were over disciplinary strategies. Andreya didn’t think her brother and mother should hit him so much.

The time came to make concrete plans to return to school. Andreya thought back to her elementary school years, which she had enjoyed, and then to her middle school, junior high school, and high school years, which she had not enjoyed. Her school stories starting with sixth grade feature teachers who "disrespected" her and cared little about real learning. (Her school district is in fact known for its history of poor quality). Nevertheless, finishing high school was important to her, not just for the sake of making her mother proud, but even more critically, so that she could get a steady job that would allow her to take care of herself and Lavell. She decided Job Corps would be the right choice; she could get a high school diploma plus training for a job as a certified nursing aide (CNA). At the Job Corps orientation, she told the counselor that she was very serious about getting a degree but that her son occasionally had life-threatening asthma attacks so she might have to be absent some days. Going back to school meant that she had to find child care. Lollipop Land seemed good.

The Early Head Start Years

It was soon after she’d arranged everything so she could attend Job Corps that Andreya found out about Early Head Start. The program was recruiting at a required meeting for Temporary Assistance for Needy Families (TANF) recipients about the new welfare reform rules. While standing in line to sign in, she was approached by Rickie, an Early Head Start home visitor. “How you doin’?” he asked. She answered that she was fine. “What’s your name?” he asked. She didn’t know many White men, but he seemed nice, so she told him her name. “That’s a cute name,” he noted. “Have you heard about Early Head Start?” “No,” she answered. “Are you interested in early childhood?” he asked. Of course she was. “And he was like, ‘Is it OK if I come do home visits?’” She said, “I don't mind.” She thought she knew a lot about

children from having babysat for seven years, but she also figured there was a lot more to know. Maybe he could help her learn how to handle Lavell better.

Rickie came over a week later for the first home visit. They chatted as he helped her prepare dinner. Watching a man cook put her in a very good mood. It was so odd yet so wonderful that she couldn't help laughing. She told him about her life–about the fact that she was "a dedicated mother" and a "homebody," about her strong desire to move into her own apartment so she could get away from the conflicts with her mother and younger brother and cousin, and about her plans to return to school. Over the course of the next several months of weekly home visits, they established a warm relationship. He understood that he should go easy, never pushing her to talk but being ready when she was ready. As she opened up, he was charmed by her sincerity and insightfulness, by her great love for Lavell, and by how appreciative she was of the child development ideas and explanations he shared. She was so open to new ideas, so reflective and willing to reexamine habitual ways of doing things.

She started telling him about interactions she'd had with people who "disrespected" her. In Andreya's stories Rickie heard about real wrongs, but he also thought her tendency to react strongly to every slight was counterproductive. He thought she would be happier and more successful if she could control her temper, let some things go, and speak politely even to people who upset her – especially if they were people in positions of authority. It would also help her as a mother.

As was characteristic of him, he approached the issue directly and with humor. "You know," Andreya told us one day, "I used to get an attitude about everything, the way people do me, the way they talk to me and I actually would go off on you." Quoting Rickie, she explained how he'd helped her see a better way. "Andreya," he'd told her, "I'm not trying to be in your business but you need to just let it *ride* sometimes; let it *go*." Smiling, she recalled how she

started to get mad at his comment. “And then I kind of *eased* up off of it. He's like, ‘See, you about to get mad at me, wasn't you?!’ I *was*! I was. I was about to tell him off and it's like, hold your tongue, Andreya. And he's like, ‘Just *cope* with it.’ He said, ‘You need to just lighten up a little bit.’ And I started doin' that.” Sometimes Rickie used teasing to check on how she was doing. "Have you got in any fights at school?" he asked her one day. “And I was like, ‘*Nooo*!’ And he's like, ‘Are you sure?’ I'm like, ‘Yeah! Why you ask me that?’ He said, ‘Because you got a *baaad* attitude.’"

Going to school was very, very difficult. Just getting there on time was a challenge. William had told her he would give her a ride every morning, but many days he didn’t show up. That meant she had to take one bus to the child care center to drop Lavell off, then two more to get to Job Corps. Sometimes, even though she managed to get to the child care center on time, it was hard to leave in time for the next bus because Lavell would cry when he realized she was about to go. She took to waiting until he was focused on a toy or activity, and then sneaking out.

In addition, it was hard to keep up with all the assignments. Though Andreya loved reading to Lavell and she enjoyed magazines such as *Jet*, the reading level of the school books was higher. “It's kinda hard. The books be this thick and there be five of them. And it's a whole bunch of work. You gotta do the chapter, remember all the stuff and then turn around and take a test. Some of the stuff you do forget 'cause it's a lot of stuff. It's like chapters, and it goes all the way to number 53, one of 'em. Turn around-take a test. If you miss it you have to pay for your next one.” To make matters worse, for several months the school could not provide books for everyone and students were not allowed to use the photocopying machine.

Coping with schoolwork on top of the demands of caring for an active and often-sick child (not to mention her unhappy interactions with her mother and brother and her growing anxiety about William’s on-and-off attentiveness) made her exhausted. “I’m working my tail off,” she

told us after detailing her daily routine of rising early, dressing, readying a reluctant Lavell for child care, rushing to be on time to school, running to pick Lavell up in the afternoon, making time to play with him at home, doing the housework her mother required, completing school work, and getting Lavell's things prepared for the next day. Some days studying in the evening when she was so tired gave her migraines.

Then there were all the forms she needed to fill out on time so that she could keep Lavell in child care and get the public and charity assistance she so needed. Without a car and with full days committed to Job Corps and Lavell, it was hard to get to the places where she needed to go to make the proper applications. Rickie stepped in to help. When Lollipop Land required a health form signed by a doctor, he dropped by the community health center and picked it up, saving her from having to miss hours at school. When he learned of assistance for which he thought she would qualify, he did what he could (including giving her rides) so that she could apply.

Her teachers and counselors at Job Corps, on the other hand, were not very helpful. There was one teacher who urged students to ask for help when they needed it, but when Andreya asked for additional explanation, the teacher was likely to tell her to wait and she'd get back to her. Then she would forget. Andreya understood that the teacher was overworked with too many students, but a lot of the material was hard for her, and she really needed some assistance. One time when she got stuck she asked a student who was a chapter ahead of her for help. The teacher told her not to talk during class.

What made things most difficult, however, was that the Job Corps faculty really didn't seem to understand what it meant to have an asthmatic child. Andreya didn't like to miss school, but sometimes she didn't have a choice – she had to take Lavell to the hospital. She had a breathing machine for him at home, so she only took Lavell in when it was a true emergency.

Unfortunately, that was fairly often. Sometimes while in class she would get a note from the office that someone from the child care center had called to say Lavell was having trouble breathing. When that happened, she ran out of the school as fast as she could. She didn't always stop to tell someone where she was going. One day the director called her to the office to talk about her attendance. The school counselor, Ms. Moore, was also present. She started the conversation in a sarcastic tone of voice. "It's really starting to be a bother because it's like every week you're at the hospital. This is like an everyday thing for you, huh?" Andreya tried to explain, "I said, 'Well if I could stop my son from getting sick, I would. You know, my son has asthma.'" The director told her she should find a family member who could take him to the doctor so she could come to school whether or not he was ill. "It's not that easy," Andreya told her. Her mother could take him some days, but not always, and all her aunties worked during the day. There really was no one else who could take him.

A few comments later, Andreya realized that the director and the counselor didn't understand what a child's asthma means to a mother. "I said, Wait a minute. When I first started Job Corps and I was just in orientation, I made it clear to everybody that the only reason why I wasn't going to be here if I had some important business to take care of or if my son is sick. I cannot stop him from getting sick. I can give him all the medicine in America – that don't mean he going to be well. My son's life is nothing to play with, and when they say his asthma is acting up, I'm running. What I supposed to do? I supposed to be, 'Oh while I was at school, my son died.' No. 'I was waiting on my counselor to give me a pass and my son died.' No."

Ms. Moore interjected, "'Andreya, girl, you act like you're real upset.' I said, 'I am.' I took like a deep breath, and I said, 'I'm going to tell you something.' I said, 'My son is more important than Job Corps could ever be to me in life.' I said, ' I can always come back to school, but I can't always have a son like the one I got. Can't nobody give me back the same little boy I had at

first.' And she's, ‘Well, you really...,' I said, 'No, wait a minute, listen to me,’ I said, 'And you don't think me staying up; running back and forth to the hospital and they keep telling you the same old thing, but every time you take your son home, it get worser and worser; you don't know when you fall asleep, you don't know if he's going to stop breathing in his sleep.'” She got up to leave. At the door, she turned around. “’Job Corps will play a big part in my life. I'm not going to say it's not, but my son plays a more bigger role in my life than anything. I know I need my education. But right now my son, he's my first and main priority. I can't be here when he’s sick. That's all.' And I just walked out.”

There were many days when she seriously considered dropping out. Rickie talked her out of it. When she brought up the possibility of calling it quits, he reminded her how big the stakes were. After each home visit, she would resolve to stick it out.

Andreya was 19 and Lavell was 20 months old when she realized she was pregnant again. Out of loneliness and wishful thinking that the relationship was righting itself, she'd succumbed again to William's overtures. Like the first time, more than anything, she was afraid to tell her mother. Maybe she should take Lavell with her and move to another state. Deeply distressed, she asked Rickie what he thought she should do. Rickie offered four pieces of advice: (a) she should tell her mother right away because she was probably hurting her more by not telling her than she would be if she told her the truth. Her mother no doubt knew but was waiting to hear it from her; (b) She shouldn’t move away because there were too many people in town who loved her, even if she couldn’t see it now, and she needed their support; (c) She should keep going to Job Corps because she really needed her education; and (d) She should carefully examine her willingness to be with William. Did she really think he’d be there for her in a year? In two years? In four?

That evening, Andreya confessed to her mother, “I’m pregnant.” To her surprise, her mother’s reaction was nothing like her reaction had been to the first pregnancy. ‘‘You went back to school which I didn't think you was gonna go back to school,” she said. “You in a job training that guarantees you a job. So I ain't mad at ya’.”

She returned to school three months after Keon was born. The baby’s illnesses (he too was asthmatic) made it impossible to return after two months, as she’d planned, but at least she hadn’t taken the full six months Job Corps allowed. She’d actually finished the requirements for the high school diploma before she'd had Keon. She’d wanted so much to graduate then, but the rules were that you had to finish both the high school requirements and “the trade” (CNA requirements, in her case), before you could get your diploma. So now she took CNA classes.

As before, going to school was very hard – harder, actually, now that she had *two* frequently ill children. Twice in one month Keon was diagnosed with pneumonia. That was on top of both boys’ asthma attacks. Even when both children were healthy, mornings were a scramble getting them to child care and herself to Job Corps on time. Every school morning she’d wake up at 5:30 and quickly get herself ready. Then she’d change and dress Keon and give him a bottle so he wouldn’t be fussy before he was fed at the child care center. At 6:00 she’d wake Lavell up. Often he was sleepy and didn’t want to get up; she’d have to struggle with him. Then she’d fill the diaper bag with bottles and baby food and give Lavell breakfast. Some days she was so tired she could hardly keep her eyes open.

Evenings were also hectic. Rickie once commented to us that he couldn’t imagine coming home to all the hubbub in that house and having to get children fed and settled down. (The hubbub was from Tony and Patricia and their various friends and relatives.) Andreya didn’t have a choice. Every weekday she’d come home, prepare and eat dinner, feed the children, wash dishes and mop the kitchen floor, wash soiled clothes, pack clothing changes and diapers for the

boys to have at the center the next day, watch some TV, study, read to the boys and play with them, and put them to bed. Lavell's bedtime was unpredictable–if he hadn't slept during naptime that day, he'd be ready for bed at 7:00. If he had slept, it might be 10:00.

Frequently she stayed up until 1:00 a.m. finishing chores and catching a few moments to herself. Rickie suggested ways to manage her evenings so she could get the sleep she needed. He brought her some recipes for quick dinners. Simplifying meal preparation and cleanup would surely help. She agreed that setting an earlier bedtime for herself should be a goal. Rickie had taught her the value of short-term, attainable, "everyday" goals. Before, she used to set herself grand goals and then never meet them.

She felt like she deserved some acknowledgment at school for the fact that she was "running here, running there, don't hardly get no sleep." Instead, she said, her counselor and the teachers "had an attitude" toward her. They wouldn't believe her when she told them that the buses weren't following their posted schedules – not until the counselor called the bus company and found out it was true. Worse, yet, they still didn't understand her situation as the mother of two asthmatic children. There were even financial repercussions. Bus tokens were given out first thing in the morning on Wednesdays. If she was late or absent on a Wednesday because either she or one of her children was sick, she didn't get her tokens at all. She couldn't understand why they wouldn't hold her tokens for her.

Then things came to a head. One morning Andreya woke up to Lavell's heavy wheezing and high fever. She called Job Corps to say she'd have to miss school again. At the hospital, the diagnosis was asthma and bronchitis. They had just returned home when Ms. Moore knocked on the door. Andreya let her in. Ms. Moore told her she was about to give her five more penalty points and proceed with a meeting to have her expelled if it weren't true that Lavell was sick. Andreya gave her the hospital papers and showed her the tag around Lavell's wrist.

Both had that day's date on them. Ms. Moore seemed unconvinced; she continued talking about what she was going to do to have Andreya permanently dismissed for poor attendance.

Andreya looked Ms. Moore in the eye, "Well Ms. Moore, I ain't got no reason to lie and I wouldn't lie on my kid anyway if he wasn't sick." "When are you coming back to school?" Ms. Moore asked. "When my son get better," Andreya replied. And then she conveyed what she'd conveyed before: "I can always come back to Job Corps but I can't always have another son, not like this one. So therefore Job Corps ain't important to me right now."

Lavelle recovered and Andreya went back to school, but the staff's suspiciousness toward her weighed on her. Again she told Rickie she wanted to drop out. He asked if she'd mind if he called Ms. Moore. She told him to go ahead. We know that in the phone call he made the next day, he explained his role in Andreya's life, told Ms. Moore that it was absolutely true that Andreya's children suffered from fragile health, and assured her that Andreya was doing everything in her power to complete the CNA training–that she was serious about earning the diploma and was not making up excuses.

Suddenly (or so it seemed to Andreya), Ms. Moore started giving Andreya her bus tokens even if she couldn't come in on a Wednesday. She told her not to worry if she had to be at the hospital, and made efforts to buoy up her spirits. Andreya's account reflects her own commitment to school, her stress, and Ms. Moore's new support: "And I just keep on thinking about what it was gonna be like if I didn't get up and go to school everyday. It really irked me when my kids got sick and I couldn't go to school and it was like it put me more behind. And I felt like the more and more I try to go forward, I'm being pushed back, or I'm going in a circle and Ms. Moore was like, 'You need to stop putting yourself down like that. If you stop telling yourself that, you can get ahead.'"

The next time we saw Andreya, about five months later, she was the happiest we have ever seen her. She and the boys had moved into their own apartment, a two-story, two-bedroom townhouse in a clean, attractive new public housing project. She'd also graduated. Her description of graduation day stands out in its animation and joy. Because of all the missed days, it had taken a couple months longer than originally planned to complete all the CNA requirements. But she'd done it and she'd walked across that stage. She'd gotten her hair and nails done and worn her best dress and high heels. When her friends saw her, they'd teased, "We thought you was going to come to the graduation in some jeans and t-shirt!" She'd shot back, "Yeah, right! This is the NEW IMPROVED ANDREYA!!"

To our question, "Is your mother really proud?" Andreya nodded, "She is. That's all she tells me, 'I'm so proud of you and that day at graduation.'" Lavell was also proud. When he saw his mother approach the stage, he ran up, too. The two walked across hand-in-hand while the audience chuckled and cameras flashed. Everyone's excitement over his mother's accomplishment was infectious. "Lavell was happy hisself and he kept on saying, 'Mama, I love you! I love you, Mama!"

Reflections

In one of our conversations two years later, Andreya reminisced, "There's a lot of times I wanted to quit Job Corps, but Rickie talked me out of it." Looking back, we know that the barriers were huge. For sure, her mothers' and grandmother's unflinching pressure and support had served as positive motivators, yet they themselves were models of teenage motherhood and school failure. Many days, distress over her failing relationship with William, irritation with ongoing family conflict and noise at home, and worry over Lavell's behavior and both children's health made it more than difficult for her to study. Economic hardship exacerbated all of these problems by creating heightened tensions among all family members. Moreover, academic work

just did not come easily to Andreya – a predictable fact given her family conditions and what we suspect about the quality of her prior schooling. Perhaps it was for these reasons that she was especially vulnerable to the hostility she initially perceived from her Job Corps counselor and teachers.

Andreya understood, as we did, that Rickie's contributions to her graduation went well beyond his words warning her of the consequences of dropping out. Over the two years she'd been in Early Head Start, he'd taught her how to manage her temper and her time, encouraged her to set and work toward attainable goals, helped her navigate the social service system, served as her advocate, bolstered her self-confidence when it flagged dangerously, and provided gentle advice regarding her relationships with her children, her mother, her brothers, and her children's father. All of these approaches had had direct or indirect impacts on her eventual success in becoming the only one in her family to graduate.

Andreya remembers once getting teary during a home visit. It was shortly before Lavell "aged-out" of Early Head Start. She was thinking how grateful she was to Rickie. Rickie noticed her eyes watering, and asked if something was bothering her. "I ain't never had nobody before who helped me out like this," she said quietly. His reply shared the credit with her, "Andreya, I help those who help themselves."

THE CHILD'S EXPERIENCE IN A MONTESSORI EARLY HEAD START PROGRAM

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Introduction

This paper illustrates the development of an approach to understanding program processes in a center-based Early Head Start (EHS) program using both quantitative and qualitative methods. The data we discuss here are derived from two studies that were pursued in parallel as part of our local research in the national evaluation of Early Head Start. The first was an inquiry into child responses to classroom environments using teacher reports, the second an ethnographic study of the Early Head Start classroom environments and the meaning of the same to families and children. These studies were developed as distinct approaches to understanding program processes, but we soon realized that there would be significant opportunity to focus our attention on common areas of concern as well. Although there are different ways to combine these approaches, here we will illustrate them through the use of case studies.

Understanding individual participant response to programs and services is increasingly recognized as an important aspect of study in early childhood intervention research (Emde, Korfmacher & Kubicek, 2000; Hauser-Cram, Warfield, Upshur & Weisner, 2000). Examining outcome differences between a treatment and comparison group provides only a narrow perspective on the value and meaning of program services for families and communities. It ignores the complexity of individual participant response to an intervention over time and avoids

a consideration of factors within participants' histories, environments, and cultures that may mediate their response to the program. Similarly, outcome studies commonly treat the program as stable, with a lack of attention to features within the program that may change over time. Focusing on program processes and participant experience of these processes allows a greater understanding of the intervention as it exists in the daily life of families.

Typically, the parent is the gatekeeper to the family and the target of much of the intervention, so understandably most process research has focused on the parent's response to the program services (Emde et al., 2000). In most cases, however, young children are also participants in the intervention, and understanding their experience is also important. This is not often done, as measuring a child's experience and engagement in intervention services is difficult. Young children cannot be directly queried about the meaning they ascribe to program services, so their engagement must be inferred from their attention and behavior toward program activities and objectives. From the childcare literature (Howes & Smith, 1995; Ridley, McWilliam & Oates, 2000) we know that children vary in how they engage and respond to program practices and a center-based environment, but it remains a complex task to disentangle child maturation, initial temperament, and cognitive abilities from program response. Few studies have examined the young child's adaptation to a day care environment over time (see, for example, Fein, Gariboldi & Boni, 1993).

Qualitative or ethnographic methods are also possibilities for examining child program experience. While there are some reports in the literature using qualitative data to explore the meaning of interventions to parents and program staff (Gilkerson & Stott, 1998; Nauta & Hewett, 1988), these approaches have generally not been used to explore the same issues for children, in no small part because qualitative researchers tend to rely on interview data, which cannot be collected from infants and toddlers. Yet, the strengths of qualitative approaches in

exploring the core issues of meaning and experience are well recognized. Calls for combining the two approaches are increasingly heard in the field of preventive and early childhood intervention (Hauser-Cram et al., 2000; Freel, 1996; NIMH, 1993).

A Montessori Early Head Start Program

Family Star is a full-day, center-based EHS program that uses a Montessori curriculum modified for the cultural make-up of the community it serves, a largely Hispanic neighborhood in Northwest Denver. The program is directed towards promoting child individuality, social competence, practical and intellectual skills, and a curiosity in learning in an environment that emphasizes safety and appropriate opportunities for experiencing sensory stimulation and activity. By structuring the child's classroom environment, and by promoting attention and interest in activities and materials, the program hopes to provide a sense of self-direction in children that will then be taken into the life of the family. In this sense, the child becomes the gatekeeper for promotion of strengths, which makes the experience of the child in the classroom central to understanding the value of the program to participating families.

At the beginning of our research, there were two kinds of program classrooms: Infant classrooms, known as Nidos (nests), and toddler environments, known as Infant Communities (ICs). Throughout the period of our research, the program experimented with various models and new classroom configurations. Among these was a non-transitioning "Organic" classroom, which started as a Nido and then, as the children aged, became an IC. Also developed was a Bridge Program, which is intended to introduce older children (approximately 30-36 months) to more advanced Montessori materials. There were three Nidos and three ICs when the program opened in 1997. A fourth IC was soon added to accommodate additional children, and one of the original three Nidos was the organic classroom, which became an IC as the children there became toddlers. The Bridge program, when it opened, became the 8th classroom. Thus, at the

conclusion of our research with the program, there were two Nidos, five ICs, and the Bridge program. With the exception of the children in the organic classroom, who did not transition to a new classroom, the children made at least one transition (from the Nido to the IC) during their time in the program. Many children also made a transition from the IC to the Bridge program.

Child Program Experience

Two methods were used to examine the child's experience. Teachers in the classrooms completed weekly rating forms that assessed their perspective on the child's reaction to the classroom environment, including physical materials, adults, and peers. In addition, an ethnographer (Dr. Spicer) made observations of the classroom on a regular basis and visited select families in their homes to discuss their thoughts about the program in more detail.

Teacher Rating Forms

Classroom teachers completed a report of the child's experience in the classroom. We identified activities, behaviors, and events used by teachers to track a child's engagement in the classroom. Items were adapted from the Infant Behavior Questionnaire (Rothbart, 1981), a measure of child temperament. Additionally, program staff communicated to us the importance of opportunities in early morning and late afternoon for teachers to communicate with parents about the child's experience and help bring Montessori principles into the home. For this reason, five items were created to measure the parent's interaction with the teachers (e.g., "How much did you talk to the child's parent(s) at the end of the day?"). In the final version, teachers rated each child on 26 items using a seven-point scale once a week for a particular day, varying from week to week. If a teacher did not see the child in the situation described in the item, they coded the item as not applicable.

To assist in data reduction, factor analysis was used as a tool to explore how initial groupings of the items (based on discussions with program staff) fit with patterns of responses.

Six major factors were identified, accounting for 68 percent of the variance. Reviewing items that loaded on these factors, five logically-derived subscales were developed that seemed to capture well the beliefs and ideas that emerged from the initial discussions with teachers and program directors:

1) Positive Classroom Engagement (7 items): Child orientation and attention to objects, sense of pleasure in activities, and positive social interactions with peers.

2) Distress & Upset (4 items): Child crying and fussing during transition times or daily routines, such as eating, toileting, and napping.

3) Tantrum & Fighting (4 items): Strongly adverse reactions when limits were set or when interacting with peers.

4) Child seeks help (3 items): Child use of teacher for comfort, help, or company

5) Parent Seeks Help (5 items): Parent request assistance about child's behavior or development.

Children varied considerably in the number of individual ratings that they had over their participation in the program, since their level of participation in the program varied. Although the average level of participation was 22 months, this could range from 0 days (for children randomized into the program but whose families elected not to continue participation) to 34 months (for children who entered the classroom at 2 months of age).

On average, each child received approximately 54 ratings over time from their teachers. For the illustrative purposes of this paper, we selected children who had at least 60 ratings, or approximately two a month for their time in the program. From this group, we selected two children on whom we also had substantial data from our ethnographic work. Given the highly selected nature of this sample, it is important to emphasize that data from these children may not represent average or modal data from participants in the EHS program. The cases have been

selected for discussion in this paper because they demonstrate some of the kinds of responses that children can show to this program and because they illustrate the possibilities of combining qualitative and quantitative data to understand services for infants and toddlers.

Ethnographic Methodology

There were two principal components to the ethnographic research reported here: (a) extensive participant-observation in the classroom environments, and (b) detailed case studies on the impact of the program on 12 families. We had two main goals in designing this ethnographic research: First, we wanted to understand the program's Montessori intervention as it was actually delivered and, second, we wanted to know what the intervention meant to parents and children living in poverty.

Participant-observation in the classrooms of the Montessori Early Head Start Program began when the program opened in early 1997 and continued through the end of 2000, when the majority of children had moved on to other programs. Over the first year of the research, the ethnographer would regularly spend one morning and one afternoon in each classroom before moving on to another classroom. In the second year, these observations were scaled back to one morning in each classroom. The focus of the participant-observation work in the classroom was on the child's experience of the Montessori curriculum as it was implemented in particular classrooms.

The ethnographic case studies component of the research was designed to more fully illuminate the families' experiences of the intervention and especially the ways in which the Montessori intervention had been brought to their homes (either through the child bringing home behaviors learned from the classroom, or through family members absorbing information through contact with staff). Families were recruited directly by the ethnographer based on his familiarity with them and their children from his participant-observation work. Participating

families were visited three times over their child's second year of attendance at the program. The home visits that formed the basis for these case studies were fairly open and unstructured, although all of them involved some discussion of the child's development, family life, and their experience with the program. These visits were audiotaped and the ethnographer made detailed notes on the topics and themes that emerged during each visit.

Case Studies

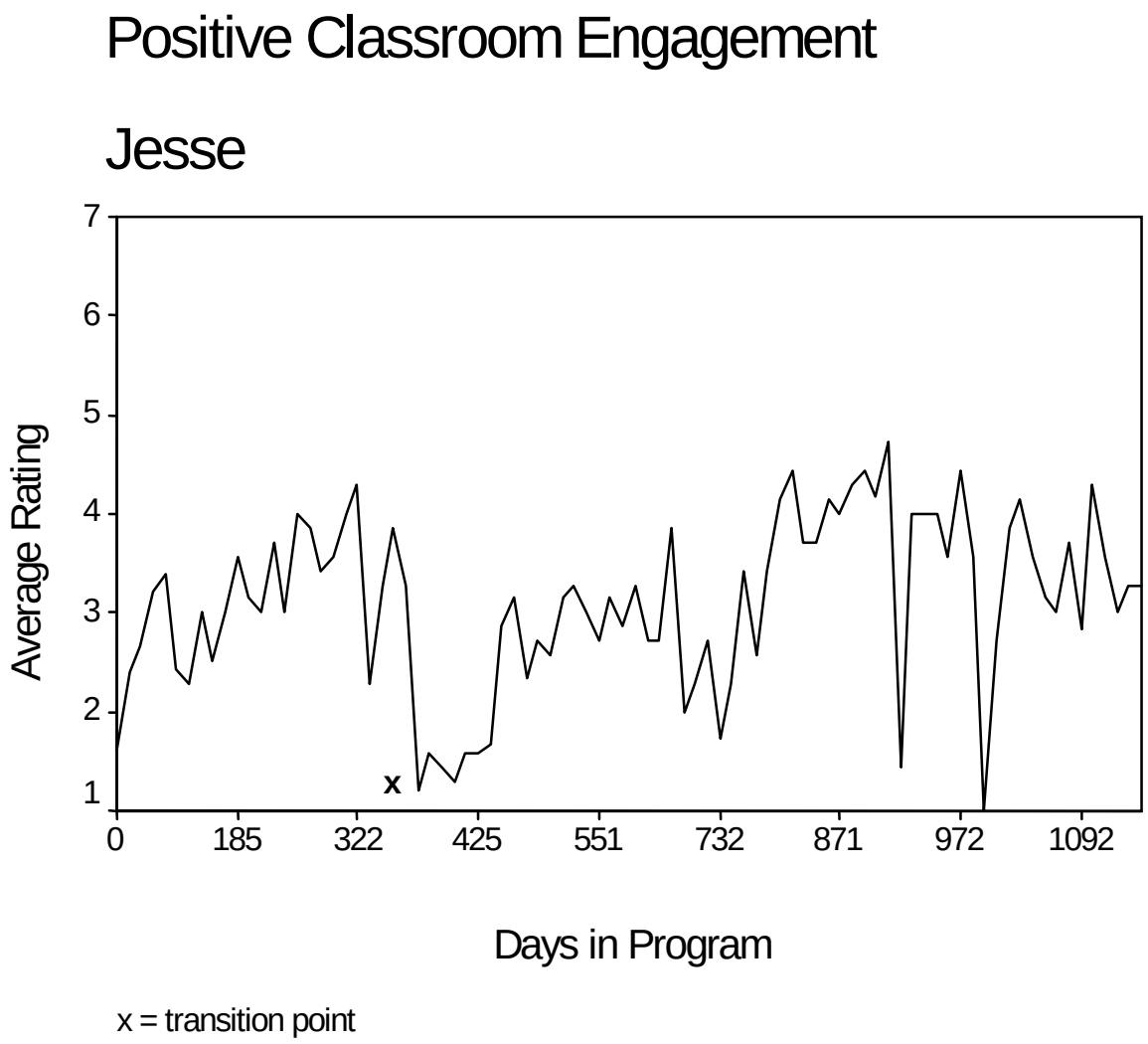
As we have already noted, the two components of research on program process discussed here—quantitative ratings of child and family experiences and ethnographic research on the same—were pursued somewhat independently of each other, but the shared focus on program process and the experience of the intervention permits us to combine data in several ways. For this paper, we present the data at the level of individual cases, using two children from the subset of 12 families that were included in the ethnographic case studies.

To protect the confidentiality of these two cases, we have assigned them the pseudonyms of Jesse and Peter. Jesse and Peter began in the same Nido, but transitioned to different IC classrooms. Our presentation strategy in each of these areas is to first present data from the teacher ratings of these children and then to present data from the ethnographic work, in both the classrooms and in the home visits, that aids in our interpretation of the quantitative findings. We have deliberately selected examples where our ethnographic work would illuminate the patterns seen in the quantitative data.

Positive Classroom Engagement

Figure 1 shows teacher ratings of Jesse's attention and orientation to classroom materials and positive interaction with peers over time. What is evident is a generally positive trend in Jesse's ratings on this dimension, suggesting a gradual increase in his engagement with the

FIGURE 1


Positive Classroom Engagement
Jesse
Average Rating
7
6
5
4
3
2
1
x
0
185
322
425
551
732
871
972
1092
Days in Program
x = transition point

classroom environment. His upward trajectory, however, is punctuated by a sharp drop at his transition from the Nido to the IC, noted by the "x" on the graph, which is followed by a rebound and continued improvement in ratings. This pattern suggests that moving to a new classroom was difficult for Jesse, but that the difficulties were transient.

Several aspects of this quantitative data gain support in our ethnographic work. Our participant-observation work in the EHS program's classrooms underscored for us generally the significance of the classroom transition in children's experience with the intervention. While not always a disruptive influence on children, it was one of the most significant changes they would encounter in their time in the program, despite the careful and gradual procedure program staff developed for introducing the children to their new environments. When we began to observe patterns in the teacher ratings such as those evident in these graphs, we were confident that these reflected real changes in the child's reaction to their new environments, rather than simply being an artifact of the shift to a new rater (an alternate possibility we considered).

Indeed, as one of the first and youngest children in his Nido, Jesse was a favorite of the classroom staff there and was generally greeted with a great deal of enthusiasm when dropped off in the morning. Jesse did not enjoy the same amount of enthusiasm among the staff in the IC—a fact that was evident not only in our classroom observations, but also in comments his parents made to the ethnographer in his conversations with them. Our observations in Jesse's IC and our conversations with his parents suggest that the transition to the IC marked a loss of the special attention he had been receiving in the Nido. Thus, it is not surprising to us to see that the transition to the IC was somewhat stressful to him. Our subsequent observations of him in the new classroom indicate that he was eventually able to adjust well to his new surroundings after this initial stress, but as we shall see, there were some important differences in his adaptation to the new environment.

Negative Emotions, Tantrums, and Fighting

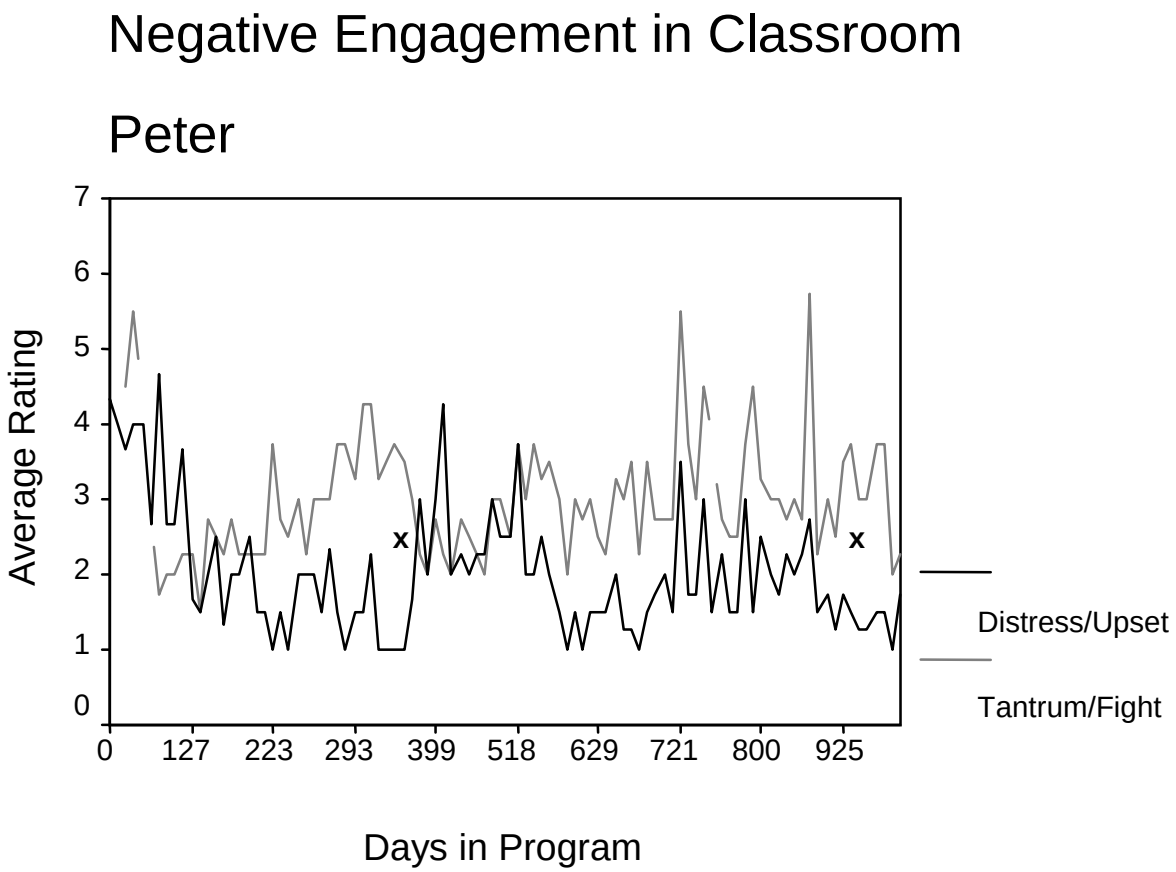
To illustrate the more negative dimensions of distress/upset and tantrum/fighting, we use a graph from Peter, who shows an interesting pattern in his negative emotional responses to the classroom (see Figure 2). The picture of Peter that emerges from these graphs is of a more challenging child whose expressions of negative affect did not significantly decrease over time, as one might have been hoped.

Teacher management of negative affect and aggressive behavior is a major focus of this center-based EHS program, which emphasizes the use of gentle verbal control of children wherever possible and the redirection of children's attention when conflicts develop over the use of particular materials. However, our ethnographic work in the classrooms made clear that certain children did not respond well to these more subtle techniques, challenging the teacher's capacity to control them and maintain an orderly environment for the other children. And our ethnographic observations with Peter, both in the classrooms and in his home, suggest that, indeed, this was the case with him. He showed a tendency toward aggression with other children in the classroom (and his siblings in the home) and he would often react negatively when frustrated. Throughout our research, Peter remained a somewhat challenging child—both for his mother and for classroom staff—and this appears to be reflected in his teacher's ratings of his behavior.

Child Seeks Help

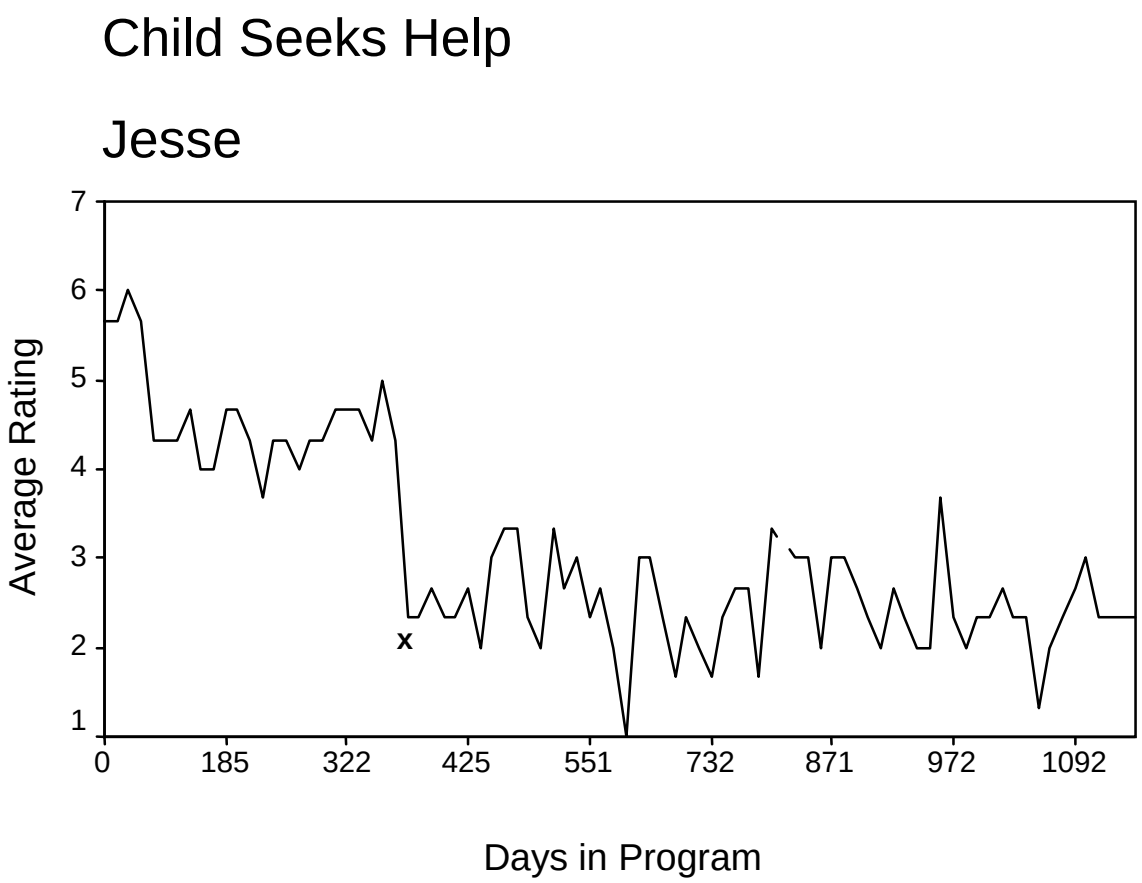
Figure 3, which plots Jesse's use of his teachers, illustrates one pattern of how children in this program use their classroom teacher for guidance and emotional support. There is evidence

FIGURE 2



x = transition point

FIGURE 3



x = transition point

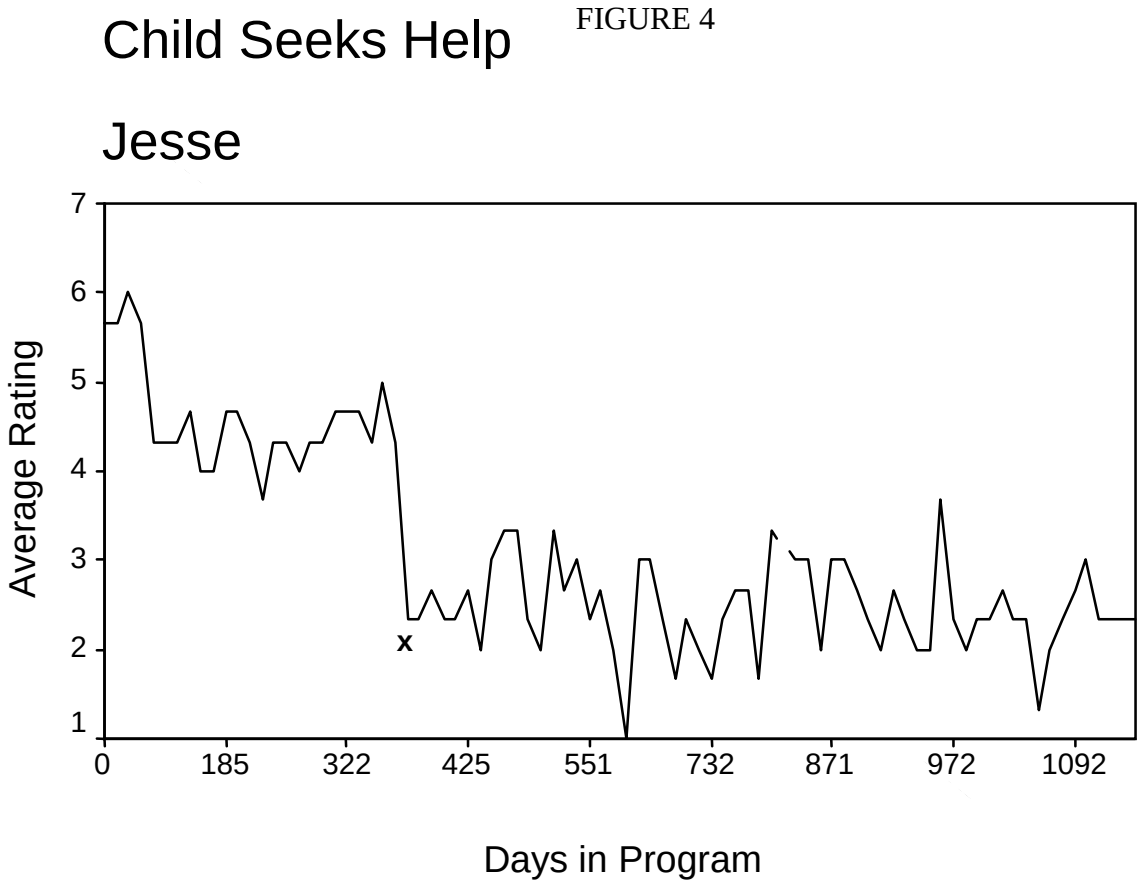
that Jesse was developing independence in the Nido classroom, but the graph also suggests that Jesse appears to have used his IC teacher for help or comfort much less than he had used his Nido teacher. As we have already noted, our ethnographic work underscores the special relationship that Jesse had with the staff in his Nido, which did not continue in his relationships with the IC staff. In part, this appears to explain the difference in Jesse's use of his teachers between the Nido and the IC.

But it is also important to note that the loss of Jesse's special relationship with the teachers of his Nido was not necessarily a bad thing from the perspective of his developing independence. Indeed, some program staff expressed concerns that the affection of Nido staff toward Jesse kept them from encouraging his independence to the extent emphasized by the program's Montessori model. Thus, it may well be the case that Jesse's decreasing reliance on his IC teachers was a desirable outcome of the program and may, in fact, have been facilitated by his relatively more distant relationship with the teachers of his IC. While we cannot be sure to what extent Jesse's decreased reliance on his teachers in the IC was a function of normal development (no single case could demonstrate what is normative in this context), our ethnographic work in the program and with Jesse's family underscores the extent to which the patterns evident in the ratings of Jesse's classroom behavior may make sense in the context of the program's approach to encouraging independence.

Parent Seeks Help

Figure 4 documents parents' use of teacher for Peter. Notable are abrupt shifts upward at her child's transition from the Nido to the IC and downward when he moves from the IC to the Bridge. Thus, it appears that Peter's mother felt more comfortable seeking out the IC teacher for guidance and support about Peter's development.

FIGURE 4



x = transition point

Our ethnographic work in Peter's classrooms confirms that Peter's mother spent more time in his IC visiting with the teacher than in the other two classroom environments.

Furthermore, observations of actual interactions between the two suggest that communication between them was generally quite easy and comfortable. In contrast, the relationship between Peter's mother and Nido staff, while not unpleasant, was definitely more guarded and strained. Further confirmation that this was the case comes from one of our ethnographic home visits, when Peter's mother declared that she felt she could talk to his IC teacher about virtually anything—an opinion which she did not express about the teachers in either of his other two environments.

Discussion

The cases presented demonstrate the way different children experience a high-quality, theoretically-driven early childhood environment. There is an expectation in the program model's theory of change that children will show increased orientation and attention to their environment, ability to work independently on developmentally-appropriate activities, and better affect regulation (shown in particular by decreases in child distress and upset during daily transitions and routines). While one of the children presented here does show this pattern, the other child does not, suggesting that our complementary data-gathering approaches may well be capturing meaningful variations in child experience of this Montessori program.

Examining individual cases highlights aspects of experience that deserve further attention. One example is the importance of <u>transitions</u> between classrooms for children, such as the move from the infant to the toddler classrooms. Marked (if temporary) decreases in the child's classroom engagement were often observed by both the teachers and the ethnographer. Our combined data also helped us to appreciate that these transitions can have a significant impact

not only on children but parents as well, who can develop special relationships with one set of classroom staff that are not easily transferred to the staff of a new classroom.

Both approaches to data collection described here relied on different forms of observation. Collecting data from teachers offered a unique and powerful way of following children over many different points in time from the perspective of observers who knew the children in-depth, creating running records of child progress. But teacher ratings exist in the context of program philosophy, values, and daily operations, which would be largely unarticulated without concurrent ethnographic work. The value of ethnographic observation is that this context can be explored, to gain greater understanding of how it influences the ratings and the child's response to the program environment.

It is important not to over-interpret these unfolding snapshots of the children's lives in the program. It can be difficult to disentangle program effects from other influences, such as normative child maturation in these skills, or environmental or life circumstances outside of the program. Viewing results from classroom ratings and observations in the context of the outcome evaluation—including independent observations of the child's abilities and behaviors conducted both in home and laboratory settings—will be critically important in interpreting the meaning of children's trajectories.

Linking analyses of program process to outcome data will inevitably involve aggregation, moving beyond the level of the individual child to look at children's experiences in the classroom environments more generally. The cases discussed here, however, detail some of the ways that ethnographic and quantitative report data can be used to tell more satisfying stories

about children's experiences of an intervention than would otherwise be the case using a single method alone. As such, these cases illustrate the very real promise of a multimethod approach to the understanding of program process.

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BEVERAGE, FRUIT AND VEGETABLE INTAKES BY EARLY HEAD START-ELIGIBLE MOTHERS AND THEIR CHILDREN

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The nutritional quality of foods served to children in Early Head Start (EHS) center programs can readily be assessed and regulated. However, in home-based programs oversight of nutritional quality is more difficult for several reasons. For example, home visiting programs tend to focus on the quality of the mother-child relationship, and not how to make healthy food choices. Nevertheless, weekly visits by EHS staff could affect diet quality, because mealtimes are a key opportunity for mother-child exchanges.

Good health and adequate food intake is crucial for normal physical and cognitive development of all children under three years of age, but low-income families are at high risk for poor nutritional status (Ruston & Kirk, 1996). Foods of special concern to the health status of Early Head Start families are beverages, fruits and vegetables. Milk is especially important as the main source of calcium for children's development and for mothers to reduce risk of osteoporosis. Because soda often replaces milk as a beverage, soda can negatively affect nutritional status (Ballew, Kuester & Gillsepie, 2000; Harnack, Stang & Story, 1999). Soft drink consumption has dramatically increased in the last decade and is thought to be one of the factors associated with development of obesity. Likewise, fruit juice, although a good source of vitamin C, can also be easily over-consumed, because of its sweet taste and convenience. High intakes of fruit juice can lead to diarrhea in young children and sometimes juice replaces milk consumption.

Health professionals promote the increased intakes of fruits and vegetables because of the inhibitory effects on chronic diseases like diabetes, stroke, obesity and some cancers (Steinmetz,

& Potter, 1996). Perhaps due to limited money for foods and lack of knowledge, limited income families eat less fruits and vegetables compared to middle and high-income families (Anderson, Bybee, & Brown, 2001). In Michigan only 26 percent of women with income less than $10,000 reported eating the recommended five servings of fruits and vegetables a day (Michigan Department of Community Health, 1999).

By three years of age, children usually eat meals and regular foods with their families. Children's behaviors are determined in part by modeling the behaviors of adults. For this reason, and because diet quality is crucial for good health, we examined the diet quality of the EHS research project families and their controls. Two aspects are reported here: (a) the beverage consumption of mothers and their toddlers, and (b) the fruit and vegetable consumption and intentions of mothers.

The participants were 148 mother-child pairs from a medium size city in Michigan who were eligible for Early Head Start. Interviewers obtained 24-hour dietary recalls of each mother and toddler by interviewing the mothers using the USDA multiple pass method. Heights and weights were self-reported by mothers. Interviews took around one to two hours and mothers were paid $20.00 for each interview. Dietary data were entered into Nutritionist Pro (software from Food Bank, 2001) to assess nutrient intakes and servings of food from the USDA Food Guide Pyramid food groups. Amounts of beverages were determined including milk, 100 percent fruit juice and soft drinks. SPSS (Statistical Package for the Social Sciences, Version 10.0) was used for statistical analyses.

Eighty mother-toddler pairs were in the EHS program group and 68 pairs were in the control group. Because there were no differences between groups for food intake, data were combined. Around 77 percent of mothers were Caucasian American, 15 percent African American and the remainder were from other ethnic groups such as Hispanic, Native American, Vietnamese and

Biracial. About 70 percent of mothers reported that the food intake on the day they were interviewed represented their usual meals and snacks. This was 76 percent for their toddlers. Around 30 percent of mothers and 39 percent of toddlers used dietary supplements. The average Body Mass Index (BMI= kg/m2) of mothers was 27.2; with 26 percent overweight (BMI 25-29.9) and 33 percent obese (BMI-30).

Mothers drank twice as much soda as milk (25 fl oz vs. 12 fl oz, respectively). Around 70 percent of mothers drank 8 fl oz soda compared to 39 percent of mothers who drank 8 fl oz milk, equal to one serving from the dairy group. Whole milk was consumed most frequently. Sixty-two toddlers drank 100 percent fruit juice (12-11 fl oz) and 22 consumed 12 fl oz, which is the level of excess intake according to the American Academy of Pediatrics. Most all toddlers (n = 133) drank milk (14-11 fl oz), and 45 also drank soda (8-5 fl oz).

Findings from three prior interviews (baseline, 14, and 24 months) showed a low incidence of mothers or toddlers consuming even one serving of fruits or vegetables. For example, at 24 months, only 39 percent of mothers consumed one serving of fruit and 70 percent consumed a serving of vegetables, including fried potatoes. At 36 months, 87 percent of mothers answered that eating fruits and vegetables was very important for their health, but only 22 percent reported that they usually ate at least two servings of fruits, and, 35 percent, at least three servings of vegetables a day. Although most mothers (N = 111) reported that they ate less than two servings of fruits or less than three servings of vegetables daily, most also reported intending to eat more in the near future.

Implications

These results give health professionals some direction to address the dietary quality of low-income mothers and their children. Furthermore, these findings illustrate an area of opportunity for policymakers to increase the synergetic effectiveness of the EHS program by including some

nutrition education. For example, Project FRESH, a food and nutrition education collaborative between the Women, Infants and Children (WIC) program and county Extension offices, is available in most states during the summer to help low income families eat more fruits and vegetables. Project FRESH offers mothers on WIC a $20.00 coupon redeemable at farmer's markets for produce. Only 12 percent of the EHS research project mothers had participated in Project FRESH. For the large group of mothers who intended to eat more fruits and vegetables, nutrition educational programs, such as Project FRESH, could be quite beneficial. More active promotion of food and nutrition related programs, integrated with EHS, could provide support to help limited income parents improve their food choices and health.

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COPING STRATEGIES OF LOW-INCOME MOTHERS: STABILITY AND CHANGE OVER THREE YEARS

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This study examines strategies for coping utilized by low-income, high-risk families. Stress has consistently been shown to impact the quality of relationships within the family (Webster-Stratton, 1990), which has been linked to child developmental outcomes. Low-income families enrolled in Early Head Start (EHS) and other prevention programs are generally considered at high risk for living in stressful environments and, in turn, for poorer parenting. Family coping strategies can potentially strengthen or maintain family resources that serve to protect the family from stressful situations. In this study, maternal reports of service use, economic need, and social resources were used to predict individual differences in the level of and change in coping behaviors over time, and EHS program participation was examined as a moderator of relations between baseline characteristics and change in such strategies.

Method

Sample. The sample for this study consists of 152 mothers and their infants participating in an ongoing longitudinal study of children eligible for Early Head Start in Jackson, Michigan. Seventy-eight of the families were not part of the EHS intervention, and 74 families were EHS participants. Mothers averaged 22.3 years of age (SD = 4.9) and mean income was $9,090 (SD = $6,419). The majority (76 percent) of the sample was Caucasian, 18 percent reported being African-American, and the remaining 7 percent of the sample reported being of other ethnicities. Forty-five percent of the sample reported not having completed a high school diploma at enrollment, 34 percent reported having completed high school or a GED, and the remaining 21

percent reported having attended some college (with three people having completed at least a two-year program).

Procedure: Maternal reports of coping strategies were collected at four points in time: at the time of enrollment (child age M = 4.8 months, SD = 3.61) and when the child was 14, 24, and 36 months old. All predictors used in the analysis were assessed at enrollment.

Measures: Coping. The Family Crisis Oriented Personal Scales (F-COPES) is designed to measure problem-solving behaviors and attitudes of families (McCubbin, Olson & Larsen, 1987). One subscale measures cognitive reframing (8 items, alpha = .68), and three subscales measure support seeking from: (a) family and friends (6 items, alpha = .76), (b) neighbors (3 items, alpha = .73), and (c) service providers (3 items, alpha = .64) (McKelvey, Schiffman, Fitzgerald & von Eye, in press). There were no significant differences between the program and comparison group on coping at enrollment.

Measures: Predictors of individual differences in coping (Schiffman et al., 2000):

1) Emotional support: The degree to which mothers report having someone to talk to them, provide support, take care of them when they are sick, provide encouragement, and have fun with them (3-pt. scale).

2) Social conflict: Count of the number of problematic social relationships reported, potential range of zero to five.

3) Public assistance: Count of public assistance programs, including WIC, TANF/AFDC, SSI, food stamps, Medicaid, rent subsidy and assistance with bill payment

4) Formal support services: Count of support services used by the family, including EHS, FIA, Health Center programs, MSS/ISS.

5) EHS program participation (yes/no).

There were significant differences between program participants and non-participants at enrollment on two of the measures: social conflict and formal support services. Families

participating in EHS reported higher social conflict (M = 1.31) than non-EHS families (M = .94, $p < .05$). Furthermore, families in EHS reported higher formal support (M = 1.97) than non-EHS families (M = 1.19, $p < .01$). This would be expected given that EHS participants would be the recipients of one additional service (EHS). There were no other differences between the groups at baseline.

Results and Discussion

Hierarchical linear modeling (HLM; Bryk & Raudenbush, 1992) was used to examine relations between coping strategies and predictors measured at enrollment. Individual growth curves were represented by: (a) an intercept (level of support seeking at 36 months), and (b) a slope (linear rate of change). These estimates were used to derive an average growth curve. The average intercept and slope subsequently became the dependent variables, and predictor variables were entered to account for individual differences in each parameter. Each predictor was tested separately. To assist in interpretation, effect size r estimates are also included: .10, .30, and .50 indicate small, medium, and large effects, respectively (Cohen, 1988). Significant results are presented in Table 1.

Cognitive reframing. By the 36-month assessment, mothers reported increases in cognitive reframing over time regardless of EHS participation. Differences in the level of cognitive reframing were predicted by social conflict, with mothers who reported having more conflicted interactions also reporting less reframing. Differences in change in cognitive reframing were predicted by an interaction between social conflict and participation in EHS. Mothers who participated in EHS used the reframing strategy more consistently than non-EHS mothers,

TABLE 1
PREDICTORS OF MATERNAL COPING

Parameter	Effect size
Cognitive Reframing	
Level	--
Baseline social conflict	-.20**
Linear change	.28**
EHS program participation	.09
Baseline social conflict	-.16 [t]
Baseline public assistance	-.10
Baseline social conflict x EHS program participation	.20**
Baseline public assistance x EHS program participation	.17*
Seeking Support from Family and Friends	
Level	--
Linear change	.08
EHS program participation	-.04
Baseline emotional support	.16*
Baseline social conflict	-.16*
Baseline emotional support x EHS program participation	.17*
Baseline social conflict x EHS program participation	.17*
Seeking Support from Neighbors	
Level	--
Linear change	.00
EHS program participation	-.18*
Baseline formal support	.14[t]
Baseline formal support x EHS program participation	-.17*
Seeking Support from Service Providers	
Level	--
EHS Participation	.20*
Baseline coupled	-.21*
Baseline coupled x EHS program participation	.21*
Linear change	.00

Notes: EHS = Early Head Start.

[a]Effect sizes cannot be negative. Directional sign is included to facilitate interpretation, where negative effect sizes in LEVEL represent lower levels at enrollment than at 36 months, and in LINEAR CHANGE represent decreases over time.

[t]$p<.10$. *$p<.05$. **$p < .01$.

regardless of their degree of social conflict. In addition, change was predicted by an interaction between receiving public assistance and participation in EHS, such that mothers who participated in EHS showed consistent increases over time in use of cognitive reframing strategies regardless of their use of public assistance, whereas non-EHS mothers who used public assistance showed decreases in cognitive reframing over time.

Seeking support from family and friends. No overall change over time was evident in support seeking from family and friends. However, individual differences in change in seeking support were predicted by interactions between EHS participation and emotional support and EHS participation and social conflict. Both interactions suggest that seeking support from family and friends is moderated by participation in EHS. Results indicate that change in this coping strategy is relatively stable for mothers in the EHS program, whereas non-EHS participants demonstrate varied patterns of change over time based on reports of emotional support and social conflict at enrollment. Non-EHS mothers who reported having greater levels of emotional support increased in support seeking from family and friends over time, whereas non-EHS mothers who reported having less emotional support at enrollment decreased in their use of support from friends and family over time. Furthermore, non-EHS mothers who reported higher levels of social conflict at enrollment, demonstrated decreases in seeking support from family and friends. Alternatively, non-EHS mothers with few social conflicts reported an increase in seeking support from family and friends over time.

Seeking support from neighbors. No overall change over time was evident in support seeking from neighbors, but changes over time were moderated by EHS program participation. There was an interaction between formal supports and participation in EHS. Mothers who participated in EHS demonstrated no change in their seeking of support from neighbors over

time, whereas non-EHS mothers who reported more formal supports were more likely to increase in support-seeking from neighbors.

Seeking support from service providers. There was no overall change over time in seeking support from service providers, but differences in level were predicted by EHS program participation, with those involved in EHS reporting seeking more support from service providers than non-EHS mothers. There was also an interaction between being partnered and participation in EHS. Although both EHS and non-EHS mothers who had a partner sought less support from service providers, non-EHS mothers who did not have a partner were especially unlikely to utilize this strategy for coping.

These results indicate that mothers in EHS, even those at potentially higher risk due to increased needs for services or lack of perceived support from others, are able to use positive coping strategies more consistently than non-EHS mothers. Among non-EHS mothers, those who perceive their support networks more positively tend to cope in similar ways as EHS mothers and those experiencing the highest levels of risk tend to cope increasingly poorly over time.

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VALIDATION OF NATIONAL CHILD LANGUAGE MEASURES AT 14 AND 24 MONTHS

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At the 14- and 24-month data collection points, the national evaluation of Early Head Start (EHS) relied primarily on the MacArthur Communicative Developmental Inventory (CDI; Fenson et al., 2000) as a measure of children's language development. The CDI is a checklist of age-appropriate language skills (e.g., vocabulary comprehension and production, use of gestures, sentence types) that is completed by parents. Whereas studies with middle-class families indicate that mothers are relatively good judges of their children's concurrent language use (Fenson et al., 1994), some researchers have questioned the accuracy of parental report by low-income mothers or those with lower levels of education (e.g., Arriaga, Fenson, Cronan & Pethick, 1998; Feldman et al., 2000). Thus, it was important for the current evaluation of EHS to ascertain how accurate mothers in the study were in assessing their children's vocabulary.

Research teams at Harvard Graduate School of Education and at New York University Graduate School of Education transcribed and analyzed parent-child discourse recorded during the 3-bag activity. The combined sample at the two sites was comprised of 161 dyads at 14 months and 158 dyads at 24 months. Mothers ranged in age from 14 to 43 years at the time of their children's birth. Approximately 45 percent of the mothers identified themselves as White, 25 percent as African American, 17 percent as Latina, and the remaining as West Indian or of mixed ethnicity. White mothers were all in the Vermont sample, while nearly all African American and Latina mothers were part of the New York sample.

The semi-structured 3-bag task from the 14- and 24-month national protocol provided the basis for detailed analysis of mother and child spontaneous speech. Videotaped interaction was transcribed and analyzed using the automated facilities of CHILDES (Child Language Data Exchange System; MacWhinney, 2000; MacWhinney & Snow, 1985). We focus here on two measures of child language use: the number of different words (*word types*) produced by the child and the total number of words (*total words)* spoken by the child. Other measures considered were children's MacArthur CDI comprehension and production scores at 14 months, MacArthur CDI production scores at 24 months, Bayley MDI scores at both ages and Bayley Language Factor scores at 24 months. Given the limited ethnic diversity in the VT sample, potential differences associated with ethnicity were explored only within the NY sample.

Wide variation was observed on all measures. Not surprisingly, children's spontaneous language production at 14 months was still quite limited. On average, children at this age produced 2.99 word types (SD = 3.97) and 6.42 total words (SD = 9.90) during the 10-minute

3-bag task. Maternal report on the MacArthur CDI indicated that children understood an average of 49.55 of the words inventoried (SD = 19.42) and produced an average of 12.35 words (SD = 13.03). The average Bayley MDI score was 95.87 (SD = 11.32). By 24 months, children's spontaneous language production had increased substantially, as indexed both by direct observation and by maternal report. Children produced an average of 40.59 word types (SD = 18.63) and 109.37 total words (SD = 75.31) in interaction with their mothers during the

10-minute observation. MacArthur CDI production scores averaged 53.17 (SD = 20.35). Average Bayley MDI scores fell to 85.26 (SD = 12.09). Bayley Language Factor scores averaged 6.77 (SD = 3.35).

Associations between child spontaneous speech measures, parent report measures, and children's performance on structured cognitive and language assessments are shown in Tables 1

and 2. Results showed that parental report of children's productive vocabulary at 14 months correlated moderately well with children's spontaneous vocabulary use as measured by word

TABLE 1
ASSOCIATIONS BETWEEN CHILD SPONTANEOUS SPEECH MEASURES, MATERNAL REPORT MEASURES, AND STRUCTURED ASSESSMENTS AT 14 MONTHS

	Word Types	**Total Words**	**CDI Production**	**CDI Comprehension**	**Bayley MDI**
Word Types					
Total Words	.88*** *(N = 161)*				
CDI Production	.43*** *(N = 158)*	.39*** *(N = 158)*			
CDI Comprehension	.19* *(N = 159)*	.14 n.s. *(N = 159)*	.51*** *(N = 158)*		
Bayley MDI	.07 n.s. *(N = 158)*	.07 n.s. *(N = 158)*	.17* *(N = 155)*	.18* *(N = 156)*	

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

TABLE 2
ASSOCIATIONS BETWEEN CHILD SPONTANEOUS SPEECH MEASURES, MATERNAL REPORT MEASURES, AND STRUCTURED ASSESSMENTS AT 24 MONTHS

	Word Types	**Total Words**	**CDI Production**	**Bayley MDI**	**Bayley Language Factor**
Word Types					
Total Words	.89*** *(N = 158)*				
CDI Production	.53*** *(N = 149)*	.40*** *(N = 149)*			
Bayley MDI	.60*** *(N = 151)*	.49*** *(N = 151)*	.52*** *(N = 147)*		
Bayley Language Factor	.68*** *(N = 133)*	.58** *(N = 133)*	.61*** *(N = 129)*	.78*** *(N = 137)*	

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

types ($r = .43$, $p < .001$) and total words ($r = .39$, $p < .001$). Bayley MDI scores at 14 months showed no relationship to spontaneous speech measures and only a weak association with either CDI comprehension ($r = .18$, $p < .05$) or production ($r = .17$, $p < .05$), suggesting that the structured Bayley assessment at this age indexes children's language development only minimally. At 24 months, parent report of child language was strongly associated with both spontaneous speech measures (word types: $r = .53$, $p < .001$; total words: $r = .40$, $p < .001$) and with structured assessments (Bayley MDI: $r = .52$, $p < .001$; Bayley Language Factor: $r = .61$, $p < .001$). With few exceptions, these general patterns were found for families in both sites and across ethnic groups. Child productive vocabulary reported by Latina mothers was not associated with child word types at 24 months, possibly due to the small sample size ($N = 27$).

Regression analyses using maternal report of children's productive vocabulary to predict children's spontaneous vocabulary use (word types) and language performance on Bayley (Bayley Language Factor) confirm that parental reports of children's language development are congruent with actual vocabulary use and structured assessments, particularly at 24 months. At age 2, parental report alone accounted for 27.5 percent of variation in child word types and 37.5 percent in Bayley Language Factor scores. Controlling for maternal education, child gender and birth order, the variation accounted for by maternal report increased to 31.3 percent for word types and to 39.9 percent for Bayley Language Factor.

These results suggest that low-income parents' reports of children's language abilities are congruent with children's observed language use. Thus, parental report constitutes a valid outcome measure of program impacts on child language development. Bayley Language Factor scores, based on structured assessment with a relatively unfamiliar adult, are also strongly supported by direct observation of children's spontaneous speech in interaction with a familiar

adult (i.e., primary caregiver), supporting the validity of the structured assessments used in the national evaluation.

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FUNCTIONS OF LANGUAGE USE IN MOTHER-TODDLER COMMUNICATION

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Note: This research is taken from: Roberts, J. & Tamis-LeMonda, C. S. (2000, June). Functions of language use in mother toddler communication. In J. Atwater (Chair), The social context of early language development for children in poverty. Symposium conducted at Head Start's National Research Conference, Washington, D.C.

Caregivers who provide children with verbally rich and responsive language environments in the early stages of language acquisition have children who excel in lexical, grammatical, and syntactic abilities, and who achieve important language milestones sooner in development. Indeed, one of the most consistent predictors of children's language achievements specifically, and school performance and cognitive development more generally, is the quality and quantity of verbal interactions with adult caregivers (e.g., Hart & Risley, 1995). In linking these findings to the Early Head Start Research Evaluation, impacts in the area of children's early language development and emerging literacy are expected to be obtained through the mediating effect of Early Head Start interventions on the quality of parent-child interactions, particularly those measures that capture the language use of mothers (such as stimulation and cognitive growth fostering). Demonstrating links between parenting and children's emerging language competencies is central to understanding and modeling associations between Early Head Start and developmental achievements in children.

In line with this goal, investigators at New York University have been closely investigating the sorts of language environments to which children are exposed in relation to children's early communicative abilities. Our aims in this study were to provide a descriptive analysis of maternal language and children's emerging communication at 14 months, and to examine associations between mothers' and children's language during this initial stage of language acquisition.

Because productive vocabulary is limited at 14 months, we developed a system for assessing children's communicative intentions, which incorporated verbalizations and gesture in determining whether or not children were intentionally communicating meanings with others. We expected maternal language that was both didactic and responsive (e.g., providing labels as well as imitations) to predict children's communicative abilities, and expected maternal language that was controlling, restrictive, and/or intrusive to be negatively associated with children's communication.

The sample consisted of the first wave of participants at New York University's local site, namely 75 ethnically diverse mother-child dyads (63.6 percent male children). The average age of the mothers was 21.8 years (range = 15 years 8 months to 44 years 10 months). The average age of the children was 14.4 months (range = 13 to 17 months). (Given such ranges, age was covaried from all analyses.) Mothers were primarily Black (57.5 percent) and Hispanic (41.2 percent). All mothers spoke English.

Data here are based on the ten-minute semi-structured three-bag, free play task used in the national protocol. Detailed transcriptions of all maternal speech and actions, and all child vocalizations and actions were made of this 10-minute interaction. Utterances were defined as units of speech as indicated by intonation and/or pauses. Transcripts were reviewed at least once for accuracy, prior to coding.

Language was coded from the transcripts while simultaneously viewing the tapes. All maternal utterances were coded into one of 17 several language functions (e.g., repetitions, expansions, paraphrases, descriptions, labels, open ended questions, closed ended questions, play prompts, prohibitions, criticisms, and attention directives). Children's vocalizations were classified into one of nine functions (e.g., labels, reference to action, notice, declaratives, objection, and distress). Children's communicative utterances had to have a clear intended

meaning but were not restricted to standard adult word forms. For example, an utterance in which the child says "boo" while pointing at a book would be considered a label. An utterance in which the child says "uh" while reaching for an object would be coded as an action/object request. Contextual cues were considered in the determination of the communicative intent of all utterances.

Variation among mothers and among children in language amount and function was dramatic. Mothers expressed between 20 and 331 utterances within the 10-minute free play session (M = 167.5). Children expressed between 0 and 117 utterances (M = 33.6). The range and mean suggest that despite the young age of the sample, children were *often* clearly communicating to their social partners.

Factor analysis, with varimax rotation was conducted on mothers' and children's language. Three factors of maternal language emerged (see Tables 1 to 3):

1) Responsive/Didactic: language in which the mother is repeating and expanding on the child's vocalizations, reformulating the child's behaviors into words, proposing questions to the child, and labeling and describing objects and events.
2) Directive: language characterized by control and direction of children's actions as well as prohibitions and corrections,
3) Uninvolved/Hostile: language that is characterized by self-directed comments and criticism of the child.

For children, two factors of communication emerged (see Tables 4 and 5):

1) Communicative: utterances that are responsive to the social partner or relate information about objects, events, desires and interactions with others.
2) Distress: Child utterances that express discontent, frustration or objection.

TABLE 1
FACTOR LOADINGS: MATERNAL RESPONSIVE/DIDACTIC LANGUAGE

Communicative Function	Factor Loading
Reformulation	.730
Closed Question	.716
Conversational Filler	.685
Description	.654
Repetition	.608
Label	.595
Self Response	.569
Open Question	.536
Expansion/Extension	.523
Description with Gesture	.510
Label with gesture	.484
Play prompt	.454

TABLE 2
FACTOR LOADINGS: MATERNAL DIRECTIVE LANGUAGE

Communicative Function	Factor Loading
Action Directives	.815
Action Encouragement	.596
Requests for Repetition	.572
Attention Directives	.568
Action Directives with Gestures	.522
Prohibitions	.516
Corrections	.501

TABLE 3
FACTOR LOADINGS: MATERNAL UNINVOLVED/HOSTILE LANGUAGE

Communicative Function	Factor Loading
Questioning child's behavior	.800
Criticism	.778
Self-Directed Comments	.573

TABLE 4
FACTOR LOADINGS: CHILDREN'S COMMUNICATIVE LANGUAGE

Communicative Function	Factor Loading
Imitations	.781
Action/object Requests	.705
Response to social partner	.705
Reference to action in play	.692
Declarative	.673
Label	.669
Random Utterances	.572
Notice	.539

TABLE 5
FACTOR LOADINGS: CHILDREN'S DISTRESS

Communicative Function	Factor Loading
Distress	.739
Objection/Refusal	.607

Associations between maternal language and children's language were next explored. The maternal responsive/didactic factor related to the children's communicative factor ($r = .54$, $p < .01$) as did the maternal directive factor ($r = .33$, $p <. 01$), although not as strongly. The maternal directive factor also related to the children's distress factor ($r = .24$, $p < .05$). Further breakdown of these associations revealed that mothers' responsive/didactic language speech predicted children's imitations ($r =. 61$, $p <. 01$), expression of notice ($r =. 30$, $p < .01$), references to actions in play ($r = .35$, $p < .01$) and declaratives ($r =.43$, $p <.01$) whereas, directive speech *only* related to children's objections/refusals ($r = .36$, $p <.01$). The maternal uninvolved/hostile factor did not relate to children's language. All associations obtained over and above sample demographics.

In summary, strong associations existed between the kind of language mothers provide for their children and children's emerging communicative competencies. Maternal responsive/didactic language is the strongest predictor of toddlers' communicative competence; maternal directive language predicts toddlers' distress. Uninvolved/hostile language does not relate to toddlers' communication. These findings suggest the urgency of programs to support mothers in their use of frequent, responsive-didactic speech in order to encourage language fluency in children. A unitary focus on reducing hostile behaviors, while of great importance to social-emotional aspects of development, will not be sufficient to promote children's language achievements. Finally, interventions aimed at enhancing mothers' language use must be implemented soon in children's first year, as mothers are affecting children's abilities to effectively communicate well before children use "language" per se.

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PREDICTING EARLY HEAD START PROGRAM USE AND ACCEPTANCE BY PARENTS

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The research partnership between the Program for Early Developmental Studies in the Dept. of Psychiatry at the University of Colorado Health Sciences Center and the Clayton/Mile High Family Futures Early Head Start (CMHFFEHS) included as a principal goal the documentation of client engagement with the program. We sought to more fully understand how families respond differently to the home visiting intervention and to see what works best for whom under what circumstances. The research agenda included acquiring psychologically meaningful information about clients during the enrollment process. Using initial client assessments might assist home visitors during this relationship formation phase, not as a replacement for their own judgment of families, but as a supplementary tool to help meet client needs.

In this paper, we will present how these issues were addressed in our collaboration. Our collaborative goal was to explore whether client characteristics were predictive of patterns of participation in home visitation. If they were, we could then discuss whether the results might

lead to a refinement of practices. We will begin with a brief review of prior efforts in the field to investigate determinants of program participation.

Typically, randomized trials of intervention investigate the intervention's effectiveness, asking the question, "Does the program work?" In such "intent-to-treat" approaches, there is an assumption of a monolithic treatment that is uniformly delivered, no matter how families may vary in amount of services delivered. Participants also experience an intervention in different ways and this will likely influence the benefits they receive. Previous studies have shown that variations in a mother's engagement with a program is related to program outcomes (Barnard et al., 1986; Korfmacher, Adem, Ogawa & Egeland, 1997; Lieberman, Weston & Pawl, 1991).

What predicts engagement in an intervention? How individuals use services and respond to an intervention depends, in part, on their personal characteristics and on the amount and type of support they receive from family, partners, and friends. Such links have been demonstrated for years in psychotherapy literature (Bergin & Garfield, 1994; Roth & Fonagy, 1996). Research suggests that mothers with who are at increased risk for parenting difficulties can be particularly helped by early interventions. For example, home visiting programs may be more successful among mothers with mental health difficulties such as depression (Lyons-Ruth, Connell, Grunebaum & Botein, 1991).

It is also possible that level of social support or interpersonal relatedness influence program use and engagement, although findings are inconsistent. Some studies show social support related to increased use and commitment to an intervention, while others demonstrate lower participation as social support increases (Birkel & Reppucci, 1983; Dunst, Lee & Trivette, 1988; Powell, 1988; Unger & Wandersman, 1988).

A study by Korfmacher and colleagues (1997) illustrates in particular the complexities of examining this issue. The authors found that insecure/dismissive mothers (with respect to their

memories for past caregiving experiences) had an equally high level of contact with their home visitors as mothers with more secure representations. Qualitative ratings by the home visitors, however, suggested that their emotional involvement in the sessions was fairly shallow. In other words, although mothers were often available for visits, they seemed to keep their home visitors at an emotional distance, paralleling their avoidance of emotions when reflecting on their relationship history. This split between amount of contact and qualitative features of the contact suggests that any examination of the relationship between participant characteristics and program use should examine multiple dimensions of program participation.

Methods

Sample. One hundred sixty-two low income women who were either pregnant or had a child under the age of 12 months were recruited by program staff to participate in the national study of Early Head Start (EHS). They signed an informed consent form with the understanding that approximately half would be randomly selected to receive EHS program services plus developmental screenings and half to receive developmental screenings only. Eighty-three women were randomly assigned to the EHS services group.

The average age of the mothers was 21.4 years, 74 percent were unmarried, 40 percent were Latina, 36 percent were African American, 17 percent were European American, and 7 percent represented other ethnic groups. Seventy-two percent of the women spoke English well, but 28 percent were more proficient in Spanish. Forty-seven percent did not complete high school, 24 percent completed high school, and 29 percent reported some technical or college-level education.

Data Gathering. Following the recruitment visit and before random assignment, mothers completed a 2-hour interview with research staff that included the Head Start Family Information System (HSFIS) enrollment questions (providing basic demographic information) plus selected

standardized questionnaires of psychological constructs that included measures of: depression (using the Center for Epidemiological Studies-Depression scale [CES-D: Radloff, 1977]), sense of personal mastery (Pearlin & Schooler, 1967), attitudes toward relationships (Simpson, Rholes & Nelligan, 1992), violence in partnered relationships (10 items from the Conflict Tactics Scale, Straus & Gelles, 1990), and stressful life events (using a 20-item life events scale by Mathematica Policy Research, 1996). Women's literacy was evaluated using the Letter-Word Identification subtest of the Woodcock-Johnson Tests of Achievement (Woodcock & Mather, 1989). Table 1 displays the sample means and standard deviations for these assessments. It is noteworthy that while 45 percent of women had depression scores above the CES-D cut-off, reported stressful life events and domestic violence were very low. The group means for personal mastery and difficult relationship attitudes were slightly about the mid-point for these scales.

TABLE 1
MEANS AND STANDARD DEVIATIONS IN BASELINE PSYCHOLOGICAL CHARACTERISTICS

Item	Mean	Standard Deviation
Depression	16.97	10.15
Domestic Violence	0.64	1.63
Personal Mastery	2.98	0.55
Difficult Relationship Attitudes	2.68	0.66
Stressful Life Events	0.27	0.13
Literacy Level (grade equivalent)	11.00	4.21

Home visitors tracked their contacts with families and recorded information about each visit on the collaboratively designed home visit tracking form. The average number of months women were in the program as of 12/31/99 was 21 months and ranged from less than one month to 37 months. The average number of visits over the three years was 45 (median = 44) but

ranged from 0-131; this included 10 mothers who had no home visits after random assignment. The average length of visits was 80.9 minutes. Following each visit, home visitors rated mother's level of involvement on a scale ranging from: (1) Not involved, inattentive, not participating to (5) Highly interested/involved, attentive. The distribution of these involvement ratings was positively skewed; the mean was 4.80 (SD = .27) and the median was 4.91. Average involvement was below the mean for 40 percent of the 83 women, including the ten women who completed no visits. Three years after enrollment began, at a point when recruitment was completed and families had potentially received services for two years or more, the research team undertook examination of the data and shared those results with program staff.

Data Analysis. In order to examine the association between maternal baseline characteristics and subsequent patterns of participation, we began by correlating the five psychological dimensions, plus maternal age and literacy level with the frequency of home visits and the average level of involvement rated by home visitors. As noted earlier, however, we realized that amount of visiting and involvement in the visits provides more information when considered together. To capture this, an aggregate measure containing classifications of participation was constructed. This was done by cross-tabulating information about frequency and involvement, dichotomizing each distribution at the mean.

This produced five groups; two clearly reflected lower participation. Never Engaged women completed no visits (N = 10) and Disengaged women completed fewer than average visits and were rated lower than average on involvement (N = 15). Two patterns reflected mixed participation in the program: Superficially Engaged women who completed greater than average visits but were rated lower than average on involvement (N = 10) and Sporadically Engaged women who completed fewer than average visits but were rated higher than average on involvement (N = 15). The fifth group included Highly Engaged women who completed greater

than average visits and were rated higher than average on involvement (N = 33). Number of visits and average involvement were weakly, but significantly correlated ($r = .29$, $p < .05$). Using the GLM procedure from SAS, we tested differences between the least square means of these five groups on the five psychological dimensions, plus maternal age and literacy level.

Results

Examining associations between the variables assessed at program entry (the five psychological constructs, maternal age and literacy level) with the later frequency of home visits and mother's level of involvement in visits, yielded no significant correlations (see Table 2). In other words, program participation variables, when considered separately as single constructs, were not predicted by baseline characteristics.

TABLE 2
CORRELATIONS BETWEEN MATERNAL CHARACTERISTICS AND DIMENSIONS OF HOME VISITING

Item	**Number of Visits (n = 83)**	**Average Involvement (n = 73)**
Depression	.02	-.14
Domestic Violence	.07	-.02
Personal Mastery	-.02	.21
Difficult Relationship Attitudes	.19	.00
Stressful Life Events	-.06	-.14
Literacy Level	.07	.16
Maternal Age	-.04	.11

The story was different, however, when program participation dimensions were combined into classifications. We examined the associations between the five classifications of participation and these same baseline variables (see Table 3). As can be seen, significant differences were observed primarily between the Superficially Engaged women and the women with higher involvement scores (sporadically engaged and highly engaged). Superficially

TABLE 3
LEAST SQUARES MEANS FOR PATTERNS OF PROGRAM PARTICIPATION IN RELATION TO MATERNAL CHARACTERISTICS AT BASELINE

	Depression	Domestic Violence	Mastery	Relationship Attitudes	Stressful Life Events	Literacy Level	Maternal Age
Never Engaged	16.9	0.01	3.10	2.34	0.33	12.32	24.60[b,c]
Disengaged	18.6	0.06	2.87	2.55	0.25	10.07	21.13
Superficially Engaged	20.2	0.05	2.54[a,d,e]	3.24[a,b,d,e]	0.36[d,e]	10.25	19.90
Sporadically Engaged	16.3	0.03	3.05	2.70	0.24	10.69	19.80
Highly Engaged	17.0	0.09	3.09	2.67	0.26	11.40	21.91

(a) $p < .05$ different from Never Engaged
(b) $p < .05$ different from Disengaged
(c) $p < .05$ different from Superficially Engaged
(d) $p < .05$ different from Sporadically Engaged
(e) $p < .05$ different from Highly Engaged

Engaged women, compared to sporadically engaged women, reported lower personal mastery ($T_{1,82} = 2.35$, $p < .05$), more difficult relationship attitudes ($T_{1,82} = 2.06$, $p < .05$), and more stressful life events ($T_{1,82} = 2.11$, $p < .05$). Superficially Engaged women, compared to Highly Engaged women, reported a lower sense of personal mastery ($T_{1,82} = 2.82$, $p < .01$), difficult attitudes toward relationships ($T_{1,82} = 2.51$, $p < .02$), and stressful life events ($T_{1,82} = 2.05$, $p < .05$). In addition, Superficially Engaged women also reported lower mastery and more difficult attitudes toward relationships than the Never Engaged women ($T_{1,82} = 2.34$, $p < .05$) and their attitudes toward relationships were also more difficult than the Disengaged group ($T_{1,82} = 2.65$, $p < .01$). Finally, maternal age also differed across groups: the Never Engaged women were significantly older at the time of program enrollment than either the Superficially Engaged ($T_{1,82} = 2.36$, $p < .05$) or Sporadically Engaged women ($T_{1,82} = 2.64$, $p = .01$). In addition, there were non-significant trends for Never Engaged women to be older than Disengaged and Highly Engaged women.

Discussion

Striking differences were found between the Superficially Engaged women and women rated by their home visitors as more involved during their meetings. This pattern of participation seemed to delimit a meaningful subgroup of mothers with particular psychological characteristics at program entry. Superficially Engaged women had a lower sense of personal mastery, more difficult attitudes toward relationships, and greater life stress at enrollment than women who became more involved in the program. Participating in a superficial manner meant that although clients were often home and available for visits, visitors experienced these women as less attentive and inquisitive during their meetings. This fits the greater reticence reflected in their attitudes toward relationships reported at enrollment, a finding similar to results reported by Korfmacher and colleagues (1997) with a different home visiting model. The lower sense of personal mastery and high levels of stress reflected in the number of recent life events reported at enrollment suggest that their relatively high attendance may be a reflection of some disorganization or lack of mobilization that kept them home and available for visits.

With respect to these psychological characteristics, Superficially Engaged women appear to have greater risks than the other groups and may stand to benefit most from the home visit services compared to their control group counterparts. That they appeared less inclined to engage with visitors is one of the challenges of relationship-based practice. Other programs have demonstrated the benefits of home visitor persistence in meeting with families in need (e.g., Olds & Korfmacher, 1998), even when these families were very passive or ambivalent in their involvement (e.g., Greenspan et al., 1987).

Both research and program staff were surprised that Never Engaged or Disengaged women did not differ from women who had patterns of greater program participation. We jointly considered how the Never Engaged group might have been an artifact of the random assignment

process. The women in this group were older than the other groups, had the highest sense of personal mastery, and the most positive attitudes toward relationships. Therefore, they may have had lower perceived needs for the structured relationship-based approach of the program.

Disengaged women, who gradually withdrew from program participation, on the other hand, did not stand out in any way. Their low engagement with the program may have been occasioned by an unexpected move from the neighborhood or other factors unrelated to their initial reported characteristics. Perceived passivity and uninvolvement may also have discouraged visitors from pursuing these women. The enrollment assessment measures, however, did not provide insight about them.

As a result of these partnership discussions, CMHFFEHS decided that supplementing their enrollment process with brief assessments of psychological characteristics of mothers would be a valuable addition to their regular protocol for two reasons. First, in the spirit of continuous learning and improvement, they expressed a desire to actively collect such information themselves and see if they could respond better to individual needs and improve engagement levels. Second, they developed a strong appreciation for the role of assessment in establishing client-home visitor relationships.

Finally, we should consider what resources a program might need to implement a systematic assessment process at program entry. A trained staff person who is able to administer standardized questionnaires as part of an enrollment process is essential. Also essential is an information management system that will permit timely data basing along with a plan for periodically summarizing information so as to examine distributions and associations between participation and initial characteristics. A continuous improvement partner working with the program may provide these data skills. Most importantly, supervisors and visitors need training and on-going support to interpret the profiles that emerge from these assessments. Such

expertise is crucial for information of this kind to be used appropriately as a supplement to the judgments of program staff regarding how to work successfully with the families they serve.

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HOW MUCH BETTER THAN EXPECTED? IMPROVING COGNITIVE OUTCOMES IN UTAH'S BEAR RIVER EARLY HEAD START

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What are the strongest early predictors of later cognitive skills? Can Early Head Start (EHS) buffer the effects of early risk indicators? Is the developmental trajectory of cognitive skills different for EHS children than comparison group children? Do EHS children do better than expected, based on predictions? And if they do better than expected, what aspects of EHS are related to how much better they do? These are some of the questions we asked as part of our local research with Utah's Bear River Early Head Start.

The goal of Bear River EHS is to improve the developmental outcomes for infants and toddlers by helping low-income parents provide experiences infants and toddlers need during their early development. For children at risk because of poverty, EHS tries to help keep them on track developmentally so they make the same cognitive gains as children in more optimal circumstances. Families who applied and qualified for Bear River EHS were randomly assigned to either EHS or a comparison group, with children in EHS expected to do better developmentally because of the extra support provided by the program for them and their parents.

Of course in both the EHS and comparison groups, all of the infants and toddlers developed. The question is whether EHS children developed "more." To answer that question is challenging. One challenge is that the population which is served by EHS programs varies widely in many ways: family background, reasons for the family's low-income status, psychological and social functioning of the parents, and even the extent to which the family participates in the EHS services offered. These complex variations together form the context in which infants and toddlers develop and must be examined in order to assess developmental

progress. An even greater challenge is that development in the first three years is rapid and variable with spurts and lulls common to all children. Also, during the first three years of life, developmental trajectories become increasingly differentiated for children in different environments.

In populations considered "at risk" for various reasons, there is a common pattern of early development. Except for those with relatively severe medical or developmental problems, test scores in the first year are typically about the same for infants in at-risk environments as they are for infants in low-risk environments. In the second and third years of life, however, the developmental trajectories begin to diverge for children in different environments (Egeland, Sroufe & Erickson, 1983; Egeland & Erickson, 1987; Gorman & Pollitt, 1992; Johnson, Diano, & Rosen, 1984; Rogan & Gladen, 1993; Villar, Smeriglio, Martorell, Brown & Klein, 1984). Children at risk because of poor nutrition, drug exposure, low socio-economic status, or poor parenting begin to fall behind; their cognitive test scores begin to decline compared to their peers. For this reason it is especially important to consider the complexities of early environments and to consider changes with time or age in addition to assessing intervention group differences on developmental test scores.

Despite all the variations in family context, in EHS participation, and in developmental trajectories, it was expected that those who had been randomly assigned to EHS would make more progress in cognitive skills than those who had not. Indeed, previous analyses indicated that by age two, EHS children's cognitive skills were "better than expected," and comparison group children's were "worse than expected," based on early predictors that included both family and child variables (Roggman, Boyce & Cook, 2001). To test whether EHS children at age three continued to do "better than expected," as they had seemed to at age two, it was essential to look at interactive effects of EHS with developmental change over time.

By looking at the combination of developmental change in cognitive skills (comparing tests with earlier assessments) and intervention (comparing EHS to a comparison group) we can see a pattern of effects that takes into account both early risk factors and maturation in addition to differences in environmental support provided to the EHS group versus the comparison group. To see if the developmental path or trajectory for cognitive skills is different for children in EHS versus the comparison group, we included both age and intervention group in our data analyses. Our approach to statistical analysis is different from that used for the national cross-site study first because it considers both age and intervention together, and second because it includes early predictors from before families were enrolled in the EHS research study.

We have used several statistical methods to test the question of whether development is "better" for children in our local EHS group versus the comparison group. For each set of analyses, we used developmental measures at more than one age point, a grouping variable indicating whether the child's family was in EHS or not, and in addition, a set of the strongest early predictors of children's cognitive outcomes at age three.

Method

Our EHS local research project included 201 mothers (103 EHS group, 98 comparison group) who were either pregnant at the time of application or had infants less than10 months old. To meet program requirements, over 90 percent were low income as defined by federal poverty guidelines, and most families (97 percent) received some sort of public assistance such as Medicaid, food stamps, and WIC. Most children were Caucasian (82 percent, 11 percent Latino, 7 percent other). Their mothers were mostly married or living with a partner (73 percent), over the age of 19 (75 percent; mean age = 22.9), had at least a high school education (65 percent), and were not working (79 percent). Family size at enrollment ranged from zero to seven children.

The developmental outcome that is the focus of this study is cognitive skills. Cognitive skills were assessed using the Bayley Scales of Infant Development at 14, 24, and 36 months. These data were collected as part of the national study. Additional data for this study included early measures of parent functioning expected to be related to children's development. These data were from interviews with mothers before random assignment to EHS or a comparison group. In addition, data were collected assessing the quantity and quality of services to the families in EHS.

Maternal interviews included questions about family characteristics (e.g., education, employment, income, ethnicity, marital status, family size). These interviews also included questions adapted from questionnaire scales developed for measuring various aspects of psychosocial functioning. The scales used for these analyses included those measuring maternal depression, social support, and attitudes about close relationships. The measure of maternal depression was The Center for Epidemiological Studies Depression Scale (CES-D; Radloff, 1977). Questions from the CES-D ask how often in the past week the individual has had emotions and thoughts associated either positively or negatively with depression, such as "I felt happy," or "I thought my life had been a failure." Reliability on this measure has been reported as a coefficient alpha of .92 (Radloff, 1977). Social support was assessed using items from the Family Crisis Oriented Personal Evaluation scale (F-COPES) of family coping related to the use of social support from friends, neighbors, and relatives (McCubbin & Patterson, 1982). Questions were modified from the F-COPES to use less difficult language and to ask how frequently the mother was likely to use these coping strategies. Parents were asked how often they sought support when there was a problem, for example, how often they "talk about a problem with neighbors" or "seek advice from relatives." Reliability on this measure has been reported as a coefficient alpha of .83 (McCubbin & Patterson, 1982). Attitudes about close

relationships were measured by the Adult Attachment Style scale, providing an avoidance index in addition to an overall insecurity score. Questions include "I find it difficult to trust others completely" and "I'm comfortable having others depend on me" (Simpson, Rholes & Nelligan, 1992). Although the scale was originally developed to assess orientation toward romantic relationships, the few items that refer to "partner" were revised to refer to "people close to me" to include relationships with family members or close friends. Reliability on this measure has been reported as a coefficient alpha of .81 (Simpson, et al., 1992).

In addition to maternal interview and child testing data, data for this study also included indicators of the quantity and quality of EHS services. Program staff provided a tally of the number of home visits and group activities in which each family participated. In addition, videotaped home visits were coded using observational measures. Trained coders rated parent engagement from 1 (unengaged) to 6 (highly engaged) using an established scale (McBride and Peterson, 1997). Coders also rated the effectiveness of home visitor facilitation of parent-child interaction during home visits. Coders used a 5-point coding scheme developed with program staff, with 1 representing no home visitor facilitation or overly intrusive and directive behavior and 5 representing effective facilitation and responsiveness. A second coder independently coded 13 of the home visit videotapes (22 percent of the total 58 tapes), and inter-rater agreement was the same for both scales used in the analyses, 88 percent, Kappa = .75.

Our analyses involved a series of steps to assess whether or not EHS children were performing better than expected on cognitive skills tests. First, we explored possible early risk indicators by calculating correlations between early measures and later cognitive outcomes. Second, we tested the statistical interaction of development and intervention in a repeated measures analysis of variance testing age by group interactions, with age point as a within subjects variable, EHS versus comparison group as a between subjects variable, and selected

early predictors as covariates. Third, we developed regression models of early predictors of later outcomes, assessed "better than expected" outcomes by examining the residuals (differences between predicted and actual scores), and compared the residuals for EHS versus the comparison group. This approach to analysis of longitudinal data has been used successfully in previous studies of constructs similar to those of interest in the proposed research (Pianta, Sroufe & Egeland, 1989; Roggman, Hart & Jump 1996). Finally, we explored correlates of the residuals to see what the strongest predictors were of children doing "better than expected."

Results and Discussion

What are the strongest early predictors of later cognitive skills? Expected predictors of later developmental outcomes were examined. The strongest predictors of poor cognitive skills at 36 months were measures of cognitive skills at earlier ages, 14 and 24 months, $r = .48$, $p < .001$; $r = .67$, $p < .001$. Of course, other aspects of the early environment may also affect poor cognitive development. Risk factors were examined that were expected to predict cognitive outcomes among the toddlers in this sample. Indicators of poor parental functioning that predicted poorer later cognitive skills included low maternal education, $r = .29$, $p < .01$, high maternal insecurity--specifically avoidance in close relationships, $r = -.30$, $p < .01$, and infrequent family use of social support, $r = .26$, $p < .01$.

Is the development of cognitive skills any different for EHS than comparison group children? To answer this question, we used a repeated measures analysis of variance with time of measurement as a within-subjects variable and program versus control group as a between-subjects variable. Our analyses also included covariates based on the strongest earlier predictors: maternal education, insecurity, and social support. We tested the statistical interaction of age and group to see if change over time was different for children in the EHS program group versus the comparison group. Results of between-group repeated measures (by age) analyses of

variance showed that for cognitive skills scores, there were statistically significant interactions between age and group, F (2, 83) = 3.68, $p < .05$. What this means is that for cognitive skills, age changes were different for those in EHS than for those in the comparison group. Simple effects tests were used to test age changes within each group, the EHS group and the comparison group. Across the three age points, EHS toddlers maintained stable standardized test scores that did not change significantly with age, while comparison group toddlers, similar to others in poverty, began to lose ground as indicated by statistically significant decreases in their standardized cognitive skill scores (simple effects test for comparison group, F (2, 163) = 6.2, $p < .01$). Figure 1 shows the different trajectory for the EHS children versus the comparison group.

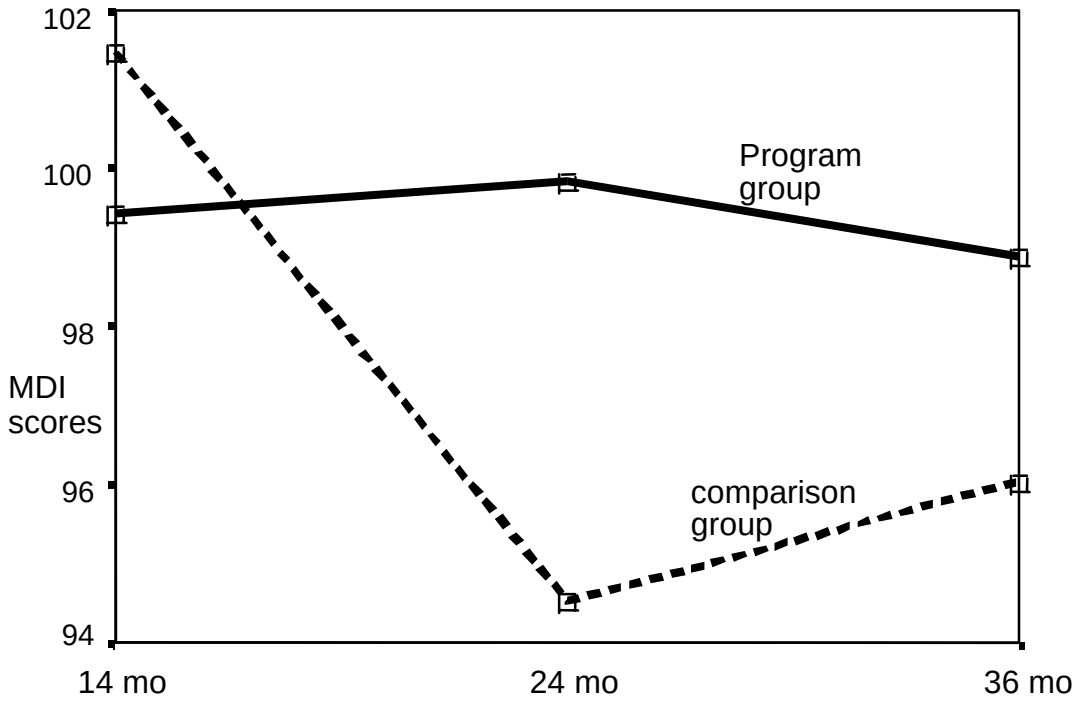
Do EHS children do better than expected, based on early predictors? To answer these questions, we compared children's actual test scores with their predicted ones. The predictions were based on regression models using the strongest early predictors. We used the earlier assessment along with early risk predictors to predict later outcomes. The strongest earlier predictor is, of course, an earlier measure of the same thing. We included the earliest measure of cognitive skills, the Bayley at 14 months, in all regression models. Low maternal education at enrollment was the most persistent predictor of low scores on later cognitive skills assessments so we included maternal education level in all models as well. To get the best prediction, we also included maternal avoidance in close relationships and use of social support to predict later cognitive skills at 36 months. The resulting regression model explained about a third of the variance in cognitive skills scores, $R = .60$, $Adj.R^2 = .33$, F (4, 89) = 12.5, $p < .001$.

Based on this predictive model, we examined the residuals, the differences between the predicted scores and children's actual scores, to see if children were doing better or worse than expected in the cognitive domain. The greater the distance the actual score was *above* the predicted score, the more a particular child was doing better than expected; the greater the

FIGURE 1

DIFFERENCES OVER TIME IN COGNITIVE SKILLS

Bayley MDI Standardized Scores



distance the actual score was *below* the predicted score, the more a particular child was doing worse than expected. The EHS children were, on the average, doing better than expected; the comparison group were, on the average, doing worse than expected. The group difference in these residuals was statistically significant, t (90) = 2.1, $p < .05$.

EHS children do better than expected in cognitive development. What aspects of EHS are related to how much better they do? Measures of the quantity and quality of EHS services, for those who received at least 6 months of services, were examined in relation to the size of residuals, that is, to how much better the cognitive skills scores were than expected based on early predictors. The strongest correlate of the residuals was the rating of parent engagement during observed home visits, $r = .37$, $p < .05$. Additional variables were, in turn, related to parent engagement during home visits. These included the effectiveness of home visitors in facilitating parent-child interaction during home visits, $r = .53$, $p < .001$, total number of group activities attended, $r = .30$, $p < .05$, and lack of maternal avoidance in close relationships, $r = -.43$, $p < .01$. Mothers who were more engaged in home visits were thus more trusting and responsive to close relationships, more likely to participate in other program activities, and more likely to have more facilitative home visitors.

Summary

In summary, the developmental trajectory is better for children in EHS compared to the comparison group. Early risk factors of poor maternal education, maternal avoidance, and infrequent family use of social support appeared to be buffered by the EHS experience. While cognitive skills scores declined for the comparison group, they did not for the EHS children. For children from low-income families in northern Utah and southern Idaho, those who had been enrolled in Bear River EHS had better than expected outcomes in the cognitive domain. They did better on cognitive tests than expected, maintaining age appropriate progress in their

cognitive skills in spite of early test scores and early risk factors. In contrast, toddlers in the comparison group did not show similar progress in the cognitive domain; they did not maintain age appropriate cognitive skills. The advantage gained by EHS children was evidently due to the level of engagement of their mothers during the EHS home visits, engagement that was related to more involvement in other EHS activities, more facilitative home visitors, and less maternal avoidance.

By examining both age changes and intervention, our results indicate a different developmental trajectory for EHS toddlers versus the comparison group. Even though the average group differences in Bayley scores are not large clinically, the EHS group is maintaining their trajectory during an age period when children with similar risk factors typically begin to decline. This difference in trajectories is especially important for an at-risk group whose developmental trajectories, with increasing age and exposure to risk factors, would be expected to diverge substantially from those children in more optimal environments.

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FATHER-CHILD INTERACTIONS: MEASURING PAST PATERNAL INFLUENCES

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Introduction

Research on father involvement has increasingly shown that fathers play a significant role in their children's development (Lamb, 1997). Studies examining father-child interactions have predominantly characterized fathers as "playful," with less attention to other important dimensions, such as responsiveness or didactic behaviors (Hossain & Roopnarine, 1994; MacDonald & Parke, 1984; Parke, 1996). There have only been a small group of studies that investigated fathers' childhood experiences with their parents in relation to their parenting style (Cowan & Cowan, 1990; Onyskiw, Harrison & Magill-Evans, 1997; Cohn, Cowan, Cowan & Pearson, 1992). Of those studies, only one known study has specifically examined fathers' relationship with their fathers (Cox, Owen, Lewis, Riedel, Scalf-McIver & Suster, 1985). The following study expands on this work by examining fathers' childhood relationships with their fathers in relation to their own parenting interactions.

In the present investigation, we examined the interaction styles of 57 ethnically diverse, inner city fathers engaged in play with their 24-month-old children. Specifically, our goals were to:

- Describe the nature of fathers' interaction styles with their two-year-old children.
- Compare the relations between fathers' interaction styles with their children's social, emotional, and cognitive behaviors.
- Assess the extent to which fathers' perceptions of their relationship with their fathers relate to their interaction styles with their children.
- Explore men's feelings toward and perceptions of their childhood experiences with their fathers by examining a subsample of 18 qualitative interviews.

Methods

Participants

Participants were 57 fathers/father-figures and their children (28 boys and 29 girls). Most, 88 percent (N = 54), were biological fathers; three were stepfathers. Sixty percent (N = 34) of fathers had been living with their children since birth, and the majority, 72 percent (N = 41), were single. At the time of interview, fathers ranged from 18 to 46 years of age (M = 25.5, SD = 6.21). The children were between the ages of 24 and 30 months (M = 25.4, *SD* =1.65). Fathers came from diverse racial backgrounds: 64.9 percent (N = 37) Latin American, 26.3 percent (N = 15) African American, 5.3 percent (N = 3) Asian American, and 3.5 percent (N = 2) European American. Forty-two fathers spoke English and fifteen spoke another language (13 Spanish, 2 Mandarin). Almost half, 43.9 percent (N = 25), of fathers completed 11 or less years of high school, 29.8 percent (N = 17) graduated from high school or received their GED, and 26.3 percent (N = 15) completed some college or graduated from college. All families were low-income and eligible to receive some form of governmental assistance (e.g., Medicaid, food stamps, WIC). More than half of fathers, 89.4 percent (N = 51), reported working full-time or part-time, and their mean monthly income was $1,291.74 (SD = $979.49; range: $0 to $4,000).

Videotaping Procedures

Father-child interactions were videotaped during four activities, including 10 minutes of semi-structured free play, which formed the basis of the present investigation. During free play, toys were presented to fathers in three separate bags (bag #1 - a book, bag #2 - a pizza set and telephone, and bag #3 - a farm with farm animals). Fathers were asked to sit on a mat with their children, to ignore the camera, and to do what they would ordinarily do with their children. They were instructed to only play with the toys from the three bags and to start with bag #1, move on to bag #2, and finish with bag #3. They were told that they could divide up the 10-minutes as

they liked. Fathers were asked not to allow their children to use a pacifier during the videotaping, so that the researchers could hear children's verbalizations.

Measures

Father-Child Interactions. The quality of father-child interactions was assessed using the Caregiver-Child Affect, Responsiveness, and Engagement Scale (C-CARES; Tamis-LeMonda, Ahuja, Hannibal, Shannon, & Spellmann, 2001) which rates various father, child, and dyad behaviors. Fourteen father and 11 child items were used. Each item was rated using a 5-point Likert scale ranging from 1 = not observed to 5 = constantly observed. Father items included: positive verbal statements, negative verbal statements, participation with child, responsiveness to non-verbal cues, responsiveness to verbal cues, emotional attunement, flexibility, intrusiveness, structuring, achievement orientation, amount of language, quality of language, symbolic play, and creative play. Child items included: positive affect, negative affect, emotional regulation, participation with caregiver, responsiveness to caregiver, emotional attunement, involvement with toys, persistence, amount of language, quality of language, and symbolic play.

Demographic data. Demographic information, including residency, marital status, age, race, education, and income was collected during interviews with fathers. In addition, fathers were asked how often they spent one or more hours a day with their child; how much help they provided in caring for their child; and how much influence they had in making major decisions about their child's education, religion and health care needs. All responses were rated using 3- or 5-point Likert scales.

Paternal Childhood Experiences. The adult version of the Parental Acceptance-Rejection Questionnaire (PARQ) was used to measure fathers' perception of their acceptance and rejection from their fathers during childhood. The PARQ is a self-report instrument that is rated on a four-point scale. Twelve items from the 60-item scale were selected—seven items on the acceptance

scale and five items on the rejection scale (PARQ; Rohner, 1991). Fathers were asked how their father treated them while they were growing up using a scale from 1 = "almost always true" to 4 = "almost never true." Sample questions included, "My father said nice things about me," and "My father saw me as a big bother." Two scale scores—paternal acceptance (7 items) and paternal rejection (5 items) were calculated. Prior to obtaining each scale score, all items were reverse scored. A high score on paternal acceptance signified a maximum perceived acceptance and a high score on paternal rejection signified maximum perceived rejection.

Men frequently perceived experiencing high levels of acceptance and low levels of rejection from their fathers/father-figures during childhood. Men's mean score on the parental acceptance scale was 22.35 (SD = 5.67), with a potential range from 7 to 28, suggesting, overall, this group of men had positive perceptions of their relationship with their fathers. Their mean score on the paternal rejection scale was 8.02 (SD = 2.98), with a potential range from 5 to 20.

Qualitative Interviews. After completion of the quantitative interview, a 30-minute semi-structured qualitative interview was conducted. The qualitative questions contained different questions, three of which are the focus here—men's perceptions of their paternal childhood relationship and how this relationship has influenced their own parenting. In response to the interviewee's reply, subsequent questions were asked in an attempt to get the interviewee to share his personal experiences more deeply. The qualitative interviews were tape-recorded and transcribed verbatim.

Fathers' transcripts were examined with respect to: (a) the details of fathers' childhood experiences with their father, (b) how fathers spoke about their feelings toward their father when describing their experiences, and (c) how fathers perceived their relationship with their father in relation to their own parenting. Written transcripts of the interviews were reviewed three times

and different colored markers were used to highlight these three aspects of fathers' stories (Brown & Gilligan, 1991).

The first reading focused on how fathers described and reflected on their fathers' involvement with them during childhood as reflected in Lamb, Pleck, Charnov, and Levine's (1987) taxonomy: (a) *Accessibility*: a father's presence and availability to his child, regardless of the quantity or quality of their interactions; (b) *Responsibility*: a father's ability to meet his child's needs, such as providing financially to him/her; and (c) *Engagement*: a father's shared interactions with his child, such as playmate or teacher. The second reading identified how fathers spoke about their feelings toward their father by locating when and how they described their fathers in their stories (e.g., expressions of anger, apathy, disappointment, warmth or pride). The third reading located men's perceptions of how their childhood experiences with their fathers' related to their own parenting, and focused on their similarities and/or differences in their parenting approach to their fathers. Themes identified for all three readings in each father's narrative were coded and frequencies were calculated on a separate grid.

Results

Father Involvement

The participants in this study comprised of highly involved fathers. Over three-quarters of the fathers, (N = 41), reported that they spent “every day or almost every day” with their children. Almost two-thirds (N = 35) reported they looked after their children alone “every day or almost every day” and reported they provided “a lot of help” in caring for their children. The majority of fathers', 68.4 percent (n = 39), believed they had a great deal of influence in making major decisions regarding their children's heath care, education, and religion.

Types of Father Interaction Styles

To explore if distinct groups of father interaction styles exist, a cluster analysis was performed which included 15 father items on the C-CARES. First, an agglomerative hierarchical procedure using Ward's method was conducted to determine an estimate of the number of groups that would emerge. Analysis indicated a three-cluster solution best fit the data. Second, a k-means iterative clustering procedure was used in which the centroids derived from the hierarchical solution were entered. Cluster analysis suggested three different paternal interaction styles:

1. *Responsive/Didactic* fathers (42 percent; N = 24) were child-focused. They were highly responsive, emotionally attuned, and flexible, as well as sophisticated in their verbal and play interactions with their children.
2. *Overbearing* fathers (28 percent; N = 16) were achievement-oriented, through using intrusive, highly structured interactions with their children.
3. *Disengaged fathers (30 percent; N = 17) displayed less engaged, responsive, and involved interactions* with their children.

Finally, to test the strength of the classification logarithm, a discriminant function analysis was performed using the 15 father items on the C-CARES as predictors of membership in the three groups. As indicated in the Wilks lambda analysis, both functions were strongly associated with between group membership and father items on the C-CARES, χ^2 (28) = 145.66, $p < .001$ and χ^2 (2) = 57.52, $p < .001$.

Function 1. Group membership accounts for 69.9 percent of the variance in Function 1. This function discriminates the three groups of fathers as follows: (a) responsive/didactic (2.65), (b) overbearing (-1.88), and (c) disengaged (-2.60). The standardized canonical discriminant function coefficients associated with Function 1 illustrate that responsiveness to nonverbal, non-distress (.57), emotional attunement (.50), language quality (.34), responsiveness to verbal non-distress (.34), symbolic play (.33), and creative play (.30) contribute to scores on this function.

Function *2*. Group membership account for 30.4 percent of the variance in Function 2. This function also distinguishes differences among the three groups of fathers: (a) responsive/didactic (.00), (b) overbearing (2.05), and (c) disengaged (-1.88). The standardized canonical discriminant function coefficients significantly associated with the scores in Function 2 are the variables intrusiveness (.51), flexibility (-.44), language amount (.43), participation (.37), achievement orientation (.37), structuring, positive verbal statements (.24), and negative verbal statement (.19).

There was 98.2 percent accuracy in correctly classifying the grouped fathers. These findings confirm the validity of the three-cluster group.

Three Types Of Father Interaction Styles: Comparisons Of Fathers' Demographics, Their Children's Behaviors, And Their Childhood Experiences With Their Fathers

Three sets of one-way ANOVAs were conducted to assess whether types of father interaction styles differed based on men's demographics, their children's behaviors, and their childhood relationships with their fathers. First, differences in types of father interactions based on demographic variables (residence, marital status, number of children, age, income, education, immigrant status; level of involvement; and child's age and gender) were examined. There were no significant differences in fathers' demographic data, reports of their involvement with their children, or their children's age based on fathers' interaction style, Fs (2, 54) range = .17 to 1.94, $p > .05$). The only exception was that the responsive/didactic fathers had significantly more daughters than the overbearing fathers, Fs (2, 54) = 3.74, $p < .05$). There were no differences in fathers' interaction style based on their race (Latin American, African American, Asian American, and European American), χ^2 (4, N = 57) = 4.23, $p > .05$.

Second, a series of One way ANOVAs were conducted to assess potential differences in children's behavior items across father cluster groups (see Table 1). Bonferroni post hoc findings revealed:

- *Responsive/didactic* fathers were more likely to have children whose behaviors were responsive, emotionally attuned and participatory with their father, as well as sophisticated in verbal and play behaviors.
- *Overbearing* fathers were more likely to have children who participated in activities with and were responsive to their fathers' behaviors, yet they were low in positive affect and unsophisticated in verbal and play behaviors.
- *Disengaged* fathers were more likely to have children who were disengaged and unresponsive to their fathers. They were engaged with the toys, but exhibited low levels of play and language behaviors.

Finally, differences in the three types of father interaction styles were examined based on their paternal childhood experiences of acceptance and rejection (see Table 1). Fathers' experiences of paternal acceptance were not associated with their interaction style. However, father interaction styles differed significantly based on their experiences of paternal rejection. Bonferroni post-hoc t-tests revealed that both "overbearing" and "responsive/didactic" types of fathers were more likely to perceive experiencing lower levels of paternal rejection than disengaged fathers.

TABLE 1

COMPARISON OF CHILD BEHAVIORS ACROSS TYPES OF FATHER INTERACTIONS

	Types of Fathering Interactions			
	Responsive/Didactic (*n*=24)	Overbearing (*n*=16)	Disengaged (*n*=17)	F ratios (df =2)
Child Behavior Items	*M*(SD)	*M*(SD)	*M*(SD)	
Positive affect	3.96(.75)	2.88(1.15)	3.06(1.08)	7.25**
Negative affect	1.67(.76)	2.06(.93)	1.76(.83)	1.12
Emotional regulation	4.29(.91)	3.94(1.18)	3.71(1.21)	1.51
Participation with father	4.04(.81)	3.38(1.20)	2.76(.75)	9.70***
Responsiveness to father	4.00(.86)	*3.75(.93)*	3.00(.79)	6.76**
Emotional attunement	3.63(1.10)	*2.69(1.20)*	1.76(.75)	16.15***
Involvement with toys	4.46(.66)	3.75(.78)	3.76(.97)	5.42**
Persistence	3.96(.80)	3.31(1.01)	3.00(1.12)	5.28**
Language use	3.46(1.10)	2.50(.81)	2.47(1.13)	6.11**
Language style	3.38(1.14)	1.88(.62))	2.47(1.07)	11.44***
Symbolic play	2.83(1.01)	1.69(.48)	1.88(.99)	9.84***
Paternal Childhood Experiences				
Acceptance Scale	22.17(6.07)	24.13(4.00)	20.94(6.24	1.34
Rejection Scale	7.67(3.47)	6.69(1.89)	9.76(2.28)	5.43**

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

Qualitative Analyses

To examine men's feelings toward and perceptions of their fathers' involvement with them during childhood, three groups of fathers were chosen based on their style of interaction with their children. The total subsample comprised 18 transcripts: (a) six men from the responsive/didactic group, (b) six men from the overbearing group, and (c) six men from the disengaged group.

Responsive/Didactic fathers typically expressed feelings of warmth and adoration toward their fathers. Statements from fathers such as “my dad was a wonderful guy to have growing up” and “my father was always there for us” encompassed the majority of the interviews. However, there were two fathers who expressed feelings of anger and disappointment toward their fathers'

poor involvement with them during childhood. One man expressed disappointment at his father leaving his family during his childhood, stating, “instead of leaving, he should’ve stayed there.” However, he still had positive memories of his father, asserting, “he was really into us, that’s why I say all my love is for him and my moms.” The other articulated pride in his fathers' ability to change and improve his life, stating:

> …even though he didn’t live with me for most of my childhood, the interaction that I did have with him is just very prominent in mind that I can recognize qualities in myself that are through him…he’s a good man, he really is good.

Thus, while acknowledging his fathers neglect as a child, he was also able to move forward and recognize his father's current strengths.

The majority of men perceived their fathers as "being there" physically, financially, and emotionally. One father replied, “he supports me, he supports me, you know, he supports me all the way.” Four men reportedly want to parent similarly to their fathers, making comments such as, “I really liked his approach at dealing with us when we did things wrong or uh trying to teach us something. It was a very gentle approach, and uh I try to carry it over…” Two men want to parent differently from their fathers, as one stated:

> …I feel like a lot of the thing or a lot of reasons that he gave for not being in my life, I feel like they were excuses…anything that’s important in your life, you make it priority…so you should make that the same priority with your children.

All men expressed their desire to nurture their children with some subtle differences from what they received from their fathers, such as being more involved academically and providing more structure in their child's life.

Overbearing fathers, similar to responsive/didactic men, frequently expressed feelings of warmth and respect toward their fathers in statements such as, “he was my hero” and “I had a lot of respect and admiration for my father.” However, half the men also expressed some fear toward their fathers and two men expressed anger/disappointment with their fathers. One man was angry because his father was not around much, and another was angry because his father was emotionally abusive toward him. However, both men expressed forgiveness toward their fathers' behaviors, with one stating, “it used to make me angry, but I got over that. It takes some time, though.” Their fathers had also changed, becoming more involved in their lives, as one father replied, “he’s there whenever I need him.” A sense of pride is implied in these statements; pride in that their fathers had grown over time to become more a supportive parent.

The majority of men perceived their fathers as being physically available and financial providers for the family. A few men saw their fathers as playmates and/or nurturing, taking their sons for trips in the countryside and the beach or just “hanging out” with them. However, most wished their fathers' were more nurturing and supportive, as one man stated, “he was rough with me.” When the men were asked about the kinds of things that their fathers did with them that they would do with their own children, one answered, “The same things that he use to do for me, I’d do for [child], but I think I’d take care of her better…I’ll see her more often, I think...I’ll take responsibility for her more.” Thus, the fathers expressed a commitment to be available for their children and to be financial providers as their fathers had done for them, but unlike their fathers, they were determined to also provide more "quality" time with their children.

Disengaged fathers frequently expressed feelings of anger and/or indifference toward their fathers. Comments such as “I didn’t know my father and what I knew, I don’t like,” and “my father was an unfit father” typify the responses these men had. Only one man, who lost his father at a young age, expressed feelings of warmth when speaking about his father, stating, “I loved

everything that he did for me while he was alive. He was always there for me." Sadness could also be discerned from his remarks, as he stated, "you know [he did] all what a father should have done with his son during the time he was around, basically."

The majority of men felt their fathers' spent little time with them and did almost nothing with or for them, except for taking them on some outings, such as fishing trips. Several men described their fathers as being emotionally or physically abusive, frequently due to their alcohol/substance use. One father described his abuse, stating:

> …I try to go to sleep before he'd get home, but that still didn't help. I could be asleep and he'd beat us out to sleep. I mean while we sleep, all you feelin' are these belts and switches hittin', y' know.

All men, except for the man whose father died during childhood, vowed to parent their child completely different from their father. Sentiments such as this were expressed by one father, who when asked what he would differently from his father replied, "…I plan to do the opposite." Similar to the other two groups of men, disengaged fathers expressed their desire to spend more time and more "quality" time with their children, unlike what their fathers had done.

Conclusions

In this study of inner-city, minority fathers, three meaningful types of fathering interactions were identified. Responsive/Didactic--these fathers demonstrated great awareness and responsiveness to children's emotional needs. They were flexible, sensitive to appropriate teaching moments and ways to engage their children in play without being overtly achievement-oriented. This parenting style appeared to be positively associated with children's social and cognitive abilities. Overbearing--these fathers were driven to teach their children skills, however, they were highly structured and primarily intrusive during their engagements. These overly

controlling fathers appeared to diminish children's exploratory and communicative initiatives. Disengaged--these fathers were typically uninvolved with and unresponsive to their children. Their children were also unresponsive to them and only moderately involved with toys in a rudimentary and unsophisticated manner. This is not to say that children are passive recipients of fathering. Children who exhibit sophisticated language and play might promote sensitive, didactic interactions in their fathers. Similarly, children who are less capable might be less rewarding social partners, thereby compromising the quality of their fathers' engagements.

While a majority of the men were actively engaged with their children and almost half were responsive and didactic, nonetheless, there was a group of men who were less engaged with and sensitive to their children. This was linked, in part, to childhood experiences of paternal rejection. However, the story is more complex as there were also fathers who faced adverse childhood histories, but were able to rise above these negative experiences and provide responsive interactions with their children. In listening to men's voices about their paternal childhood experiences in relation to their own parenting, regardless of their feelings toward and perceptions of the quality of their fathers involvement, all men expressed a strong commitment to "be there" emotionally and physically for their children.

These findings might contribute to designing effective prevention-intervention programs to more appropriately address the needs of a broader range of fathers and their families than current studies allow. Taken as a whole the findings suggest that, while many low-income men are absent in their children's lives (Marsiglio, 1987), fathers who are involved with their children, can and do interact with them in a variety ways--many nurturing and didactic. Furthermore, the findings also support the notion that fathers' childhood experiences of paternal rejection negatively related to the quality of their parenting interactions. However, in order to more fully appreciate how these experience shape fathers' interactions and involvement with their children,

additional variables should be considered (e.g., the quality of fathers' childhood relationships with their mothers and their current relationships).

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RELATIONS AMONG MOTHER AND HOME VISITOR PERSONALITY TRAITS, RELATIONSHIP QUALITY, AND AMOUNT OF TIME SPENT IN HOME VISITS

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Over the past several decades, home visiting models have been developed in response to needs of low-income families with infants and toddlers. The goal of home visiting programs is to promote positive family and child outcomes through the delivery of services in families' home environments. Research has suggested that regular, frequent visits result in more benefit to families in poverty than less intensive services (Gomby, Culross & Behrman, 1999). Yet, in a variety of programs, home visits fall short of the number prescribed by the program design (Barnard, 1998; Daro & Harding, 1999).

Some investigators and practitioners argue that the quality of relationships that develop between parents and home visitors is central to home visiting (Klass, 1996; Wasik, Bryant, & Lyons, 1990). Although no known investigations have empirically examined home visitor-parent relationship quality as it relates to home visiting, evidence from other helping relationships may be instructive. Theory and research on the factors promoting successful outcomes from counseling and psychotherapy identify client-therapist relationship quality as critical. In particular, client-therapist agreement on therapy goals and strategies and personal feelings for each other have been linked to satisfaction with therapy and with successful therapy outcomes (Bordin, 1979; Horvath & Greenberg, 1989). Similarly, Kiesler and Watkins (1989) found positive associations between patient-therapist interpersonal complementarity and both party's perceptions of their working relationship.

Because personality traits index characteristic ways of thinking about and reacting to people and situations, have relatively high heritability coefficients, and appear to be stable over many years (Caspi, 2000; Tellegen, Lykken, Bouchard, Wilcox, Segal & Rich, 1988), a number of

researchers have investigated relations between personality traits and close relationships. In particular, higher-order positive emotionality (a combination of tendencies to experience positive emotional dispositions, to enjoy closeness to others, to want to make positive impacts on others, and to be perseverant and willing to work hard to achieve mastery) predicts outgoing, friendly interpersonal styles and high relationship satisfaction in married and dating couples. Negative emotionality (a combination of aggressive, alienated, and stress-prone tendencies), on the other hand, predicts a propensity to experience negative moods and to be involved in conflictual couple relationships (e.g., Karney & Bradbury, 1997; Larsen & Ketelaar, 1991; Watson, Hubbard & Wiese, 2000).

Evidence linking personality with relationship quality, when combined with evidence showing the importance of client-therapist liking and trust for the success of helping relationships, suggests that it may be useful to explicitly examine links between mothers' and home visitors' personality traits, home visitors' feelings about the relationship, and time spent in home visits. Individuals with personalities high in negative emotionality may have difficulty sustaining the type of positive relationship that has been advanced as fundamental to successful home-visiting models, whereas individuals high in positive emotionality may find it easy to establish and sustain the requisite trust and interpersonal coordination. Accordingly, we hypothesized that home visitors' feelings about their relationships with individual mothers mediates connections between home visitors' and mothers' personality characteristics and time spent in home visits. In other words, we expected to see that home visitors' and mothers' personality traits predict relationship quality, which, in turn, predicts home visiting time.

Because individual personality traits give a more specified understanding of personality-home visiting associations than superfactors, we examined relations between *components* of the Positive Emotionality and Negative Emotionality superfactors and relationship quality and

amount of home visit time. The personality instrument administered to participants was Tellegen's (1982) Multidimensional Personality Questionnaire, form NZ (MPQ). We were interested in the Stress Reaction, Alienation, Social Potency, Well-Being, Social Closeness, Achievement, and Control subscales.

The Stress Reaction scale measures an individual's tendencies to worry and to feel nervous and vulnerable in everyday situations. The Alienation scale indexes the individual's propensity to view others with suspicion and mistrust. High Social Potency scores indicate propensities to assume leadership roles and to desire to influence others. High Well-Being scorers are disposed toward cheerfulness and seeing positive aspects of life. High Social Closeness scores denote propensities to enjoy being with people and to turn to people when comfort is needed. The Achievement scale measures tendencies to enjoy demanding work and to be persistent. The Control scale assesses planfulness, reflectiveness, and cautiousness.

We hypothesized that mother-home visitor relationship quality and time spent in home visiting would be negatively associated with home visitors' and mothers' scores on the Stress Reaction and Alienation scales, and positively associated with their scores on the Social Potency, Well-Being, Social Closeness, Achievement, and Control subscales. Stress Reaction and Alienation are included in the higher-order Negative Emotionality superfactor (Tellegen & Waller, in press). Following from the above-mentioned findings that negative emotionality is associated with difficulty in establishing and maintaining intimate relationships, we reasoned that it may also predict problems in other types of relationships, such as those between home visitors and mothers. Similar reasoning was behind our hypothesis that home visitors' and mothers' Well-Being and Social Closeness scores would be positively associated with relationship satisfaction and time spent in home visits; the research evidence reviewed above points to

positive relations between positive emotionality (of which Well-Being and Social Closeness are components) and relationship satisfaction.

In addition, we hypothesized that home visitors' and mothers' Social Potency and Achievement scores would be positively associated with relationship quality and time spent home visiting. We reasoned that home visitors with these personality tendencies would want to meet program performance standards, would want to help (i.e., influence) families achieve their goals, and would be willing to dedicate time to this effort. We expected the same of mothers with these traits inasmuch as they might view home visits as a vehicle for personal progress. Similarly, we expected Control to be positively associated with relationship quality and home visit time because propensities to be planful and reflective would seem to predict thoughtful organization and accomplishment of work-related tasks (including the relationship building and investment of time necessary for home visit success).

Method

Participants

The participants included 41 African-American, first-time mothers. The mothers were part of a larger study that included 82 mothers who were enrolled in an Early Head Start program in a large, Midwestern city. The current sample was limited to the mothers with complete data on the instruments used in the present analyses. Compared to mothers not included in the present study, the mothers in our sample did not differ on any of the personality subscales except Social Potency, in which case mothers in the sample scored significantly higher than mothers excluded due to incomplete data. (However, Social Potency was unrelated to time spent in home visits.) Most of the mothers were in their late teens or early 20s (M = 19.3 years, SD = 3.1) and had limited education (50 percent did not have a high school degree or GED). The majority of mothers (96 percent) were unmarried and received some type of public assistance (e.g.,

Medicaid/Medicare [85 percent]; food stamps [50 percent]; AFDC [31 percent]; WIC [88 percent]). Mothers were served by one of five home visitors, four females and one male.

Procedure

Research assistants administered a battery of instruments to mothers, including the personality questionnaire, in their homes when mothers' infants were 6 or 12 months old. (Time of administration was unrelated to personality scores.) After each home visit, home visitors recorded the length of the visit. Three years after the program began, home visitors completed questionnaires tapping their own personality characteristics and perceptions of the quality of their relationships with each mother in their caseload.

Measures

Personality. The Multidimensional Personality Questionnaire, Form NZ (MPQ) (Tellegen, 1982) is a measure of "normal" personality characteristics. The MPQ has 10 subscales that tap affective, cognitive, and behavior dimensions of respondents' personalities. Higher scores indicate higher levels of the specified personality dimension. For the current study, we used seven of the scales: Stress Reaction (alpha = .89), Alienation (alpha = .82), Social Potency (alpha = .60), Well-Being (alpha = .81), Social Closeness (alpha = .78), Achievement (alpha = .56), and Control (alpha = .68). (All alphas are based on mothers' scores.)

Working Alliance. The Working Alliance Inventory (WAI) (Short form), developed by Horvath and Greenburg (1989), assesses the working relationship between a client and clinician. For the present study, the WAI wording was modified to refer to the relationship between parents and home visitors. The WAI emphasizes the level of mutuality between the parent and the home visitor Although the WAI is comprised of three subscales, we used only the Bond subscale because it most adequately captures perceived relationship quality. *Bond* measures mutual attachment between the mother and home visitor, including trust, acceptance and confidence

(sample item: I feel that [mother's name] appreciates me"). Responses range from 1 (never) to 7 (always) with higher scores indicating higher quality relationships.

Participation in home visiting. Participation in visits, operationalized as the mean number of minutes spent with each mother per month, based on three months to two years of visits, served as the dependent variable. Mean participation time was 106 minutes (SD = 42.9). Participation information was obtained by examining home visit records for each family.

Results

A primary goal of the present study was to test hypotheses that the quality of mothers' and home visitors' relationship mediates links between personality characteristics and home visit participation. Support for the hypothesis of statistical mediation would require evidence that (a) personality and home visit participation are significantly related, (b) personality and relationship quality are significantly related, and that (c) the relation between personality and home visit participation is substantially reduced when relationship quality is partialled out (Baron & Kenny, 1986).

To test our hypotheses, we had to consider the fact that, because each home visitor was assigned to multiple mothers, data were nested (i.e., structured hierarchically with mothers nested within home visitor caseloads). It is recommended that an estimate of within-group similarity relative to between-group similarity be calculated when data are arranged in nested fashion. In the present case, within-group similarity refers to homogeneity within caseloads and between-group similarity refers to homogeneity between caseloads. The question asked, in other words, is whether mothers assigned to the same home visitor are more similar to one another than mothers assigned to different home visitors. Therefore, an intraclass correlation coefficient (ICCs; *p*) was computed to estimate the proportion of variance in participation scores accounted for by the home visitor level. The results indicated that the intraclass correlation coefficient for

participation scores was .07, suggesting there was more similarity in maternal participation scores within caseloads than between caseloads. Stated differently, mothers in the same caseload had more similar participation scores than did mothers with different home visitors. This result provided evidence that an analytic method that accounts for structured data should be used. Consequently, hierarchical linear modeling (HLM) was used. HLM is a statistical procedure that takes such complex patterns into account (Bryk & Raudenbush, 1992).

Maternal and Home Visitor Personality as Predictors of Home Visit Participation

A series of random effects HLM models were conducted to investigate whether maternal and home visitor personality variables predicted home visit participation rates. Specifically, seven separate models were run, one for each personality subscale. In each model, maternal personality score was a level 1 variable and home visitor's personality score was a Level 2 variable.

The findings indicated that four maternal and two home visitor personality characteristics were significant predictors of participation. Specifically, maternal personality-based achievement striving, $F(1, 34) = 4.93$, $p = .03$, and desire for control, $F(1, 35) = 5.62$, $p = .02$, were negatively related to home visit participation. Maternal Stress Reaction, $F(1, 34) = 5.24$, $p = .03$, and Alienation, $F(1, 34) = 6.87$, $p = .01$, on the other hand, were positive predictors of participation. Maternal Social Potency, Well-Being, and Social Closeness were unrelated to participation. With regard to level two variability, both home visitors' higher Well-Being scores, $F(1, 34) = 7.18$, $p = .01$, and lower Stress-Reaction, $F(1, 34) = 3.06$, $p = .08$, scores predicted increased home visit participation. Home visitor Alienation, Social Potency, Social Closeness, Achievement, and Control scores were unrelated to participation. For subsequent analyses involving personality, only subscales that were significantly related to participation were used.

Maternal And Home Visitor Personality As Predictors Of Relationship Quality

Next, random effect HLM models were conducted to test the association between the four maternal personality traits that were related to participation (specifically, Achievement, Control, Stress Reaction, and Alienation) and home visitors' ratings of the quality of the relationships between themselves and mothers (i.e., the Bond subscale of the WAI). Results indicated that maternal Stress Reaction, $F(1, 33) = 4.2$, $p = .05$, and Alienation, $F(1, 33) = 6.45$, $p = .02$, were positively related to home visitor's assessment of relationship quality.

In a similar manner, HLM models were also run analyzing the relationship between the two home visitor personality characteristics that were related to participation (Well-Being and Stress Reaction) and relationship quality. No significant effects were found. Thus the hypothesis that relationship quality mediates links between *home visitor* personality and participation was not supported.

Relationship Quality As A Mediator Of Maternal Personality-Participation Links

Tests of the hypothesis that relationship quality mediates links between *maternal* personality and participation required one more set of analyses. This final step in testing statistical mediation required that maternal personality and home visitor relationship quality be run as simultaneous predictors of participation. Two separate models were conducted, one for maternal Stress Reaction and one for maternal Alienation.

In both models, maternal personality and relationship quality were no longer significant predictors of participation. The reduction in the significance of the relation between the independent and dependent variables when the mediator was added to the model would seem to suggest that statistical mediation exists. However, because the mediator was also not significantly related to participation, such a conclusion cannot be reached. We had to conclude

that relationship quality did *not* mediate relations between maternal personality and home visit participation.

Though the results showed no mediational effect, we thought it important to further explore the data by testing whether home visitors' assessment of relationship quality, when entered separately, predicts participation. Results indicated that home visitor reports of the relationship were indeed related to home visit participation scores, $F(1, 40) = 6.82$, $p = .01$. Given that maternal personality and relationship quality were both significant predictors of participation when entered separately, it seems likely that low statistical power made it difficult to detect significant results when they were entered simultaneously.

Discussion

In response to low participation rates in home visit programs, and a dearth of research explaining this phenomenon, the purpose of the current study was to examine personality and mother-home visitor relationship quality as predictors of home visit participation. We speculated that the quality of the home visitor-mother bond would mediate associations between personality and home visit participation. Though the findings did not support our mediational hypotheses, they did indicate that mother and home visitor personality are linked to home visit participation, maternal personality predicts mother-home visitor relationship quality, and that mother-home visitor relationship quality is related to home visit participation.

Four maternal and two home visitor personality characteristics predicted home visit participation. Specifically, maternal personality traits reflecting orientations toward control and achievement were negatively related to home visit time. Conversely, maternal tendencies to be stress-prone and to feel vulnerable and/or taken advantage of (i.e., high Stress Reaction and Alienation scores) were positive predictors of participation scores. Interestingly, home visitor ratings of bond quality were also positively linked to maternal Stress Reaction and Alienation.

One explanation for these findings may be related to how home visitors perceived the needs of mothers in their caseloads. Perhaps home visitors thought home visits are especially important for mothers who are low in planfulness and achievement-striving and who are highly stressed because the services come to the mothers; they do not have to exercise as much initiative to obtain them. Further, if home visitors perceived planful, achievement-oriented mothers as more able to meet their own needs, they may have made fewer attempts to reschedule cancelled visits or to reach mothers when work schedules preclude easy access. Perhaps home visitors tended to think that such mothers would call when they needed visits. Less planful, achievement-oriented mothers might have been perceived as needing the home visitors' assertive initiation.

Along the same lines, mothers who showed more negative emotionality (higher Alienation and Stress Reaction scores) may have elicited reactions from home visitors that resulted in more and longer visits. Stress-proneness combined with (or partially caused by) the stressors inherent in poverty circumstances would likely lead to "crises" needing a response. In this situation, these mothers may have presented as more needful to home visitors, thereby contributing to higher participation rates. Our findings that maternal Stress Reaction and Alienation scores predicted relationship quality support this notion. With more issues to work on, highly stress-prone mothers may have been more likely to draw the home visitors into personal relationships.

Interestingly, some mothers appear to have been aware of the connection between perceived neediness and provision of services. One mother in this study who was also a participant in a related qualitative study answered our question about Early Head Start by telling us that, "Well, it's all good but I think you really have to be in a position where you need a lot of help to really get the full benefit of the program." An alternative explanation comes from anecdotal data that suggest home visits are more difficult to complete with working mothers. It would seem

plausible that mothers who are high in control and achievement-orientation, and low in Stress Reaction and Alienation, are more likely to be have sustained employment than are other mothers. The logistical challenge of scheduling visits with such mothers, who are perhaps more likely to work long hours, may interfere with home visiting. One mother who was rarely contacted by her home visitor seemed to accept the home visitor's explanation that she was difficult to reach and didn't need much help anyway. This mother told us that, "I don't see [my home visitor] that much. Right now I don't have time to see her. I've been working overtime. I mean she helped me when I was looking for a job. I don't really need any help with this other stuff." The "other stuff" included parenting and college enrollment issues. Along similar lines, Cole, Kitzman, Olds & Sidera (1998) found that mothers with more problematic intrapersonal skills received more visits from nurse home visitors than higher-functioning mothers. Future studies should investigate the extent to which the amount of stress, or extent of unmet need, experienced by mothers moderates relations between personality and home visit participation.

Home visitor characteristics also helped explain home visit participation rates. In terms of emotionality, the pattern was opposite that of mothers. Home visitor satisfaction with life (higher scores for Well-Being) and low levels of irritability (lower scores for Stress-Reaction) were positively associated with home visit participation. Perhaps these characteristics are related to home visitors' skills in establishing relationships. In addition, it may be that a personality given to positive emotionality is especially important for social service providers whose work takes them into high stress situations. Individuals prone to negative emotionality may find the difficult circumstances of parents such as those in our low-income sample overwhelming. Lower home visit participation may reflect conscious or unconscious desires on the part of home visitors to avoid upsetting themselves. It may be easier for individuals prone to more positive

emotionality (as reflected in high Well-Being and low Stress-Reaction scores) to cope with these situations.

Though home visitor assessment of relationship quality did not mediate relations between personality and participation, the link between home visitor assessment of relationship quality and participation merits discussion. The finding is in accord with research showing positive associations between client-therapist perceptions of ability to connect and satisfaction with psychotherapy (Bordin, 1979; Horvath & Greenberg, 1989). It also supports the notion that the success of home visiting interventions depends on the bond between home visitors and parents (Barnard, 1998; Klass, 1996; Wasik et al., 1990).

Two implications for practice flow from this study. First, our findings suggest that the needs of mothers who seem to have fewer problems than other mothers may be overlooked in home visiting programs. Particularly in low-income populations, even mothers who are functioning relatively well are likely to benefit from assistance with a variety of life issues, including those related to child development and parents' education and employment. While some families may need more service than others, staff should be careful to attend to the needs of families who are not in crisis.

In addition, because home visitors indicating overall higher well-being and less stress tended to have higher participation rates than their counterparts, the issue of work environment needs to be addressed. Perhaps program supervisors and administrators need to attend to the stressful conditions home visitors are exposed to and place emphasis on minimizing such conditions and/or helping home visitors cope with the inevitable stressors of their jobs. A system of reflective supervision wherein the home visitor has a supportive relationship with the supervisor may decrease the stressful impact of working with families in poverty. Implementing an employee feedback system whereby home visitors could comment on aspects of their work

conditions that induce stress and that, conversely, are conducive for productivity may provide a helpful beginning. Such in-house evaluations have been recommended by other researchers of home visiting programs (The David and Lucile Packard Foundation, 1999).

A limitation of our research concerns the number of analyses conducted. According to Bonferroni's correction, only p values $< .01$ should be considered significant. However, given the exploratory nature of our study, we consider it more important to possibly risk Type 1 error than to lose the potential for important findings via Type 2 error. Another limitation is related to the small number of mothers, and especially home visitors, in our sample. Future research on larger samples may help determine, for example, if the lack of support for our mediational hypotheses was due to low statistical power. However, the fact that some reliable results were found despite the sample size suggests that those predictors that did emerge as significant are indeed related to home visit participation.

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PREDICTORS AND OUTCOMES OF PROGRAM PARTICIPATION, AND CORRELATES OF CHILDREN'S COGNITIVE DEVELOPMENT AT THE EDUCATIONAL ALLIANCE'S EARLY HEAD START

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Background And Research Questions

This is a brief summary of predictors and outcomes of participation in the Early Head Start (EHS) program of The Educational Alliance in New York City. Correlates of children's cognitive development are also explored. The Educational Alliance, a Settlement House serving families on Manhattan's Lower East Side for over 100 years, provided center-based EHS services at two sites:

- The EHS center at the Educational Alliance.
- Teen-Aid High School—a New York City Board of Education program for pregnant and parenting teens.

Many families randomly assigned to EHS did not actually participate in the program—42 percent of children assigned to EHS were rated by program staff as having "poor attendance" at the EHS childcare centers. Two research questions thus emerged from this context:

- What family characteristics predicted EHS program participation?
- What child and family characteristics were affected by EHS program participation?

In addition to exploring outcomes of participation, we were also interested in exploring correlates of children's cognitive development, as a first stage toward modeling pathways to gains in cognitive development. This inquiry was guided by the final research question to be addressed in this study:

- What child and family characteristics were associated with children's cognitive development?

Method

Research Participants

Participants included all those families who were randomly assigned at either Teen Aid or the Educational Alliance (N = 141). Demographic characteristics of the sample collected at baseline are presented below in Table 1.

TABLE 1
SAMPLE FREQUENCIES

	Frequency	Percent
Ethnicity		
African-American	59	48%
Hispanic	51	41%
Asian	8	6%
Caucasian	2	2%
Mixed	3	2%
Caribbean	1	1%
Did not identify	17	
Family's country of origin		
Puerto Rico	22	16%
Dominican Republic	3	2%
Mexico	4	3%
Caribbean Island	7	5%
USA	89	61%
China	6	4%
Indian	1	1%
Guatemala	1	1%
Ecuador	3	2%
Panama	1	1%
Central American Country	2	2%
Puerto Rico/Dominican	1	1%
West Indian	1	1%
Mother's age at child's birth		
14-15	10	7%
16-17	42	31%
18-19	24	18%
20-29	31	30%
30-39	16	12%
40(+)	2	2%
Primary language in the home		
English	109	77%
Spanish	25	18%
Chinese	6	4%
Other	1	1%

Marital Status		
Single	67	64%
Live with partner or Married	31	29%
Separated or Divorced	5	5%
Widowed	1	1%
Educational Status		
Some Junior High School	2	2%
Graduated Junior High School	7	7%
Some High School	64	68%
Graduated Junior High School	6	6%
GED	2	2%
Some College	7	7%
College Graduate	6	6%
Status of Baby's Father		
Residential	28	32%
Not residential, but involved with child and mother	33	37%
Not residential, but involved with child only	4	5%
No contact/not involved	23	26%
Social Services		
AFDC	29	36%
Medicaid	77	82%
Food stamps	25	31%
WIC	63	78%
SSI/SSD	9	11%

Note: Due to missing data, not all categories total to 141

Program Participation Ratings

EHS staff rated families on two dimensions of program participation—child attendance at the EHS childcare centers and parent involvement with EHS social service staff. Ratings were based upon a four-point scale. Consistency of a children's attendance was rated as "Poor," "Fair" "Good" or "Excellent." Ratings of how often parents worked with EHS social services staff ranged from "Not at all" to "Occasionally" to "Fairly Often" to "Regularly." Ratings were generated at the end of the completion of the program. For this analysis, children's attendance was collapsed into one of two categories—"Fair to Excellent Attendance" or "Poor Attendance."

For the analysis of predictors of program participation, only those randomly assigned to EHS were included (N = 67). For the analysis of outcomes of participation, those randomly assigned to EHS, but rated "Poor Attendance," were excluded. Thus in the analysis of outcomes of participation, the "Fair(+) Attendance" variable contrasts EHS families whose children had fair to excellent attendance (N = 39) with the control group (N = 71). The rationale for this grouping was to compare children who participated in the EHS program with those who did not.

Table 2 summarizes children's attendance and parent involvement by site. As can be seen in the final row of Table II, parent involvement was almost twice as great at the Teen Aid site, compared to the Educational Alliance site (51 percent versus 28 percent). This difference was likely due to the program setting. Teen Aid mothers were attending high school on-site, thus they were available to work with the EHS social worker most school days.

TABLE 2
CHILD ATTENDANCE AND PARENT INVOLVEMENT BY PROGRAM SITE

	Frequency	**Percent**
Total Randomly Assigned	141	100%
Randomly assigned through the Educational Alliance	77	55%
Randomly assigned through Teen Aid	64	45%
Total assigned to EHS	70	50%
Total assigned to control group	71	50%

TABLE 2A
CHILD ATTENDANCE AND PARENT INVOLVEMENT BY PROGRAM SITE

	Combined Sites	Ed. Alliance	Teen Aid	Combined Sites	Ed. Alliance	Teen Aid
Child Attendance	67[1]	36	31			
Poor	28	14	14	42%	39%	48%
Fair	11	3	8	16%	8%	28%
Good-Excellent	28	19	9	42%	53%	32%
Parent Involvement	67[1]	36	31			
Not at all	22	14	8	33%	39%	26%
Occasionally	19	12	7	28%	33%	23%
Fairly Often-Regularly	26	10	16	39%	28%	51%

[1]Staff unable to rate 3 families

Instruments

Dyad Ratings

Children and their caregivers were videotaped playing together in their homes. Observations were conducted during home visits when children were six, fourteen, twenty-four, and thirty-six months old. Dimensions mothers were rated on included positive affect, positive touch, positive verbal reinforcement, responsiveness, emotional attunement, participation with child, structuring, overall consistency, language use, caregiver, quality of language, use of teaching loop, achievement orientation, inventiveness with toys, and sophistication of play. Factor analysis demonstrated that these dimensions loaded on a single factor, termed "Maternal Didactic Responsiveness". Dyadic interaction was rated on three dimensions—mutual enjoyment, mutual communication, and reciprocal interaction. Factor analysis demonstrated these dimensions loaded on a single factor, termed "Dyad Mutuality". Ratings of children's language use and communication abilities formed the "Child Quality of Communication factor". Children's positive affect and positive touch formed the "Child Positive Affect factor".

Scale Scores

Measures from the national evaluation collected when children were 14 and 24 months were included in the analyses. Additionally, Bayley Mental Development Index (MDI) scores from 36 months were also included. Scales and observational measures from our local research study were administered when children were six, 14, 24, and 36 months old. Table 3 reports on the psychometric properties of scales in our local survey that were included in this report.

Results

Predictors of Participation

All scale scores and dyadic observation measures included in our six-month assessment were tested against the two measures of EHS program participation—child attendance and parent involvement ("Fair to Excellent Attendance versus Poor Attendance" and "How Much Parents Worked with EHS Social Service Staff"). These data may not have constituted true baseline measures for all families, as a few children began attending the EHS center-based care from the age of 4 months; but they represent our earliest data from our families.

As can be seen in Table 4, exposure to violence significantly lowered the degree to which families participated in the program. Cultural values also affected participation. More traditional cultural values were associated with lower program participation. These findings give rise to the question of whether cultural values might have been associated with exposure to violence. Follow-up analyses showed no significant correlation between cultural values and exposure to community or domestic violence.

Fathers—both in mothers' family of origin, and in babies' current family—played a significant role in affecting program participation. Current father involvement predicted higher attendance and involvement with social service staff. Harsh fathering that mothers experienced

TABLE 3
INTERNAL CONSISTENCY OF LOCAL MEASURES[1]

Psychosocial Variables – Support, Psychological Well-Being	hronbach's Alpha
Practical Support – Vaux Social Support Record	.74
Emotional Support– Vaux Social Support Record	.62
Advice and Guidance Support– Vaux Social Support Record	.74
Support from EHS: All staff	.88
What I Got from EHS: Growth as a Parent	.95
What I Got from EHS: Personal Growth	.92
What I Got from EHS: Family Program Bond	.96
What I Got from EHS: Child Development	.93
Working Alliance Inventory Total (WAI)	.97
Conflict in Approach – WAI	.78
Goal – WAI	.97
Emotional Bond – WAI	.96
Merhabian Empathy Scale	.83
Parenting Stress Inventory (PSI): General	.88
Parenting Stress Inventory (PSI): Child	.86
Maternal Efficacy Scale	.92
PTSD (Impact of Events Scales)	.91
Center for Epidemiological Studies-Depression scale (CES-D)	.86
Parental Acceptance and Rejection Questionnaire (PARQ): Mother Was Loving/Accepting	.95
PARQ: Mother Was Harsh and Rejecting	.95
PARQ: Father Was Loving/Accepting	.97
PARQ: Father Was Harsh and Rejecting	.94
Parent Stress Inventory (PSI): General Stress	.88
PSI: Stress Related to Parenting	.95
Parenting	
Maternal Self Rating: Didactic	.86
Maternal Self Rating: Nurturing	.83
Maternal Self Rating: Autonomy Support	.78
Mother's Rating of Child's Father: Didactic& Nurturing	.98
Mother's Rating of Child's Father: Autonomy Support	.85
Mother's Rating of Ideal Father: Didactic& Nurturing	.98
Mother's Rating of Ideal Father: Autonomy Support	.80
Modernity: Traditional Values/Respect for Authority	.77
Modernity: Value children having their own point of view	.77
Modernity: Belief that children will naturally misbehave unless taught to behave	.55
Child Development 36 mo	
Social Skills Rating System (SSRS)-Positive Social Behaviors	.95
SSRS-Negative: Disrupts, Aggressive, Loner	.86

[1]References for all scales are included at the end of this article

TABLE 4
ANTECEDENTS OF EHS PARTICIPATION: PSYCHOSOCIAL VARIABLES ASSESSED WHEN CHILD WAS SIX MONTHS OLD
N = 20-40

Sample: Only families randomly assigned to EHS	**Fair (+) Attendance vs. Poor Attendance**	**Degree of Involvement With EHS Social Service Staff**
Exposure to Violence		
Total Community Violence Experienced: Past 5 Years	-.41*	-.32t
Total Domestic Violence Experienced: Past Year	-.46*	-.40*
Witnessed/Aware of Domestic Violence toward Others	-.39*	-.36t
Psychosocial Variables		
PARQ: Harshness/Rejection by Father (family of origin)	-.40t	
PARQ: Love/Acceptance by Father (family of origin)	.32t	
Maternal Efficacy		.44*
Cultural Variables		
Modernity: Belief that it is good for children to have their own point of view		.38t
Modernity: Belief that children will naturally misbehave unless taught to behave		-.47*
Support from Baby's Father		
Living With Partner (husband/living as married)	.36*	
Baby's Father is a Caretaker	.35*	.35*
Social Support from Baby's Father	.33t	

* $p < .05$, t $p < .1$

in their families when they were growing up was associated with lower attendance. Warm, accepting fathering was associated with higher attendance.

Measures of quality of parenting, quality of mother-infant interaction, maternal mental health, social support (except from baby's father), and the quality of the relationship between EHS mothers and their own mothers when they were growing up (family of origin) were not significantly associated with participation. Only correlations that reached at least a trend toward significance are reported in Table 4.

Outcomes of Participation

Measures tested as outcomes of participation included measures from the national evaluation that were collected when children were 14 and 24 months old, and 36 month Bayley

MDI scores, and measures collected in the local outcome research when children were 14, 24 and 36 months of age. Fourteen-month assessments may occur too early to be considered outcome measures. However, most families at the Teen Aid EHS site completed their tenure at Teen Aid High School before their children turned two years old. Thus for one of our two EHS centers, the 14-month assessment was often the last assessment that occurred during families intensive period of EHS participation. Therefore, we are including measures from the 14-month assessment in the table of outcomes presented below.

Children's cognitive development was associated with both program participation variables at each age milestone, as the MDI-Participation correlations below demonstrate. Moderately strong effects for participation on children's social development were also found (SSRS-Positive Social Behaviors). Moderately strong program effects on children's language were demonstrated by correlations between participation and the Vineland Communication Domain and the Child Quality of Communication dyad rating.

Parental domains significantly associated with participation included quality of parent-child interaction, quality of parenting, discipline strategies, parenting stress, psychological well-being, and social support. Table 5 presents correlates with program participation. Only correlations that reached at least a trend toward significance are reported.

TABLE 5
OUTCOMES OF PARTICIPATION:
FAMILIES WITH FAIR-TO-EXCELLENT ATTENDANCE VERSUS CONTROL GROUP FAMILIES
N = 40-86

Sample: Families randomly assigned to EHS with "Poor Attendance" were excluded from this sample.	**EHS Fair (+) Attendance vs. Control Group**	**Worked with Social Service Staff**
Variables from the National Study (n = 70-86)		
Cognitive Development: MDI (Bayley) Scales		
MDI 36 mo	.32***	.25**
MDI 24 mo	.28*	.25*
MDI 14 mo	.37**	.31**
Parenting		
14 mo High chair: Warm	.30**	.19t
14 mo High chair: Positive Regard	.25*	
14 mo High chair: Sensitivity	.32**	.22t
24 mo Discipline: Prevent-Distract	.31**	.30**
24 mo Mild Discipline Only	.28*	.31**
14 mo Discipline: Prevent-Distract	.31**	.30**
24 mo HOME: Non-punitive		.25t
14 mo Parent-Child Play	.21 t	.19 t
14 mo Reading at bedtime	.25*	
Mental Health		
14 mo Depression (CES-D)	-.27**	-.24*
14 mo Parent Mastery	.23*	.26*
24 mo Parental Stress (PSI)	-.30**	-.27*
24 mo PSI Parent-Child Dysfunctional Interaction	-.40***	-.36**
Variables from the Local Study (n=40-84)		
Dyadic Interaction (Coded from Videotaped Interaction)		
Maternal Didactic Responsiveness	.22 t	.23*
Dyad Mutuality	.27*	.30*
Child Quality of Communication	.29*	.28*
Child Positive Affect	.29*	.30*
Self-Rated Psychosocial Variables and Parenting		
Psychosocial 36 mo		
Practical Support	.28*	
Emotional Support	.25t	
Advice and Guidance Support	.43**	33*
Empathy	.26*	
Parenting Stress	-.27*	-.26*
Maternal Self Rating: Didactic		.22*
Maternal Self Rating: Autonomy Support		.25 t
Mother Rated Child Development		
SSRS-Positive Social Behaviors	.42*	.38*
Vineland-Communication	.34t	.35*
Vineland-Motor	.27t	

** $p < .01$, * $p < .05$, t $p < .1$

Correlates Of Children's Cognitive Development

A wide range of variables demonstrated significant association with children's cognitive development, as indexed by MDI scores. The quality of parenting, the quality of parent-child interaction, parent psychological well-being, social support, quality of EHS program engagement, cultural values and other domains of child development all demonstrated significant correlations with MDI scores.

Observational measures of quality of parenting showed substantial associations with cognitive development at 24 and 36 months. Quality of parenting at six months (Maternal Language, Play, and Emotional Availability) was a fairly strong predictor of MDI scores at 24 months and 36 months. Similar findings were found for quality of parenting at 14 months. Maternal Rich Language (coded only at 14 months) was a moderately strong predictor of child cognitive development at 24 months. The high-chair parent-child observation measures from the 14-month national evaluation battery also demonstrated a pattern of correlations with cognitive development at all three age milestones.

The quality of parent-child interaction, as measured by Dyad Mutuality, was significantly associated with cognitive development at 24 and 36 months. Dyad Mutuality at six months was predictive of 36 month MDI. Dyad Mutuality at 24 months was associated with MDI scores at both 24 months and MDI 36 months. Dyad Mutuality at 36 months was associated with the 36 month MDI.

Self-rated parenting measures demonstrated a pattern of findings similar to the observational parenting measures. Mothers' ratings of their teaching (Maternal Self Rating: Didactic), nurturing (Maternal Self Rating: Nurturing) and Autonomy Support (Maternal Self Rating: Autonomy Support) were all associated with cognitive development at 36 months.

Father involvement was associated with children's cognitive development. Mothers' ratings of babies' fathers' autonomy support was significantly associated with cognitive development at 36 months. Mothers' reports of time fathers spent with their children and time spent playing, reading or talking to baby were associated with cognitive development at 14 months. Interestingly, there was a very strong relationship between how much mothers valued father involvement--Ideal Father: Didactic/Nurturing and Ideal Father: Autonomy Support—and cognitive development.

The relationship between children's cognitive development and the quality of their home environment was demonstrated by positive correlations between HOME observations (total HOME score) at 14 months and cognitive development at 14 and 24 months.

A variety of measures of social support were associated with child cognitive development. Total emotional support and advice and guidance support at 36 months were associated with 36-month MDI scores. Support mothers received from babies' fathers at 14, 24 and 36 months predicted 36-month MDI scores. Support from mother at 14 and 36 months was associated with 36-month MDI scores

Program involvement variables were associated with child cognitive development (only families randomly assigned to EHS were included in this analysis). Five program involvement variables—Social Support from EHS staff, "What I Got from EHS: Growth as a Parent," "What I Got from EHS: Family-Program Bond," "What I Got from EHS: Child Development," and the Working Alliance Inventory Goal Disagreement subscale (a negative measure of involvement)—were associated with cognitive development at 14 and 36 months. The stronger pattern of findings for 14 months is likely due to the fact that many families at the Teen Aid site completed their stay at the EHS center by the time their children were 14 months of age.

Measures of parent's emotional well-being were significantly associated with children's cognitive development. Symptoms of posttraumatic stress disorder yielded significant negative correlations with MDI scores at 24 and 36 months. Parenting stress was negatively associated with cognitive development at 36 months. Harsh, rejecting parenting by fathers, in mothers' families of origin, was negatively associated with cognitive development at all three age milestones. The quality of mothering in mothers' families of origin was associated with MDI scores at 14 and 24 months.

Other aspects of child development also demonstrated significant association with cognitive development. Social development showed a strong correlation with cognitive development (SSRS Positive Behaviors, Negative Behaviors; Vineland Social Domain). Other indices of social behavior, including negative behaviors with parent on observational measures also yielded significant correlations with cognitive development at 24 and 36 months. Mother's ratings of children's distractibility, difficult temperament, and difficult behavior were associated with lower MDI scores at 36 months. Children's health, as rated by their mothers, was associated with cognitive development at 36 months. As would be expected, language development was strongly associated with MDI scores.

Table 6 presents the magnitude and statistical significance of the correlates of children's cognitive development. All families in the study are included in these analyses. Only correlations that reached at least a trend toward significance are reported.

TABLE 6
CORRELATES OF CHILDREN'S COGNITIVE DEVELOPMENT
N= 31-104

	Cognitive Development at Age Milestones		
	MDI 14 mo	**MDI 24 mo**	**MDI 36 mo**
National Survey Variables (N = 50-104)			
Parenting			
14 mo High Chair: Warm		.34**	.28*
14 mo High Chair: Positive regard	.25*	.35**	.34**
14 mo High Chair: Sensitivity		.28*	
14 mo discipline-remove object	.17 t	.22 t	
14 mo HOME Total	.26**	.24*	
Mental Health			
14 mo Depression (CES-D)	-.28**	-.19 t	-.23*
14 mo Parent Mastery	.17 t		.32**
24 mo Parental Stress			-.26 t
24 mo PSI Dysfunctional Parent-Child Interaction	-.48***	-.54***	.43**
Quality Of Parent Child Relationship Dyad Ratings And Language Codes (N = 31-84)			
36 mo Dyad Mutuality			.29**
36 mo Child: Participation with Caregiver			.32**
36 mo Child: Low Emotional Regulation/Aggressive Behavior toward Caregiver			-.24*
36 mo Child: Quality of Communication			.40***
36 mo Child: Positive Affect			.22*
24 mo Dyad Mutuality		.43***	.30**
24 mo Child Language Quality		.53***	.38***
24 mo Child: Low Emotional Regulation/Aggressive Behavior toward Caregiver		-.31**	-.22 t
24 mo Child Persistence			.24*
14 mo Maternal Language, Play, and Emotional Availability		.36**	.27 t
14 mo Maternal Intrusiveness & Rigidity		-.36*	
14 mo Maternal Rich Language Factor		.42***	
6 mo Maternal Language, Play, and Emotional Availability		.43**	.46***
6 mo Dyad Mutuality			.28*
Psychosocial and Parenting Variables from NYU survey (n = 31-66)			
Social Support: Ehs Program, Family, Baby's Father			
Support from all EHS staff1	.25*	.30*	
Working Alliance Inventory Goal Disagreement1			-.39*
What I Got from EHS: Growth as a Parent1	.35*		.27 t
What I Got from EHS: Family-Program Bond1	.31t		
What I Got from EHS: Child Development1	.36*		
36 mo Emotional Support			.27*
36 mo Advice and Guidance Support			.33**
36 mo Support from baby's father			.27*
24 mo Support from baby's father			.30**
14 mo Support from mother	.35*		.35*
14 mo Support from father			.23 t
14 mo Support from baby's father			.26 t

	Cognitive Development at Age Milestones		
	MDI 14 mo	**MDI 24 mo**	**MDI 36 mo**
Parent Mental Health			
36 mo PTSD symptoms (IES)			-.39***
24 mo PTSD symptoms (IES)		-.43***	-.37**
36 Parenting Stress—General (PSI)			-.39**
36 Parenting Stress--From Child (PSI)			-.32*
Family of Origin: Mother was Loving & Accepting	.48**		
Family of Origin: Mother was Harsh & Rejecting		-.30*	
Family of Origin: Father was Harsh & Rejecting	-.28t	-.39*	-.39**
Parenting (Self-Rated)			
Maternal Self Rating: Didactic			.23t
Maternal Self Rating: Nurturing			.20t
Maternal Self Rating: Autonomy Support			.25*
Mother Rating of Father's Autonomy Support			.25*
Mother Rating of Ideal Father: Didactic/Nurturing		.28*	.50***
Mother Rating of Ideal Father: Autonomy Support			.28*
14 mo Time Father spends with child	.31*		
14 mo Time Father spends playing, reading or talking to baby	.34**		
Child Temperament			
Distractibility (DOTS)			-.29*
Difficult temperament (CHQ)			-.30*
Child Social Development			
SSRS-Positive Social		.29*	.50***
SSRS-Negative: Disrupts, Argues, Loner			-.33*
Child Health Questionnaire -Negative Behavior		-.29*	-.32*
Vineland Social Development Domain		.44**	.58***
Child Health			
Mother's rating of child's general health (CHQ)		-.38**	-.31**

[1] (EHS families only) ***p < .001, ** p < .01, * p < .05, t p < .1

Summary and Discussion

The findings from this study demonstrated that participation in the Educational Alliance's Early Head Start was negatively affected by exposure to community and domestic violence. It seems likely that this would be the case in other EHS programs as well. Programs may need to make greater outreach efforts to overcome the barriers to participation created by exposure to violence.

Further research is needed to better understand the mechanisms by which exposure to violence suppresses participation. It may be that families do not want their situation to come to light because of feelings of shame, or because of fears of legal action that may result in their

custodial rights being threatened. Further research into this question could guide better outreach efforts to these vulnerable families.

Similarly, traditional cultural values may also present barriers to participation. Families may fear that their values will not be respected, and that their authority with their children will be undermined. What approaches would be most effective in this situation is an open question. Is it best if differences are openly acknowledged in a climate of respect for different value systems? Can parents who are members of the traditionally oriented culture, and who have bonded with the EHS program play a role in building bridges to other families? Further research is needed to evaluate different approaches to effective outreach to families whose values are more traditional than those of the EHS program.

Father involvement supported participation. It was somewhat surprising that father support was such a robust predictor of participation; especially given how few of the wide range of potential predictors tested yielded significant effects. However, the importance of fathers has been consistently demonstrated in the EHS father research initiative. Further research is needed to explore the mechanisms through which father support promotes participation.

The pattern of findings generated from parent's experiences in their families of origin was very interesting. When parents experienced their fathers as harsh and rejecting, attendance was likely to be lower. Conversely, when parents experienced their fathers as loving and accepting, attendance was likely to be higher. Similar scales (PARQ) also tapped parents' feelings about the relationships they had with their mothers when they were growing up; but maternal acceptance and rejection was not associated with attendance. One possible explanation for this set of findings is that the group means for the maternal acceptance dimension was considerably higher than for fathers' acceptance and rejection, and the father harshness and rejection mean was distinctly greater than the maternal harshness and rejection mean. In other words, most

parents reported fairly benign relationships with their mothers when they were growing up, but many parents experienced rejection and harshness from their fathers. Therefore the father relationship dimensions had greater variance and thus greater statistical power. In a much larger sample, the maternal dimensions might have also predicted EHS program participation, but they lacked the statistical power to generate significant correlations in this sample.

Maternal efficacy (when babies were six months old) was positively associated with involvement with EHS social service staff. (There was no effect for maternal efficacy on children's attendance.) Maternal efficacy is an indicator of how much confidence a parent has in confronting the challenges of raising a young child. Thus this finding suggests it was easier for more confident mothers to engage, or "open up" with EHS social service staff. Hopefully, EHS family workers are well aware that mothers who are less confident or secure in their mothering abilities are likely to hold back from involvement.

Families who apply for EHS and then do not participate in the program can easily be forgotten. EHS programs are fully occupied by serving the families that actively seek their services. Understandably, programs are unlikely to devote their energies to pursuing families who may appear uninterested or unmotivated. Findings in this study though suggest that families who withdraw may do so for very different reasons, with very different implications. Therefore it seems very important for programs to understand as deeply as possible the individual reasons behind withdrawal and low involvement. When families withdraw because there is not a good fit between the child-rearing values of the program and of the family, there is no cause for immediate alarm for the safety and well-being of the child or the family. However, programs may question whether they are sufficiently inviting and inclusive toward all segments of the communities they serve when this is the reason for family withdrawal.

When family withdrawal from an EHS program is related to the lack of father involvement, it is possible that the underlying issue is that the mother lacks the support and resources necessary to sustain involvement. At least in New York City, the tasks of bringing a child to the EHS center and picking up the child again can involve complex and time consuming travel arrangements. Greater family resources make attendance and involvement more likely. Recent research on father involvement makes clear that father involvement translates into greater family resources. (Ongoing EHS research on father involvement may reveal more sophisticated explanations of how fathers affect family childcare decisions.) Thus EHS programs might be alert to the lack of father involvement as an indicator that families new to EHS may need extra attention and support if they are to maintain attendance and involvement.

The most ominous reason (of those uncovered in this study) for a family to withdraw from EHS is exposure to violence. Children and families in these situations are clearly at high risk. Of course EHS programs cannot always know whether domestic violence or community violence is a dynamic in a family's withdrawal. But EHS staff could explicitly address the question to themselves as to whether any warning signs of violence were evident when families "disappeared." Further research is needed to explore the magnitude of this problem; and, if necessary, to increase EHS awareness of its dimensions.

Outcomes of Participation

The Educational Alliance's Early Head Start program demonstrated a wide range of benefits for child development, parenting, and parental psychological well-being. The literature on early intervention programs demonstrates that "Two-Generation" program models are necessary to provide benefits to both children and parents. The Educational Alliance's EHS program sought to provide direct services to both children and parents, and the data supports the view that the Educational Alliance EHS program was an effective Two-Generation Program.

Child development benefits were found in the realms of cognitive, social, and language development. Cognitive development benefits were manifested at each age milestone. Effect sizes were of moderate strength (average r = .32). The effect size for social development was also moderately strong (SSRS r = .42, .38). Similar effect sizes for communication gains were also found (Ratings of the Quality of Children's Communication, Vineland Communication Domain, average r = .32).

A range of parenting variables yielded significant correlations with program participation. Small but significant effect sizes were found for observational measures including the high-chair scales, and HOME, and local coded videos (Maternal Didactic Responsive Factor). Survey ratings of parental discipline and parenting also yielded significant correlations with participation. Confidence in these findings is increased by the multi-method nature of the data—both observational measures and survey measures supported the benefits of program participation on parenting and parent discipline strategies.

Program participation showed moderately strong effects on self-report measures of psychological well-being. Dimensions showing significant program effects included emotional distress, depression, parenting stress and social support. Effect sizes ranged from small to moderately strong.

Eliminating the families whose children did not attend the program raises the question of bias. Indeed, the first set of analyses reported in this paper demonstrated that low participation was not a random phenomenon. Families with higher levels of exposure to domestic violence and community violence were less likely to participate in the EHS program. Families with higher father involvement were more likely to participate in the EHS program. Neither exposure to violence or father involvement were significantly associated with children's cognitive development in this study, thus it is unlikely that the pattern of findings that emerged were

substantially affected by lower levels of these variables in the EHS program families. Further, exposure to violence at baseline was a predictor of sample attrition for control group members, as well as a predictor of lower levels of program participation. This attrition probably balances out some of the effects of eliminating "poor attendees" from the EHS group. However, it is possible that some of the parent domain gains may have been enhanced by the exclusion of the "poor-attendance" group.

One purpose of this initial investigation was to identify factors to test as potential moderators of program effects. Exposure to violence, cultural child-rearing values (Modernity) and father involvement have emerged as candidates for inclusion in future analyses.

In summary, the data support the effectiveness of the Educational Alliance's Early Head Start program in promoting child and family development, for those who actually participated in the program. But it seems unlikely that this range of benefits could have emerged from an analysis that did not take the substantial rates of program nonparticipation into account. An analysis of those who actually participated in the program is crucial for answering the research question "What benefits can be reasonably expected from participating in Early Head Start?"

Correlates of Children's Cognitive Development

A wide range of factors was associated with children's cognitive development, including the quality of parenting and the quality of parent-child interaction, parents' emotional well-being and social support, children's social development, children's health, and the quality of families' involvement with the EHS program. Some, or all, of these dimensions may have been pathways to children's cognitive gains at the Educational Alliance's EHS program. Indeed, parenting, parent-child relationship, and parents' social support and psychological well-being were all positively affected by program participation. Of course, the direction of causality is ambiguous, and likely not uni-directional in these reported associations. But our purpose here was not to test

mediators through path analyses, but to illustrate that children's cognitive development is embedded in multiple levels of systems, at the child, family, and program levels. The implication of these findings is that early intervention programs are likely to be increasingly effective, to the degree that they are able to address each level of the system in which children's cognitive development is embedded.

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A NOTEWORTHY PATTERN OF EARLY HEAD START PARTICIPATION: ENROLLMENT==>WITHDRAWAL==>RESUMPTION

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There is always value in listening to the direct testimonials of program clients, but this particular mother's story has an interesting twist. She withdrew from the Educational Alliance's Early Head Start (EHS) program, and sought other arrangements for her two-year-old daughter. (The Educational Alliance Early Head Start program provided center-based EHS services, and was open for children from 9 a.m. until 3 p.m.) Eventually, she chose to return to the EHS program. Thus this is not a narrative about a family that was completely satisfied with EHS from start to finish. Here is her story, in her own words, about leaving, and returning, to EHS.

Mother left the EHS program because of concerns about teacher turnover, and her need for full-day childcare:

> Well, now this teacher seemed like she was good, she worked two months, September, October, two, three months and now she's gone. But she was good. Oh, my daughter loved her. She was there such a short time. Well, I guess it took my daughter a while to get to know her but sometimes I was holding her and she wanted me to put her down so she could run to the teacher and the teacher was very affectionate. So I don't know what's going on, I don't know…and I was looking into other programs because I need to work full-time. I need to work 9 to 5. I have a lot of bills, a lot of responsibility. A part-time job would not be enough. So I was looking into other programs, I like programs. I don't like babysitters at home. I'm really against that. I don't like it. I feel comfortable when my child is in a center.

Mother's experience at new child care center:

> Yes it was a day care, it was full day…It was very terrible. I argued with the teacher. My daughter was just there for a week. She didn't eat. She cried every as soon as I left her until I picked her up… Yes, and I don't blame her because of the way they were. I'm leaving her there with strange people she's never seen before, and she starts crying. Their policy is to ignore the child—'They have to learn.' And, no, I don't think so, I don't agree. If a child is coming into a strange environment that child needs to feel comfortable, needs to feel loved. Maybe in the first week, that first week, that child needs attention, yes, needs special attention. They need to pick up the child, make them feel comfortable, take them towards the toys, try to play with them and then the child becomes comfortable. But no, they don't do that. … and so one of the teachers, she was from my country, she said, 'Oh remember back home, the way they were, you know, the teachers are allowed to hit the children.' And I'm like, 'Oh no no no!' I don't agree with that, but she said that's what they use in this program. Yes. They are allowed to hit the babies on the, they hit the children on the hand. They are allowed to do that. They said that that is allowed. I'm like, 'Oh no!' It was a horror. That school, the other center--no affection at all. Like they were in the military or something, like the lady said, remember back home? That's the way they are. They are very negative. I only tried it because it was an 8 to 6 program.

A series of unsuccessful attempts to find childcare ensued:

> So then I tried another private babysitter and, I mean, my daughter went through such a hard time…I had been to three different caregivers and centers and whatever… I just saw that that Educational Alliance was the best place in the world.

Mother returned to the Educational Alliance Early Head Start Program:

> It was such a relief seeing familiar faces, people that when my baby walks in they hug her, they, and I can't stress…I can't I can't stress it enough I am very grateful that my daughter is in it… Yes and my daughter loves everybody, well, practically everyone, in there. She runs to the toddler room. I feel fortunate I just feel really fortunate to have this program although, well, I really wish it was like, longer hours…I just feel very grateful for Educational Alliance.

Commentary

Clearly, the EHS program does not perfectly meet this family's needs. Full day coverage was a problem for the mother, and it remained a problem for her. The mother has understandable concerns about turnover—her EHS site had a new head teacher every year. But as was reflected in the ratings of classroom quality we obtained from the EHS program versus other childcare settings in the city; the Educational Alliance's EHS program was a much better place for children than most other options available to low-income Lower East Side families. And as was well documented by the recent National Institute of Child Health and Human Development (NICHD) study, low quality childcare is harmful to children. But in spite of the ongoing challenges posed by staff turnover, the EHS staff was reliable, warm and caring. The facilities were always bright, clean, well-furnished and safe. Children were happy to be there.

MOTHER-CHILD LANGUAGE AT 14 AND 24 MONTHS: CONCURRENT AND LAGGED ASSOCIATIONS

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The quality and quantity of caregivers' language is one of the most powerful predictors of children's early language and cognitive development. It is no wonder that a fundamental goal of many Early Head Start practitioners is to encourage parents to engage in frequent verbal discourse with their children, and to do so in ways that are sensitive to children's emergent language, for example by asking questions that elicit children's own verbal participation (e.g., "What is that?" "Where is the cup?"). Importantly, parenting often mediates the impact of early interventions (as also demonstrated in this EHS report), and parents' verbal input accounts for much of the variation linking poverty to compromised child outcomes (e.g., Hart & Risley, 1995). Given the importance of parents' language for children's language and cognition, researchers at New York and Harvard Universities have focused on the amount and diversity of language to which young children are exposed during the period of 14 to 24 months. In this study, transcript data from the two local sites were merged and associations between mothers' language and children's language and developmental status (i.e., Bayley MDI) were explored.

One hundred and forty-six mother-child dyads participating in the research at the New York and Vermont sites, from both treatment and control groups, comprised the sample. Forty-eight percent of participants identified themselves as White, 25 percent as African American, 17 percent as Latina, and 10 percent reflected a combination of other groups (West Indian; Asian; mixed ethnicity). All parents spoke English with their children.

The semi-structured 3-bag task from the national protocol was the basis of mother and child language at both 14 and 24 months. Each videotaped play session was transcribed, and CHILDES (Child Language Data Exchange System; MacWhinney and Snow, 1985) was used to calculate the total number of words (i.e., tokens) and different words (i.e., types) expressed by each mother and child at each age. In addition, the total number of "wh" questions that mothers directed to their children was calculated. Children's Bayley MDI performance and data from the MacArthur CDI were included in analyses.

Findings revealed that mothers and children varied dramatically in their number of word types and word tokens, although children, expectedly, were quite limited in their language at 14 months. At 14 months, the mean Bayley MDI for the sample was 95.8 (SD = 11.2). These scores dropped to a mean of 88.5 (SD = 13.7) by 24 months. On the MacArthur CDI, mothers reported that their 14-month olds comprehended a mean of 49.3 words (SD = 19.60) and produced a mean of 12.2 words (SD = 13.0). At 24 months, children produced a mean of 60.1 words (SD = 22.7) and averaged 9.3 (SD = 8.23) on sentence complexity.

At 14 months, all aspects of maternal language predicted most of the child measures (see Table 1). Specifically, maternal word types, tokens and "wh" questions were consistently associated with children's comprehension and production on the MacArthur, Bayley MDI scores, and the Bayley Language factor. Maternal word types correlated with children's types and tokens, albeit weakly. At 24 months, maternal language measures were associated with every measure in children with the exception of tokens (see Table 2). Although these associations are concurrent in nature, thereby barring causal interpretations, lagged correlations suggest that mothers' earlier language predicts children's language and developmental status over time (see Table 3).

TABLE 1
MOTHER-CHILD ASSOCIATIONS AT 14 MONTHS

	Child Types	Child Tokens	MacArthur Comprehension	MacArthur Production	Bayley MDI	Bayley Language Factor
Mother Types	.17*	.20**	.32***	.20**	.21**	.35***
Mother Tokens	.09	.14	.34***	.19*	.22**	.34***
"Wh" questions	.01	-.06	.25**	.21**	.21**	.31***

* $p < .05$ level; ** $p < 0.01$ level ; *** $p < .001$

TABLE 2
MOTHER-CHILD ASSOCIATIONS AT 24 MONTHS

	Child Types	Child Tokens	MacArthur Comprehension	MacArthur Production	Bayley MDI	Bayley Language Factor
Mother Types	.19*	.06	.36***	.32***	.31***	.26**
Mother Tokens	.22*	.14	.36***	.31***	.26**	.20*
"Wh" questions	.18*	.14	.33***	.25***	.32***	.24*

* $p < .05$ level, ** $p < 0.01$ level ; *** $p < .001$

TABLE 3
ASSOCIATIONS BETWEEN MATERNAL LANGUAGE AT 14-MONTH OBSERVATION AND CHILD LANGUAGE AT 24 MONTHS

	Types	Tokens	MacArthur Comprehension	MacArthur Production	Bayley MDI	Bayley Language Factor
Mother Types	.21**	.11	.30**	.30**	.30***	.30***
Mother Tokens	.20**	.09	.30**	.31***	.32***	.27**
"Wh" questions	.12	.06	.25**	.26**	.31***	.29**

* $p < .05$, ** $p < 0.01$; *** $p < .001$

To explore these lagged associations further, a set of simultaneous regressions were conducted in which the joint contributions of child and mother at 14 months were examined in relation to each child and mother outcome separately at 24 months (see Table 4). Because measures of language within mothers and within children covaried at both ages, particularly types and tokens (rs = .91 and .87 in mothers and .89 and .88 in children, at 14 and 24 months respectively), regressions included only one child and one mother language measure in predictive equations.

As can be seen in the top half of Table 4, for the most part, mothers and children both contributed unique variance to children's language and cognitive outcomes at 24 months. However, children's 14-month language did not predict mothers' later language over and above mothers' own stability (see Table 4). Mothers were highly stable in their language over time. Indeed, the strongest predictor of 24-month maternal language was mothers' earlier language. Children were also stable (in terms of the rank order of individual differences) in their developmental status and language, even in the context of enormous growth in their language competencies over the one-year period.

Together, these findings indicate that mothers' language at the onset of children's language acquisition (here 14 months), is beginning to make a substantial difference in children's emergent cognitive and linguistic abilities. This observation, coupled with the finding that mothers and children are stable in their language across the second year, suggests the importance of encouraging mothers to talk to and ask questions of their children from a very early stage. Parents should be encouraged to regard children as active communicative participants well before they begin speaking with regularity. The stability evidenced in children's language and cognitive performance already by 14 months, albeit in the context of their limited proficiency,

TABLE 4
REGRESSIONS EXAMINING JOINT CONTRIBUTIONS OF MOTHER AND CHILD AT 14 MONTHS TO MOTHERS' AND CHILDREN'S LANGUAGE AT 24 MONTHS

Dependent Measure	14-Month Predictors	Beta	t-value	Total R^2	F
Child 24-Month Language					
Types	Mom Types Child Types	.17 .26	2.17* 3.39***	.11	9.62***
Tokens	Mom Tokens Child Tokens	.06 .28	0.70 3.55***	.09	7.36***
MacArthur Production	Mom Types Child MacArthur Prod.	.23 .39	3.11** 5.24***	.24	23.08***
MacArthur Sentence Complexity	Mom Types Child MacArthur Prod.	.22 .36	2.72** 4.41***	.21	17.04***
Bayley MDI	Mom Types Child Bayley MDI	.23 .46	3.32*** 6.68***	.32	34.27***
Bayley Language Factor	Mom Types Child Bayley Lang. Factor	.12 .47	1.53 6.11***	.27	26.24***
Mother 24-Month Language					
Types	Mom Types	.63	10.16***	.41	55.60***
Tokens	Mom Tokens	.65 .	10.72***	.44	61.08***
"Wh" questions	Mom "wh" questions	.65	10.79***	.42	58.33***

suggests that mothers' language has already begun to affect children's emerging language in children's first year, underscoring the importance of this foundational period of learning.

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PARENTS' PERCEPTIONS OF TRAINING AND SERVICE ACTIVITIES REGARDING THEIR CHILD'S NURTURING AND DEVELOPMENT: IMPLEMENTATION AND BENEFITS OF EARLY HEAD START

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In today's socially conscious society, it is reasonable to assume that families who do not participate in a particular early childhood development intervention have recourse to alternative services. Even in rural locales such service options are increasingly available, but may vary in the quality of what is provided (Perroncel, 2000; Little Hoover Commission, 1998). Annual or quarterly monitoring of a program such as Early Head Start (EHS), may yield information regarding conformity to intended criteria or standards (c.f., U.S. Department of Health and Human Services, 1997), yet fall short in developing a picture of de facto service delivery, especially regarding whether that level of service would have been attained in the program's absence (Lincoln & Guba, 1984). Thus it may be as important to gauge the relative strength and quality of an intervention as perceived by the consumer as it is to assure staff-reported conformance to national standards or, as some would argue, to assess staff-determined impacts (Balaban & Dubiel, 1993).

At the onset of the Washington State Migrant Council's Early Head Start Program (WSMC-EHS), the family cornerstone was identified as being of paramount import in the Council's larger mission to enhance the contributions of their constituents to the communities in which they reside (WSMC Early Head Start, 1995). The impact of EHS in supporting and strengthening the

integrity of the family unit was considered a crucial element and fundamental to increasing parents' ability to nurture their children's early development (U.S. Department of Health and Human Services, 1999). With regard to the predominantly Mexican and Mexican American families of the rural areas served by WSMC-EHS, and whom they describe mainly as Hispanic, the interplay of cultural variables, particularly language and acculturation, were seen as some of the more salient of the potential moderators of that impact (c.f., Cox & Malabonga, 1998; Balaban & Dubiel, 1993; Garcia-Coll, 1990).

Hypotheses underlying our research on child outcomes pertained to whether families in Early Head Start experienced services focusing on child nurturing and development that they would not have received otherwise, and whether they perceived themselves and their children to have benefited from those services. We speculated that EHS families would report substantively higher levels of opportunity, participation and benefits than would families in a comparison group. In reference to service receipt, we also hypothesized that levels reported would be attenuated by gender, home language use and selected acculturation variables.

Information on 189 families determined as eligible for WSMC-EHS, who had a child born between September, 1995 and August, 1998, and who agreed to participate in the research were forwarded to Mathematica Policy Research for random assignment and inclusion in the national sample. Ninety-five families were assigned to the EHS Program and 94 families to the comparison group. Over the course of the three-year period, attrition accounted for the loss of 39 families from the research, resulting in a retention rate of approximately 79 percent. Nearly all of the families were of Mexican or Mexican American descent (97 percent). Two families were of Native American descent, one family was from Pakistan and three were Anglos. Over half of the parents were in their teens or early twenties. There were 36 single parent families (34 mothers) and three families in which the grandparent was the primary caregiver. The

predominant family occupation was agricultural, with many working family members engaged in seasonal fieldwork, or in fruit processing warehouses. Slightly fewer than 10 percent were typified by WSMC as interstate migrants. Names of 15 EHS families were placed on a service waiting list for an average of 5.7 months (range = 1.5 to 14.8 months).

A locally designed Supplemental Services Interview (SSI) protocol and the 12-item, two-dimensional version of the Short Acculturation Scale (SAS; Marín & Marín, 1991) were utilized for the purposes of this research. The SSI and SAS were administered concurrently with the Program Services Interview (PSI), employed in the national study of EHS (U.S. Department of Health and Human Services, 2001). Administration and training protocols mirrored those described for the national study in which two local research staff, both of Mexican American heritage, met criteria for certification to conduct the PSI. In addition, the SSI and SAS were subjected to pilot administrations in which the local research staff co-administered and co-critiqued trial interviews with 25 non-EHS research families.

During the study, the SSI and SAS were administered to families on three occasions: approximately 6 months, 15 months and 26 months following random assignment. Thirty-one SSI items sampled parent's perceptions regarding services received, their participation in activities relating to child nurturing and development, financial stability of the family and their involvement in the community. Eight SAS items sampled respondents' comfort in speaking with persons who spoke Spanish or English, while four items addressed respondents' daily affiliations. In addition, local research staff completed post interview, contact sheets pertaining to observed variables (e.g., language used during interview, responsiveness of participants, father's participation).

Respondents were asked whether they had one or more opportunities to participate in home support, formal child development or child care training, adult education activities or events in

the previous month. Table 1 is a descriptive summary of the frequencies of parents reporting opportunities over three rounds of interviews. At six months after random assignment, over two-thirds of EHS families reported one or more opportunities for parent meetings, as compared to one-fifth of the comparison group families. The differences in opportunities were statistically significant and sustained over the 15 and 26 month interview rounds, although, the numbers declined slightly for EHS families as they exited the program.

TABLE 1
PARENTS' OPPORTUNITIES FOR PARTICIPATION IN CHILD DEVELOPMENT AND CHILD-CARE ACTIVITIES

Item	Group	Percent of Respondents			
		6-Month	15-Month	26-Month	Overall
S5.1: Asked to Attend Parent Program Meetings	EHS	57*	59*	58*	68*
	Comparison	19	16	24	25

* p<.01

Table 2 represents a more focused examination, drawn from the 26-month interview round, and depicts mean frequencies of participatory opportunities, mother's, relative to father's attendance, and among English or Spanish-speaking subgroups. All EHS families averaged more than 12 opportunities for every 1 reported by all comparison group families. EHS Mother's attended nearly 65 percent of the activities they were invited to. The ratio of EHS to comparison group mother's attendance exceeded 8 to 1 and the difference was statistically significant. According to mother's accounts, EHS fathers attended barely over 5 percent of the activities, and the overall difference between EHS and comparison group fathers was not statistically significant. These trends were consistent across English and Spanish-speaking sub groups of families. However, EHS Spanish-speaking families (63 percent of families) reported slightly higher averages of opportunities and attendance than did EHS English-speaking families

(37 percent of families). Although quite low, the levels of attendance differed among English-speaking fathers, approaching statistical significance in favor of EHS fathers.

TABLE 2
OVERALL INVOLVEMENT IN CHILD REARING AND EDUCATION-RELATED ACTIVITIES AND EVENTS (QUESTIONS 5.2)

Item	Group	Mean Frequency	t Value	Significance Level
All Activities, All Families:				
Opportunity	EHS	13.03	5.67	.000*
	Comparison	1.12		
Mother's Attendance	EHS	8.41	5.14	.000*
	Comparison	1.07		
Father's Attendance	EHS	0.71	0.31	.76
	Comparison	0.60		
All Activities, English Speaking:				
Opportunity	EHS	9.25	3.35	.002*
	Comparison	0.17		
Mother's Attendance	EHS	6.36	2.96	.005*
	Comparison	0.11		
Father's Attendance	EHS	0.39	1.80	081***
	Comparison	0.00		
All Activities, Spanish Speaking:				
Opportunity	EHS	16.26	5.06	.000*
	Comparison	1.47		
Mother's Attendance	EHS	10.17	4.55	.000*
	Comparison	1.43		
Father's Attendance	EHS	0.86	0.10	.92
	Comparison	0.82		

*p<.01
**p<.05
***p<.10

Break-outs on types of opportunities for training and support at 26 months (not displayed) revealed significant differences in favor of EHS families for four of five categories: Parent Literacy Education (t = 3.27, p <.01), Education in Child Rearing (t = 7.07, p <.000), Center or

Program Visits ($t = 1.98$, $p < .05$) and Individual or Family Consultations ($t=2.40$, $p < .018$). No differences were evident for the category "Other."

While reported attendance was somewhat less frequent, EHS parents attended significantly more of several categories of events than did their comparison group counterparts across all categories combined. Education in Child Rearing was the predominant category of attendance, with EHS mothers, averaging nearly 7 over a 12 month period, and comparison group mothers reporting no opportunity in this category ($t = 5.60$, $p<.000$). There was negligible reported attendance (averaging from 0 to .39 incidences per reporting period) in any category by fathers of either group, except that more EHS fathers attended education in child rearing ($t = 2.01$, $p<.047$).

Because WSMC-EHS was predominantly a home-based program, the provision of home services and support pertaining to child nurturing and development was of particular interest. Results of interview questions pertaining to the frequency of home visits across the three interview rounds are summarized in Table 3. Overall, more than 90 percent of EHS families, and 5 percent of comparison group families reported one or more home visits were made during the month preceding an SSI interview. At six months, 63 EHS families (76 percent of respondents) and four comparison group families (5 percent of respondents) reported one or more home visits occurred in the last month. The number declined for EHS families at 15 and 26-month interview rounds as families were exited from the program. However, the difference remained statistically significant in favor of EHS families.

Table 4 depicts an analysis of home visit groupings, drawn from the 26-month interview. Families were asked to identify the persons making visits over the previous 12 months. Overall,

TABLE 3
PARENTS REPORTING ONE OR MORE HOME VISITS IN PREVIOUS MONTH

Item	Group	Percent of Respondents 6-Month	15-Month	26-Month	Overall
S5.3: Home visitor provided assistance or training in child care, nurturing and development	EHS	76*	75*	55*	91*
	Comparison	5	1	4	3

* p<.000

TABLE 4
TYPES AND FREQUENCIES OF VISITS REPORTED BY FAMILIES OVER THE 12 MONTHS PRECEDING THE 26-MONTH INTERVIEW

Titles Derived from Described Purposes of Visits	Group	Mean Frequency	t Value	Significance
Case Manager	EHS	0.66	1.59	.115
	Comparison	0.00		
Home Educator	EHS	13.44	7.22	.000*
	Comparison	0.00		
Social Worker	EHS	0.00	--	--
	Comparison	0.00		
Health Worker	EHS	0.31	1.11	.269
	Comparison	0.05		
Teacher	EHS	0.00	--	--
	Comparison	0.00		
Child Care Center Staff	EHS	0.00	--	--
	Comparison	0.00		
Other	EHS	0.24	-1.32	.190
	Comparison	2.10		
Overall	EHS	14.47	5.17	.000*
	Comparison	2.15		

*p<.000

for every home visit reported by comparison group families, EHS families reported nearly seven home visits, and 93 percent of them were for the purpose of home education in child-care and

child rearing. This difference was statistically significant in favor of EHS families, while there was no difference in the remaining categories (case manager, social worker, health worker, teacher, child care center staff, other). During informal follow-up interviews with EHS staff, case managers indicated that most of their work for families was carried out at intake and then indirectly thereafter, through telephone calls or meetings with health, mental health, social service and housing agencies. Further, EHS staff indicated that the health worker's time was focused mainly on group parent training at the center, and that her home visits were with a small number of families who had significant health/nutrition issues. Home educators, one assigned to each of six communities, carried out the bulk of the visitation schedule.

The EHS and comparison group differences in home visits at 26 months were similar for sub-groups of English and Spanish-speaking families (not depicted). However, the average frequency of home visits for EHS Spanish-speaking families (18.24) was more than twice that for EHS English-speaking families (7.83). During informal interviews with EHS staff, they suggested that a number of monolingual Spanish-speaking families, many, recent immigrants from Mexico, had less favorable financial and/or family conditions, and thus had greater need for home support and training.

Parents were also asked to supply confidence ratings on their ability to care for their child, and nurture their child's development (1= strongly agree, 5= strongly disagree). While the differences only approached statistical significance, more EHS parents tended to rate themselves highly (strongly agree: 47 on child care; 43 on child nurturing) than did parents in the comparison group (strongly agree: 34 on child care; 34 on child nurturing).

No statistically significant differences or changes in family's SAS ratings were evident for the eight language preference questions, nor for three of the affiliation questions at any of the three interview rounds. However, at 26 months, EHS families demonstrated a significantly

greater preference for their child to affiliate with English-speaking children (mean EHS rating: 2.99, mean comparison group rating: 2.77; $p < .04$). In contrast, between the 6 and 26 month interviews, comparison group families showed a shift in preferences for their child's friends, away from English-speaking children and toward Spanish-speaking children ($t = -2.17$, $p < .04$). While few differences across time or between groups were evident from the SAS, reviews of the interviewer's contact sheets revealed that more families described themselves as bi-lingual and responded to the interviews in English at 26 months than at the 6-month interviews (EHS group, 23 more, Comparison group, 18 more).

Twenty-six items of the SSI sampled respondents' perceptions of functional indicators of the family's involvement and acculturation to the community, as well as financial stability. At six months, significantly more EHS families reported they attended parent meetings at day care centers, preschools or early intervention programs, attended parent-teacher association meetings, and participated in clubs, community center, or community activities during the prior year than did comparison group families (Table 5). The difference in parent meeting and community center involvement was sustained through the 15 and 26-month interviews, but not for contacts with children's caregivers or teachers, nor for parent's attendance at PTA meetings.

There were no differences reported between EHS and comparison group families for items pertaining to economic or financial stability (e.g., rent/own a home, received welfare benefits, increased in annual income). However, between the first and last interview rounds a higher

TABLE 5
FAMILY REPORTS OF COMMUNITY INVOLVEMENT AND FINANCIAL STABILITY

Interview Item	Group	Percent of Respondents 6-Month	15-Month	26-Month
S8.1a. Talked with my child's caregiver in the past month.	EHS	40*	27	33
	Comparison	31	35	38
S8.1b. Talked with my child's teacher in the past month.	EHS	21*	5	8
	Comparison	4	5	6
S8.1c Attended parent meetings at my child's day care center or early intervention program in the past month.	EHS	35*	23*	36*
	Comparison	9	8	10
S8.1e. Attended PTA meeting in the past month.	EHS	30*	38	33
	Comparison	17	30	33
S8.1h. Attended a club, community center or community activity program in the past year.	EHS	13**	53*	27*
	Comparison	5	14	14

*p<.05
**p<.10

percentage of EHS families reported a) a raise in pay (11 percent at 6 months, 24 percent at 26 months), b) moving off from welfare benefits (18 percent at 6 months, 30 percent at 26 months), c) paying car license taxes (28 percent at 6 months, 44 percent at 26 months), and d) opening checking accounts (15 percent at 6 months, 26 percent at 26 months). Other indications of acculturation were drawn from reviews of interviewer's contact sheets between 6 and 26 months. EHS family contacts were noted more often as a) receptive to visits by non-relatives, b) outgoing and c) speaking often with their child (10 at 6 months, 78 at 26 months).

In summary, distances, limited tax bases and sparse population distributions continue to present challenges for providing child-care and child development, social, and health services in rural areas. Yet, an array of services are available in the Lower Yakima Valley, including state-funded child development and child care, the Farmworker's Clinic, Valley Memorial Hospital's child care and early intervention programs, privately supported child care programs, La Clinica

mental health services and a county cooperative of agencies. While available, they may not be readily accessed by low-income families who are dependent upon seasonal agricultural work, who experience language or cultural barriers, and/or who have limited educational backgrounds. These access variables appeared to be highly salient in the evaluation of WSMC-EHS.

Though available, few comparison group families reported opportunities for, or their involvement in education, training or support pertaining to child-development and child nurturing. Most gained no access to center or home-based services on their own initiative. On the other hand, most EHS families reported frequent opportunities for, and participation in activities pertaining to their child's care and development, in some cases attaining an eight-fold advantage. This was despite several being placed on a waiting list for EHS services. The bulk of the activities they did report were carried out or arranged by EHS staff, and most often occurred in the home. Active participation from fathers in either group was reported as being low or nonexistent. This is consistent with reports of many programs serving high numbers of low-income, Hispanic, and in many instances, non-Hispanic, rural families.

Monolingual Spanish-speaking families received the most attention from EHS program staff, who indicated these families had the greatest need, and their comparison group counterparts reported the lowest service involvement. Nearly all of these families reported that service agencies provided Spanish-speaking staff. We offer that language may be less a barrier and more an indicator of families in the early stages of acculturation (c.f., Marín & Marín, 1991). Thus, EHS seems to provide an important buffer, supporting a period of adjustment to and by the community.

Considerable benefit from EHS participation was indicated, but the differences in benefit between EHS and comparison group families were slight. There was a trend toward greater confidence in child-care and child development abilities among EHS families. While a standard

index of acculturation showed little change and few group differences, indicators of functional acculturation -- family and community participation -- suggested EHS families had enhanced involvement in selected areas.

From a quantitative standpoint, EHS families reported as high as a nine-fold advantage in access to, and receipt of training, services and support pertaining to child-care and child nurturing (see Table 2: Spanish-speaking families). We consider family access and participation to be important contextual requisites for the provision of best practices known to impact young children's development. The content and character of training, services and support pertaining to child care and child nurturing are often the focus of studies of child development programs. While they may address crucial aspects of the implementation of best practice, the "how" of service delivery is of little import if it is too limited in concentration, or shear amount of service provided (c.f., Hart & Risley, 1995). Although a significant part of the WSMC-EHS program's effort must be devoted to tracking its compliance with Head Start standards, the families served have also mirrored a level of involvement and benefit they were not likely to have attained otherwise.

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RELATIONS BETWEEN SPECIFIC AND GLOBAL FEATURES OF MOTHER-CHILD INTERACTIONS AND LANGUAGE

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The quality of parent-child interactions is one of the most powerful predictors of children's emerging cognitive competencies, especially that of language. It is no wonder that researchers, practitioners, educators and parents alike have ubiquitously been concerned about the features of parenting that are most relevant to positive outcomes for children, as well as the best ways to capture and evaluate those features in research and practice settings. Indeed, numerous approaches to the coding of parent-child interactions are available, and decisions about which to use are guided by both theoretical orientation as well as practical constraints.

In the Early Head Start Consortium, although local and National research teams shared a conceptual interest in measures of parental stimulation, cognitive support, and sensitivity, they adopted different coding strategies to assess such parenting constructs. For example, National measures of caregiver-child interactions of parent-child free play (referred to as the "three-bag-task" given the placement of toys in three bags) are based on global ratings of six dimensions of behavior in mothers (i.e., sensitivity, intrusiveness, stimulation, positive regard, negative regard, detachment) and three in children (i.e., engagement, attention, negativity). For such ratings, coders assigned mothers (and children) a score of 1 to 5 on each construct after one or two "passes" or viewings of the interaction. Such global ratings are frequently relied upon in large-scale studies due to the time-efficiency of coding as compared to other labor-intensive approaches (such as the transcription of parent-child interactions, which can take up to 10 hours per 10 minutes of interaction). In contrast, researchers at many local sites, including Harvard

and New York University, placed resources into describing and capturing specific aspects of parent-child engagements, by transcribing the full array of verbal and gestural exchanges between mothers and children during the 3-bag task. Such an approach is more frequently characteristic of small-scale, single-site investigations. Both "macro" and "micro" approaches to assessing parenting have merits, and both are fraught with limitations. Yet little is known about whether and how data obtained from the two relate to one another. Unfortunately, methodological integration, although empirically valuable, is rare.

Here, we explore associations between transcriptions of mothers' and children's language (at a local level) and global ratings of mother-child interactions (at the National level) as a first step toward understanding the interface between general and specific features of (and approaches to) dyadic engagements. We expected aspects of mothers' language to relate to global measures of maternal sensitivity and stimulation, as mothers use language as a primary mode of engagement with children. Mothers who verbally respond to their children's initiatives, provide language-rich environments, and ask questions of their children are likely to be those who are viewed as more sensitive and cognitively stimulating at a National level. Reciprocally, children begin to use language around the second year as a principal means of communication and as a way to maintain involvement in interactions with their caregivers. Thus, coders are likely to consider children's verbal expressions as an index of their engagement, especially at this time.

Methods

To this end, research teams at Harvard Graduate School of Education and at New York University Graduate School of Education longitudinally examined mother-child discourse in a total of 146 dyads (balanced for child gender) during the three-bag task at 14 and 24 months. Mothers from the two sites ranged in age from 14 to 43 years at the time of their children's birth. The sample was ethnically diverse: 47 percent identified themselves as White, 25 percent as

African American, 17 percent as Latina, and 11 percent as other (e.g., West Indian, mixed ethnicity).

Maternal language samples were obtained through transcription of the three-bag, semi-structured play task used in the national protocol. With the assistance of Child language Data Exchange System (CHILDES) (MacWhinney & Snow, 1985), a computer program that uses electronic files of verbal transcripts to analyze various aspects of maternal and/or child speech, a count was obtained of the number of different words used by each mother and each child (i.e., word types); the total number of words used by mother and child (i.e., tokens), and the number of "wh" questions (e.g., "What is that?," "Where is the blue block?") used by each mother during the 14- and 24-month sessions. Global ratings of mother-child interactions were those coded at the National level from the three-bag task.

Results

As expected, mothers varied considerably in the amount of language (tokens) and diversity of language (types) they expressed toward their children at both ages. Similarly, children varied in word types and tokens at both ages, with variation increasing substantially by 24 months in line with children's emergent productive language (see Table 1). Global measures of mothers' and children's behaviors varied at both ages as well.

Maternal language was strongly related to global ratings from the three-bag task at 14 and 24 months (see Table 2). Mothers' total words, word types, and "wh" questions were positively associated with ratings of sensitivity, stimulation, and positive regard, and negatively associated with detachment (r range from .19 to .66, $p < .05$ to .0001). Mothers' use of "wh" questions was negatively associated with negative regard and intrusiveness, although associations were small (r range from .19 to .21, $p < .05$). In general, findings were consistently robust across the three major ethnic groups. As an example, correlations between mothers' language types and global

TABLE 1
DESCRIPTIVE STATISTICS FOR MATERNAL AND CHILD LANGUAGE

	14-MONTH ASSESSMENT			24-MONTH ASSESSMENT		
	M	**SD**	**RANGE**	**M**	**SD**	**RANGE**
MOTHER						
Word Tokens	508.2	266.0	30-1244	631.2	249.2	55-1294
Word Types	124.7	46.2	14 –221	160.0	49.1	29-320
Wh- Questions	10.4	9.63	0 – 22	12.3	11.5	0-83
CHILD						
Word Tokens	6.58	10.46	0-63	95.8	72.3	0-333
Word Types	3.02	4.14	0-22	39.2	24.0	0-99

TABLE 2
ASSOCIATIONS BETWEEN MOTHER AND CHILD LANGUAGE AND GLOBAL RATINGS AT 14 AND 24 MONTHS (N=146)

	Mother Language 14 Months			**Mother Language 24 Months**		
	Types	Tokens	"Wh" Questions	Types	Tokens	"Wh" Questions
Mothers' Global Ratings						
Sensitivity	.36***	.30***	.43***	.48***	.46***	.45***
Intrusiveness	.05	.10	-.15	-.06	.02	-.21*
Stimulation	.66***	.61***	.33***	.57***	.55***	.34***
Positive Regard	.54***	.56***	.46***	.47***	.44***	.42***
Negative Regard	-.06	-.05	-.20*	.08	.11	-.19*
Detachment	-.41***	-.42***	-.19*	-.48***	-.48***	-.24**

	Children's Language 14 Months		**Children's Language 24 Months**	
	Types	Tokens	Types	Tokens
Children's Global Ratings				
Engagement	.20*	.19*	.51***	.42***
Attention	.17*	.16	.48***	.33***
Negativity	-.04	-.01	-.12	-.01

* p < .05, ** p < .01, *** p < .0001

ratings of stimulation in African-American, White, and Latina mothers were .67, .64, and .70 at 14 months, and .66, .45, and .76 at 24 months (all $p < .001$).

The robust associations identified between aspects of mothers' language and the global measures of sensitivity, stimulation, and positive regard accords with the finding that these three measures covaried strongly at the National level, leading to the creation of a composite index of "supportiveness" (a composite score created by summing individuals' ratings on the three items). Consequently, we tested the joint contributions of mothers' language types, tokens and "wh" questions to the composite score of "supportiveness." At both ages, maternal language types and "wh" questions (but not tokens) contributed unique variance to the composite measure of supportiveness, together accounting for 40 percent and 42 percent of the variance in "supportiveness," at 14 and 24 months respectively.

In contrast to the consistently strong associations between mothers' language and global ratings, the magnitude of associations between children's language and ratings of their engagement, attention, and negativity varied with age. At 14 months, children's word types and tokens were weakly associated with global measures of child engagement and attention (significant r range from .17 to .20, $p < .05$); by 24 months, however, associations among these same measures were moderate to strong (r range from .33 to .51, $p < .001$).

Discussion

One of the fundamental benefits of the National-Local partnership structure of the EHS consortium is the ability of investigators to integrate site-specific and National data, thereby shedding light onto the nature, meaning and ecological validity of both local and National findings. An area of inquiry in which this synergistic partnership is exemplified is in the merging of local and National measures of parenting, as illustrated in this investigation.

In general, results support the validity of National measures of parent-child interactions by demonstrating their strong associations to independently coded, in-depth measures of mother and child language at two local sites. It appears that the team of national coders were especially aware of the verbal exchanges between mothers and children when evaluating mothers' sensitivity, stimulation, positive regard, and detachment and children's engagement and attention. The fact that mothers' language strongly related to global ratings of their interactions at both ages, whereas associations for children changed over age dovetails with developments in children's language across the one-year period. At 14 months, children are at the dawn of productive language, and their verbal expression of "words" is limited. Consequently, coders likely rely on non-verbal aspects of children's behaviors in their assessment of children's engagement and attention. By 24 months, however, children's verbal expressions become aptly central to coders' evaluations of children's engagement and attention, in line with the remarkable gains in language that occur at this age. These sensitivities in coders, and the fact that more cost-effective global ratings dovetail with findings at a micro-level, lends further support to the validity of the National findings on parenting. Importantly, these findings also bear on the training of program staff, who should be sensitized to the importance of mothers' and children's language interactions as key expressions and indicators of mutual sensitivity and cognitively rewarding dyadic interactions.

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CHANGE IN PARENT-CHILD INTERACTION IN LOW-INCOME FAMILIES: LINKS TO FATHER STATUS

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Contingent responsiveness is considered a foundation of child socioemotional and cognitive adjustment (Bornstein, Tamis-LeMonda & Haynes, 1999; Watson, 1985). Whereas studies of parent-child contingency have focused on mothers, the contributions of fathers to children's development are of equal interest. Moreover, because fathers' access to the child is often regulated to some degree by mothers (Hochshild & Machung, 1989), fathers' interaction styles should be considered in conjunction with mothers' interaction styles. Among low-income families, for whom economic instability and chaotic social circumstances contribute to high rates of single motherhood, inconsistent father involvement, and transitory male figures in children's lives (Halpern, 1993), patterns and processes of the mutual development of mothers' and fathers' interactions with their children warrant particular attention. This study examines changes in low-income parent-child dyads' contingent responsiveness over a 2 ½ year period while taking into account the dependence of individuals within couples.

In addition, fathers who reside with the child or non-residential fathers who are actively involved might be expected to demonstrate better parenting interactions with the child because they would have more familiarity with and motivation to respond to the child. Thus, two father status variables, whether the father resided in the home and whether he was the biological parent of the child, were examined as predictors of individual differences in parent-child interactions.

Sample. The sample for this study consists of 71 families, which included mothers, children, and men identified by the mother as the child's father or father figure. These families are participating in an ongoing longitudinal study of children eligible for Early Head Start in

Jackson, Michigan. Thirty-five of the families were not part of the EHS intervention, and 36 families were EHS participants. Mothers averaged 22.2 years of age (SD = 4.8) and mean income was $10,120 (SD = $6,316). The majority (81 percent) of the sample is Caucasian, 8 percent reported being African American, 5 percent report being of Mexican decent, and the remaining 7 percent of the sample reports being of other ethnicities. Forty-seven percent of the sample reported not having completed a high school diploma at enrollment, 35 percent report having completed high school or a GED, and the remaining 28 percent report having attended some college (with one person having completed at least a two-year program).

Procedure and measures. At enrollment (child age M = 4.8 months, SD = 3.61), 24, and 36 months, each parent individually participated in a teaching task with the child. Live observations were rated by researchers (trained to a minimum reliability of 90 percent agreement) using the Nursing Child Assessment Teaching Scale (NCAST; Sumner & Spietz, 1994). Contingent parent-child interaction was assessed using three parental contingency scales (Sensitivity to Cues, Social-Emotional Growth Fostering, and Cognitive Growth Fostering) and two child scales (Clarity of Cues and Contingent Responsiveness to Caregiver). Paternal residency (0 = non-resident, 1 = resident) and biological father status (0 = social father, 1 = biological father) were determined by mother report. Men who lived in the home during at least one assessment were classified as residents.

Results. Hierarchical linear modeling (HLM; Bryk & Raudenbush, 1992) was used to derive an overall trajectory, consisting of a mean level on the interaction scale at 36 months and an estimate of linear change in interaction over time, for each parent and child while accounting for interdependencies between parents. The paternal status variables were then used to predict individual differences in the estimates for mean level and change. Level means, change

parameters (significant estimates represent significant change), and tests for differences between mothers' and fathers' estimates for the overall trajectories are presented in Table 1.

Mean level. At enrollment, mothers were more sensitive to infant cues, but less likely to foster social-emotional or cognitive growth than were fathers. By 36 months, the pattern had reversed: fathers tended to be more sensitive to cues than mothers, but were less likely to foster social-emotional or cognitive growth. Children gave clearer cues to fathers at enrollment, but showed no differences in behavior toward parents by 36 months.

Linear change. Both parents increased significantly over time in their sensitivity to the child's cues and cognitive growth fostering, but whereas mothers increased in social-growth fostering, fathers showed substantial decreases. Mothers increased more than fathers in sensitivity to cues and cognitive growth fostering. Children increased significantly in the clarity of cues and responsiveness toward both parents, but more so toward mothers.

Father status. Paternal residency, status as biological or social father, and the interaction between the two father status variables were examined to determine whether these characteristics accounted for variability in parent-child interaction trajectories. The results for the effects at enrollment are presented in Table 2.

Father status was not associated with maternal sensitivity to cues, but was consistently related to father sensitivity to cues. At enrollment, residential fathers were less sensitive than nonresidential fathers, and biological fathers were less sensitive than non-biological fathers. However, by 36 months, both residential and biological fathers had increased in sensitivity to cues; in fact, residential fathers were more sensitive than nonresidential fathers at 36 months (effect size $r = .26$, $p < .05$). Similar findings were evident among residential fathers (but not biological fathers) for cognitive growth fostering. At enrollment, residential fathers tended to be lower in cognitive growth fostering, but increased significantly over time.

TABLE 1

TRAJECTORIES AND DIFFERENCES FOR PARENT-CHILD CONTINGENT RESPONSIVENESS

	Parent interactions						Child interactions			
	Sensitivity to cues		Social-emotional growth fostering		Cognitive growth fostering		Clarity of cues		Responsiveness to caregiver	
Parameters	Enroll	36 mo.	Enroll	36 mo.	Enroll	36 mo.	Enroll	36 mo.	Enroll	36 mo.
Mother level[a]	3.75	4.51	1.82	2.20	2.82	4.79	7.18	8.67	6.30	8.09
Father level[a]	2.78	4.77	3.19	1.94	4.50	4.63	8.02	8.71	6.99	8.15
Level differences	**26.44*** **	3.59[t]	**50.40*** **	**4.86***	**5.29***	.51	**7.79** **	.04	2.39	.04
Mother linear change[b]	**.33** **		**.27***		**.68*** **		**.59*** **		**.50*** **	
Father linear change[b]	**.24***		**-.58*** **		**.46*** **		**.27***		**.29***	
Linear change diff.	**21.88*** **		**43.07*** **		**4.14***		**4.19***		.94	

[a] Mean. [b] Effect size r. [t] p < .07. *p < .05. **p < .01. ***p < .001.

TABLE 2

EFFECT SIZES FOR FATHER STATUS PREDICTING PARENT-CHILD INTERACTION TRAJECTORIES

								Child interactions				
	Sensitivity to cues		Social-emotional growth fostering			Cognitive growth fostering		Clarity of cues		Responsiveness to caregiver		
Parameters	Res.	Bio.	Res.	Bio.	Res. x Bio.	Res.	Bio.	Res.	Bio.	Res.	Bio.	Res. x Bio.
Mother level	-.06	-.09	.06	**-.24***		-.16	-.18	**-.28***	-.23[t]	**-.35****	**-.39****	**.29***
Mother change	.06	.06	.18	**.40*****	**-.28***	.14	.10	.23[t]	.22[t]	**.26***	**.29***	**-.26***
Father level	**-.63*****	**-.25***	.08	.16		-.22[t]	.06	-.08	.02	-.01	-.16	
Father linear change	**.60*****	**.27***	-.12	-.18		**.23***	-.13	.07	-.06	.08	.16	

Note. Effect sizes cannot be negative; directional signs are included to facilitate interpretation, where negative effect sizes in LEVEL represent lower levels at enrollment than at 36 months, and in LINEAR CHANGE represent decreases over time. [a] Mean. [b] Effect size r. [t] $p < .07$. *$p < .05$. **$p < .01$. ***$p < .001$. $\chi^2(1,70)$

Mothers' social-emotional growth fostering, but not the other two interaction variables, was the only contingency measure predicted by father status; fathers' own social-emotional growth fostering was not associated with their status as residential or biological. When mothers identified a social father figure rather than a biological father to be the child's father at enrollment, they showed higher levels of social-emotional growth fostering. There was also a residential x biological status interaction for change. This indicated that when there was a biological or social father in residence, mothers increased in social-emotional growth fostering, when there was a biological father living outside of the home, mothers did not change in social-emotional growth fostering, and when there was a social father living out of the home, mothers decreased in social-emotional growth fostering.

Father status was associated with child contingent responsiveness to mothers, but not fathers. At enrollment, children provided clearer cues to mothers when fathers were not in residence; there was no significant change over time. An interaction effect between residential and biological status indicated that when the father was a nonresidential social father, children were more contingently responsive to mothers at enrollment, but decreased in contingent responsiveness to mothers overtime.

The overall picture suggests that fathers and mothers were more similar in their contingent responsiveness toward the child by 36 months than they had been when the child was a young infant. Children's contingent responsiveness, which had tended toward favoring fathers, also became similar in interactions toward both parents. However, father status worked in distinct and complicated ways for mothers and fathers that were specific to different types of responsiveness.

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EARLY HEAD START SUPPORTS FAMILIES IN OBTAINING SERVICES FOR YOUNG CHILDREN WITH DISABILITIES

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A central purpose of Early Head Start (EHS) is child development, which includes the development of children with disabilities and delays since at least 10 percent of the infants and toddlers served by EHS must have documented eligibility for early intervention services. It follows that programs must comply with two related EHS principles: (a) inclusion of young children with special needs in EHS programs and (b) collaboration with early intervention service providers and systems to ensure that children of EHS families obtain early intervention services when warranted and that families of children being served by early intervention are referred and enrolled in EHS services when they meet EHS eligibility criteria.

While worthy ideals, the principles of inclusion and collaboration may be difficult to implement (Corso, 2000; Summers et al., 2001). For example, research has suggested that, although young children from low-income families face a higher risk of delays and disabilities (Brooks-Gunn, Duncan & Maritato, 1997; Sherman, 1998), their families are less likely to obtain early intervention services than more affluent families (Spiker, 2001). This may be due to a variety of factors, including the complex stresses of meeting urgent basic needs, such as adequate housing, nutrition, and health care that pose barriers to acting on behalf of an individual child. Additionally, parents may have great difficulties negotiating unfamiliar and complicated service systems. EHS staff must address these underlying barriers, if they are to improve child outcomes by supporting low-income families to obtain the early intervention services that might prevent or mitigate the negative effects of delays or disabilities.

A team of researchers from the Catholic University of America (CUA), comprised of professionals in psychology, education, and social work, conducted two studies to: (a) determine whether EHS enhances the likelihood that low-income families will obtain early intervention services and (b) identify how EHS works with families toward that goal. The first study investigated whether EHS facilitates referral, identification, and access to early intervention services for infants and toddlers through case studies of 32 families living in an impoverished corridor of a generally affluent, densely and diversely populated Mid-Atlantic suburban area served by the United Cerebral Palsy Early Head Start Program. We conducted case studies of 19 EHS (intervention) and 13 comparison families with focus children suspected of needing early intervention services for developmental delays or disabilities (through PL 105-17, the Individuals with Disabilities Education Act Amendments of 1997, either Part C or Part B). We defined suspected need as a recommendation that a parent contact early intervention services from either medical or community providers (4 EHS families, 4 Comparison families), EHS staff (14 EHS, 0 Comparison), researchers (through notification of low Bayley scores; 1 EHS, 8 Comparison), or self-referral (0 EHS, 1 Comparison). We drew these 32 cases from the combined 149 EHS and comparison families; they represent all cases in which there was suspected need by the time the focus child was 3 years old. (The sole exception is one family whom we could not reach for interviews.) The ethnic/racial profile of the 19 EHS families includes eight that were Hispanic immigrant, five African American, and six Caucasian families. Among the 13 Comparison families were four Hispanic immigrant families, one other immigrant, six African American, one Caucasian, and one Hispanic American.

Our case studies integrated in-depth interviews of mothers and staff with reviews of program and research records from the national EHS evaluation and CUA's local research. The first four authors conducted the record reviews and all interviews, except when parents spoke only Spanish

fluently. A bilingual social worker conducted these six interviews accompanied by a researcher. We interviewed EHS staff (home visitors and case managers) prior to parent interviews to learn about their work with these families in general and with the child with suspected special needs in particular. Parent interviews were open-ended to follow the lead of the informant who was telling her story but incorporated questions to cover research concerns, such as parent perception of the child, reaction to notification of suspected special needs and actions taken to help the child, including their experiences working with EHS and early intervention services.

Parent interviews, lasting about 90 minutes, were audio taped and later transcribed. From our review of transcripts and records, we developed a matrix indicating the dates and outcomes of the relevant steps associated with the process for securing early intervention services. From a review and tally of the data, we developed Table 1 comparing outcomes for EHS and Comparison families on these steps toward early intervention services.

Results indicate that a larger number of EHS families were notified of a suspected need to refer, probably due to the involvement of another set of "educated eyes" (those of EHS staff) with their children (see Table 1). With the active encouragement of EHS staff, 18 of 19 (94 percent) EHS families followed through to make the referral to the Part C or Part B office, compared with only 9 of 13 (69 percent) Comparison families. (The county this project served requires that parents make the initial referral.) With the support of EHS staff, more program families persisted through the process so that a greater proportion of their children were evaluated and found eligible for services (see Table 1). The four Comparison families who obtained services had young children with complex medical issues, three of whom were already receiving early intervention services at the time of application to EHS. The EHS children represented a wider range of types of disabilities and severity levels, suggesting that involvement

in EHS might empower families to become aware of their children's developmental challenges and obtain services for developmental delays, not just for medically related disabilities.

TABLE 1
TRACKING EHS AND COMPARISON FAMILIES ON A CONTINUUM FOR EARLY INTERVENTION SERVICES

Group	Notification of Need	Parent Referral*	Evaluation Obtained*	Child Found Eligible*	IFSP or IEP Developed+	Services Initiated+
Program	19	18 (94%)	17 (89%)	15 (79%)	15 (100%)	13 (87%)
Comparison	13	7 (54%)	6 (46%)	4 (31%)	4 (100%)	4 (100%)

*% of total notified
+% of total found eligible

In the second study, researchers analyzed four of the 32 case studies to determine how EHS service providers supported families to secure early intervention services and address barriers to improving their children's lives. We selected these four cases for the diverse situations they present. When these families exited the program, we conducted additional interviews with their EHS staff to document the (a) extent to which children and their families had progressed and (b) ways in which EHS staff had worked with them. We analyzed interview transcripts and program and research records to create and revise categories of family characteristics, family needs and changes in needs, and EHS action in conjunction with the family. From the categories, we identified common themes and exceptions. We used the constant-comparative qualitative method to assess trends across cases (Glaser & Strauss, 1967).

Our analyses indicate that EHS staff actions were highly individualized to match each family's needs. Nevertheless certain patterns emerged from their approaches. EHS staff always started by meeting the parents where they were in terms of their priorities. They recognized that, although their primary mission was the welfare of the focus child, low-income families might

experience multiple barriers to addressing an individual child's developmental issues over an entire family's urgent shared needs. As they began to work with the focus child, they simultaneously earned trust and established relationships with the parents by assisting with problem solving and resource identification to address the basic family needs. With a foundation in this relationship, EHS staff were then able to help parents focus on the less familiar challenges central to their children's development. In different ways according to parents' abilities and emotions, EHS staff helped parents understand child development, recognize and accept their children's unique challenges, comprehend that early intervention services might have something to offer and learn how to navigate the complex early intervention system.

The model that was the basis for EHS staff interactions with families oriented toward developing family problem solving skills. The goal was to provide information and scaffold steps in problem solving so that parents would internalize steps and apply them independently to solve future problems during the EHS years and thereafter. The method promoted action and reflection, so that families identified goals, developed plans, took action, and evaluated their progress.

Typically, EHS staff implemented one of two flexible service models: weekly home visiting or case management with EHS subsidized and supervised child care. In both, the individualized ways in which EHS staff supported different families seems illustrative of Vygotsky's theory of sociocultural development (Vygotsky, 1978): EHS home visitors and case managers determined where the parents' understanding or skills were, where they might be with assistance (zone of proximal development) and what specific supports it would take to help them grow. Staff then provided information and assistance incrementally, scaffolding on the knowledge and skills parents developed from one home visit or case management meeting to the next. The four cases illustrate scaffolding in both service models.

Following are summaries of each case to illustrate how EHS staff supported families:

Information Sharing

The Martinez family is comprised of a mother and father, both immigrants from South America, a 16-year-old son from the father's first marriage, an 11-year-old son, and a daughter who was 7 months old when the family enrolled in EHS services. The mother came to the USA in late adolescence when she was working for a diplomatic family; she learned English from watching TV. The father completed high school and attended technical school in South America, however, since emigration has had difficulty learning enough English to pass the citizenship test. His limited fluency is a barrier to improving his career prospects, and it forces him to rely on his wife for much of his communication.

When the couple's young daughter, the EHS focus child, was born, the father insisted that his wife quit her better paying job to care for the child. Although the mother agreed, this led to the family relying solely on the father's limited income from restaurant work. By the time they came to EHS, they had been through bankruptcy and lost their home. The five of them were living in a tiny one-bedroom apartment leased in a friend's name; they could afford only one meal a day. The parents' efforts to keep the children quiet and restrict their movement, to deflect attention from the presence of so many people in a small apartment, probably contributed to the daughter's delayed motor development. The child might also have been at risk due to the mother's complicated pregnancy, a history of ear infections, inadequate diet, and eating problems. Subsequent evaluations revealed delays in growth, gross motor skills, speech-language and social and emotional development.

The EHS home visitor, a native Spanish speaker herself, established a bond with both mother and father from the outset. She encouraged the reticent mother, who had "never let her tears run," to talk about the family's difficult situation. She helped both parents see other options

for solving the child's and the family's problems. Subsidized family child care might afford their daughter the social and emotional stimulation and play space to enhance her development, and the mother's returning to work might also help the family. Similarly, the father grew to accept his daughter's need for specialized care and his family's need for a second income.

EHS staff educated and supported the parents across all areas of child rearing to address the daughter's health needs, alter the home environment to provide parent-guided opportunities for gross motor development and assure more socializing experiences and encourage more speech. The mother was a bright and motivated learner, oriented toward improving her family's future. She said, "The advice of how to make some goals. That's what I really had help with from the home visitor. To have someone to motivate you and guide you is really important for me and as a family to move on. Having someone who is truly pushing you, like 'you can do it if you want to do it,' was really important." The mother also welcomed the oral and written information the EHS home visitor shared and that she later pursued through the library. This enabled the home visitor to scaffold on her growing mastery from visit to visit as the mother took advantage of the sessions to discuss what she had read, try out new approaches and get feedback. The father was also involved in encouraging the child's development but not to the same degree.

Encouraging collaboration with other key providers (medical, early intervention, child care) to enhance the little girl's services was another approach the EHS home visitor took as she supported the parents to communicate with experts to expand their knowledge and influence their practices, e.g., an EHS nutritional consultant and pediatricians. With the home visitor's encouragement, as the mother grew in confidence she overcame her hesitance to separate from her daughter. She gradually returned to work, starting as a substitute and then full-time childcare assistant for EHS. She has since gone on to earn her Child Development Associate credential and become a teacher.

Information sharing best describes the scaffolding method that worked to support this family. The mother, especially, understood the significance of the resources EHS was making available. Scaffolded information sharing became the foundation on which both parents built to become resourceful problem solvers on their daughter's and, gradually, the family's behalf. Information shared enabled the family to enhance their daughter's gross motor development so significantly that she was deemed ineligible for early intervention services (although she later received services for speech and language delay). Trust in information sharing led the father to collaborate with the family child care provider and the case manager to develop a plan to reduce the daughter's tantrums when he picked her up from child care. And, problem-solving skills developed through EHS interventions led the mother to suggest to their childcare provider that initiating a communication notebook might enhance provider-family collaboration.

Task Analysis And Incremental Achievements

The Ramos are a family of four: the father, trained in Central America as a teacher, who is 11 years older than the mother; the teenage mother, the US-born daughter of an immigrant from the same region, and two sons, 3 years old and 3 months old at enrollment in EHS. The mother left home at 14 to move in with and later marry the father; she dropped out of school (special education) in 8th grade. She had never held a job. The father is self-employed, and the family was able to meet basic subsistence needs financially. However, the mother reported financial need, due to the father's restriction on her use of funds rather than limited resources.

The EHS home visitor initially described the mother as a "moody, sensitive (17 year old) child" who was disorganized, unable to follow through consistently on a plan and so depressed and fearful she rarely left the house without her husband. She was unresponsive to her children, appeared to be emotionally insensitive to their needs, and lacked even basic knowledge about child development, nutrition, safety, and behavior management. In one early observation, the 3-

year-old was playing outside, unsupervised, with clothing insufficient for weather conditions, despite the fact that he recently had been diagnosed with pneumonia.

EHS assigned the family a Spanish-speaking home visitor. The mother attributes to this factor and the home visitor's weekly visits to the development of a relationship that allowed her to gain confidence in herself as a person and a mother:

We both talked the same language. ...She helped me. She was kind of like a friend.

> She came here. I think that was the first friend I had. She helped me in a lot of stuff, how to train the kids. I didn't get to learn a lot of things with [my first child] than what I know with [my second]. Like toys. She teaching me about toys. What do they do, what do the kids learn with it, all those kinds of things. So I think I improved as a mother, too.

The home visitor reports that to meet the children's needs it was crucial to focus simultaneously on the mother's many personal issues. She also recognized that the mother learned best from concrete guidance through incremental steps because of her cognitive limitations. The father was initially involved in EHS activities as a "monitor." He refused to let the mother meet with the home visitor without his presence. In response, she elected to appeal to his self-image as a businessman and involve him in decision making, determining that this would help him support rather than undercut her work. Over time, as he came to trust the decisions they reached together, he absented himself from meetings. The home visitor kept him posted about her activities. According to the mother, he became more actively engaged in household and parenting tasks.

Initially, the mother and EHS home visitor worked together to achieve concrete objectives in home safety, nutrition, parenting, and services for the children, as the home visitor also focused on helping the mother feel competent as a mother. Task analysis and the achievement of small successes were the foundation for scaffolding toward more independent problem solving in this case. The home visitor broke long- and short-term goals into consecutive shorter-term tasks and sequenced her direct instruction and modeling to scaffold on the successful accomplishment of each preceding task. For example, she accompanied and instructed the mother in community settings until she was comfortable going out alone; she not only gave her printed information but read it aloud to her and when she gave her recipes for nutritious foods, she cooked them with her. As the home visitor perceived that the mother was capable of acting independently, she withdrew her direct support. Over time, they also addressed communication skills, self-esteem, organizational skills, family roles and responsibilities, and ways to increase the mother's financial and emotional independence (e.g., driver's license, employment).

By the time the family "graduated" from EHS, the mother had a job that provided medical insurance for the entire family, held a driver's license, had begun developing a network of friends and was managing work and household chores. The problem solving skills nurtured by the EHS home visitor's task analysis and the mother's scaffolded achievement of concrete, incremental objectives led her to recognize her youngest son's need for special assistance and, despite the father's initial opposition, pursue Child Find to secure special education services. The mother had become proactively child focused, independent, more able to solve problems, and oriented toward the future.

Teaching by Modeling

The Velasquez family is a married couple living with two children, a daughter (2. 9 years old) and an infant son (3 months old) at the time of application. The mother was a homemaker

who babysat, and the father worked one full- and one part-time job. The family owns its own home. The mother was raised by relatives who have said little about her childhood, resulting in her knowing little about any developmental issues she might have experienced. As a young adult she provided child care for families that led her to the USA. The mother remains unhappy with her limited English speaking, reading and writing skills, and her inability to earn a driver's license. The father emigrated at 15 to find work. He now speaks, reads, and writes English well.

When the family first began receiving EHS services, the home visitor noted that the mother was not fully engaged; she seemed "preoccupied." Once the home visitor learned it was due to worries about the $10,000 hospital bill for the infant's delivery, she resolved the issue by assisting the family to establish Medicaid eligibility. This bolstered her credibility and cemented her working relationship with both parents. She then focused most intensely on increasing child development knowledge and parenting skills: safety, nutrition, infant stimulation, anticipation of infant and toddler needs, speech and language development, motor development, play and socialization, behavior management, self-control and discipline.

Initially the home visitor saw the mother as highly stressed: "she was screaming, and she did not call her children with a voice that was appropriate." Over the course of service, the parents' growth in the program received high ratings. To work effectively with the parents, the Spanish-speaking home visitor assumed the role of teacher, identifying goals with the parents, then "talking with examples." For every visit she developed a lesson plan centered on child development and parenting topics – fine and gross motor work, communication and language skills, socialization or behavior – and modeled activities to meet their goals using songs, games, play, books, puzzles, painting and coloring, sound and word repetition. The mother observed, then she and the home visitor practiced. Each lesson scaffolded on the previous week's to stimulate, strengthen and reinforce the mother's and the son's skill development. When behavior

and discipline were an issue, the home visitor modeled a calm voice and demeanor as the effective response. When the home visitor asked the father to be present, he followed his wife's lead, observing and following the EHS home visitor's example to learn to become more involved in the children's daily routine, especially by reading to them. When the mother introduced the idea of developing her own business as a licensed family child care provider, the home visitor added that to her lesson plans. She modeled how to run a child care program by selecting a variety of child development activities and teaching the mother how to use them with her own children. She also taught the parents about the importance of structure, routines, choices, discipline, health, safety, and nutrition for the child care setting.

Also critical was the EHS home visitor's flexibility. Although she had come to view the mother as highly involved and "open" to learning, she had her own ideas about how to handle her son's language problems other than the formal early intervention route suggested by EHS. Low scores on the Denver and multiple Bayley tests led the home visitor to focus on referral, evaluation and services for language and communication skills; however, the family chose not to enroll their son, even though he was found eligible. Instead, the mother "called a meeting" with immediate and extended family living in the home, explained the language concerns, began sharing with them the skill development strategies she was learning from the home visitor and asked them all to get involved. The home visitor in turn supported this new direction. She began a systematic program to help the family prompt language development. The family continued its efforts even during an extended visit to their native country. Thus, while the parents opted out of early intervention services, they did apply their home-based EHS lessons toward child development goals. The family push had an effect: when Child Find appealed the family's refusal of services, the re-evaluation found enough improvement that the boy was no longer eligible. A year later, when attention shifted to managing the son's aggressive behavior,

discipline and toilet training, disappointment with Child Find's finding of ineligibility led them not to appeal the decision but to pursue further evaluation at a hospital where they had a positive experience with their daughter's care.

Teaching by modeling and a flexible approach that adapts to new or changing goals proved to be the support strategies that worked best to guide the Velasquez family successfully through their EHS experience. By the time their direct support came to a close, they had begun to reflect on their experiences and tested their problem solving skills to treat their daughter's health problems, resolve the son's speech and language and evaluate his social and behavioral performance, develop differential child development knowledge and parenting skills, transition both children to Head Start Programs, resolve the family debt, access health insurance and launch the mother as an EHS-approved, licensed child care provider.

Learning by Doing

The Smithsons are a U.S. born Caucasian family of four: two young children (4-year-old son and 2-year 9-month-old daughter at enrollment); the mother, who has a severe medical problem that can limit her ability to care for her children and affects her memory, and the father, the family's sole source of income, who has not graduated from high school and has trouble holding a steady job. At enrollment, the mother's health was poor, the family had no regular source of income or health insurance, and they lived in a small apartment they were able to rent only by using someone else's name to meet the income requirements. The Smithsons are the only one of our four cases that was assigned to child care and a case manager from the outset. Much of the EHS staff's work centered on helping them learn to work the various systems that might improve their children's lives.

In response to the children's immediate needs, the case manager convinced the family to arrange free child care through EHS due to the danger the mother's recurring medical problems

posed for the children's well being. She also supported the mother to expand her understanding of her maternal role beyond the simple physical care of her children. As the mother's knowledge increased, the case manager responded by encouraging her to expand her role to manage more proactively the children's nutrition and television viewing (i.e., decreasing exposure and violent content) and augment their opportunities for physical play and parent-child activities. The father also learned to be more involved with the children and supervise their television viewing.

Simultaneously, the EHS case manager guided the parents to manage their finances better and understand the resources and systems available to them. For example, the parents had been using credit cards to pay medical bills rather than taking advantage of free medical services available through their county, and they had failed to sign up for company health insurance when the father got a new job, because they did not understand the requisite deadlines and documentation. The EHS case manager researched and informed the family about the steps to take to subscribe to the health plan. She also accompanied them to an initial meeting with a multi-agency team that promised assistance with reducing their burdensome credit card debt.

From the outset, the mother responded well to the EHS case manager's nonjudgmental approach. "A lot of stuff they talk to you about, you know ... [using] these terms [and] you are, like, okay, what language are you speaking? And, she'll [the case manager] translate, and she'll help me [by saying] 'Let's get that going.' ... She keeps me on top of things." Because she was aware of her son's problems with physical aggression, especially toward his younger sister, she was open to the suggestion to contact Child Find. The father was defensive and resistant to the notion that one of his children might have some limitations, but he accompanied his wife and the EHS case manager to the Child Find meeting. Behind the scenes, the case manager helped Child Find staff frame their explanation of the son's problems and their recommendations so that the father could accept the fact of his child's difficulties and need for intervention. The case

manager and the EHS supervisor for child care similarly scaffolded evidence to help the parents learn to differentiate between high quality and inferior child care and come to terms with the need to change child care placement when the initial arrangement deteriorated.

Learning by doing is an effective description of this family, especially the mother, as an EHS participant. The parents learned what to look for in child care from a bad experience. Scaffolding on what she had learned from her son's developmental delays and behavior issues, the mother herself recognized her daughter's developmental difference as she neared age three and alerted EHS staff about her concerns. Although they requested some assistance with the Child Find process, this time the mother worked through the appointments much more independently. And, when a problem arose with their apartment management company over the size of their unit for a family with mixed gender children, using resources the EHS case manager only suggested, the mother followed through to negotiate a resolution on her own. The family had begun to generalize the problem solving skills they learned as a result of EHS support.

Conclusion

The first study indicates that virtually all of the EHS families made referrals whereas only two thirds of comparison families did. EHS then showed greater retention with most completing the evaluation process, whereas only half of the comparison families completed this step. Similarly, a majority of EHS families were eligible for services and received them, as compared with only one-third of the Comparison families.

The second study illustrates critical features of the challenges faced by EHS workers in supporting families when their young children need or are suspected of needing early intervention. Prominent is the fact that these families faced multiple risks, which had direct or potential impact on child development. Families lacked the knowledge, skills, confidence, or resources to know how to diminish these risks at first contact. The "educated eyes" of EHS

workers recognized the children's needs and that the family's status had direct bearing on child development. By establishing a valued professional relationship, including good communication that matched languages of parents and EHS workers, EHS provided interrelated support to families that keyed into their children's development and still guided them to meet pressing basic needs.

Another striking aspect from the four cases is the unfamiliarity and difficulty of working the components of early intervention system for the low-income families. Between their own complex situations and the difficulty of working the system, it became apparent why low-income families are underrepresented among those obtaining early intervention services nationally and why professional support by EHS is necessary. EHS workers individualized their support as they helped each family learn about and accept their children's developmental status and negotiate early intervention and other systems.

The cases highlight four styles by which families learned to solve problems with EHS scaffolding–learning by doing, information sharing, task analysis and incremental achievements, and modeling–and conscious instruction in the use of problem solving processes. They are illustrative, not exhaustive, of how EHS works and describe how EHS services can facilitate each family's learning to solve problems systematically to enhance child and family development and independence.

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