



NATIONAL EARLY INTERVENTION LONGITUDINAL STUDY

**DEMOGRAPHIC CHARACTERISTICS OF
CHILDREN AND FAMILIES ENTERING EARLY
INTERVENTION**

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INTRODUCTION

In 1986, federal legislation (P.L. 99-457) created the Early Intervention Program for Infants and Toddlers with Disabilities, now contained in Part C of the Individuals with Disabilities Education Act, as amended in 1997 (IDEA '97). To provide much-needed information about Part C and its participants nationally, the Office of Special Education Programs (OSEP) of the U.S. Department of Education commissioned SRI International to conduct the National Early Intervention Longitudinal Study (NEILS). NEILS began in 1996 with a design phase; data collection began the following year. NEILS findings are based on a nationally representative sample of children and families who were recruited into the study from September 1997 through November 1998 as they entered early intervention. Information is being collected repeatedly about participating children and families through their kindergarten year. More information about the study design is contained in Hebbeler and Wagner (1998).¹

NEILS is addressing five key study questions:

- Who are the children and families receiving early intervention services?
- What early intervention services do participating children and families receive?
- What are the costs of the early intervention services?
- What outcomes do participating children and families experience?
- How do outcomes relate to variations in child and family characteristics and services received?

This Report: Demographic Characteristics

This report describes the demographic characteristics of the children and families participating in early intervention. Demographic characteristics include child- and family-level descriptors such as family structure, household income, and mother's education level. An initial look at a few demographic characteristics, such as gender, race/ethnicity, whether the child was in foster care, and family's receipt of public assistance, was presented in an earlier NEILS report (Hebbeler et al., 2001). The earlier report was based on data reported by service providers at the time the family enrolled in early intervention, whereas the data in this report are based on information provided by the family.

The federal legislation that created the Part C program under the Individuals with Disabilities Education Act (IDEA) states that services should be provided "to enhance the development of infants and toddlers with disabilities" and "to enhance the capacity of families to meet the special needs of their infants and toddlers" (20 U.S.C. 1431, as amended by the Individuals with Disabilities Education Act of 1997). The law is premised on the assumption that the provision of high-quality, coordinated, multidisciplinary early intervention services will achieve these objectives. Understanding whether Part C is enhancing the development of infants and toddlers and the capacity of families requires information about how the system is being implemented, what services are being provided, and what results are being achieved by those participating in the system. Providing—and therefore understanding—early intervention services is a complex undertaking. More than 200,000 children receive

¹ All NEILS reports are available at www.sri.com/neils.

early intervention in the United States (U.S. Department of Education, 2000). There are many specific reasons for which these children can be eligible for early intervention services. All of these reasons fall within the general categories of developmental delay, diagnosed condition, or risk condition, but there are many types of delays and numerous diagnosed conditions and reasons that children can be at risk for poor development. An initial look at the varied reasons why children are receiving early intervention services was presented in an earlier NEILS report (Hebbeler et al., 2001). Obviously, the nature of the child's condition has significant implications for what services the child and family will receive and the developmental results that can be expected at the conclusion of the child's time in early intervention. Babies born with very serious disabilities, even if provided with the best services available, will still be facing significant developmental challenges when they transition out of early intervention at 36 months of age. By contrast, toddlers with mild delays or infants with risk conditions might no longer need any services.

The amount of progress children will make in early intervention is the result of numerous interacting factors. These include factors related to the child's disability, the child and family's life circumstances, the nature of the services received, and numerous other potential factors whose effects are not well understood. Years of research on the effectiveness of early intervention have shown conclusively that early intervention is effective, but many questions still remain about the specific features of early intervention that result in the best outcomes for certain kinds of children and families (Wolery & Bailey, 2003; Guralnick, 1997).

Understanding how early intervention is working in the United States today and how to make the system more effective requires a detailed understanding of the many parts of the puzzle. The five NEILS study questions listed above are one way of describing this puzzle. This report is one of three that address the first study question:

- Who are the children and families receiving early intervention services?

The other two reports address birth weight and health (Spiker, Mallik, et al., 2003) and functional and behavioral characteristics (Spiker, Scarborough, et al., 2003) of children in early intervention.

Describing the population of children and families participating in early intervention is an important first step in an examination of the results the system is achieving. Good information on the demographics of children and families in early intervention, the subject of this report, is important in two regards. First, the demographic data address the question of whom the early intervention system is reaching. Is the population in early intervention a cross section of the general population in the nation? Are minorities over- or underrepresented? Are families with limited income over- or underrepresented? Armed with this information, programs can take steps to improve outreach and access to services for subgroups of the population who might have less access than others.

The second reason for needing to understand the demographics of the population in early intervention is that it is highly likely that the outcomes of early intervention will differ for children with different demographic profiles. The evidence in the general child development literature is overwhelming that certain life factors, such as poverty, are associated with negative developmental outcomes (Brooks-Gunn & Duncan, 1997; Black, Hess, & Berenson-Howard, 2000; Chen, Matthews, & Boyce, 2002; Park, Turnbull, & Turnbull, 2002). It is highly likely that these factors also affect the development of infants and toddlers with disabilities and the progress children will make in early intervention. This

report is a first step toward understanding the complex puzzle that lies beneath the objectives of Part C of enhancing children's development and families' capacity to support that development.

The remainder of this chapter briefly summarizes the methodology for the study. Findings are presented in the second chapter. The final chapter summarizes what has been learned, discusses the significance of the findings, and highlights next steps in the NEILS analysis agenda.

Data Collection and Analysis

Sample

The findings presented in this report are based on a nationally representative sample of 3,338 children who entered early intervention for the first time between September 1997 and November 1998. Families were recruited through early intervention programs located in 93 counties in 20 states. Local program providers explained the study to families at or near the time of the Individualized Family Service Plan (IFSP). All families who met the study criteria (child less than 31 months of age and an adult in the household who spoke English or Spanish) were invited to participate. If a family had more than one child entering early intervention, only one child was selected for the study. Programs invited 4,653 families to participate in the study, and 3,338 (71%) agreed.

Data Collection

The findings in this report are based primarily on telephone interviews conducted within 16 weeks of enrollment. Some data were taken from additional telephone and/or mail surveys for those who could not be interviewed within 16 weeks of enrollment. A 40-minute telephone interview was conducted with "the person best able to answer questions about the child and the child's program." Fourteen percent of the interviews were conducted within 2 weeks of the initial IFSP meeting, 36% within 2 to 4 weeks of the IFSP, 18% within 4 to 6 weeks of the IFSP, and 25% within 6 to 16 weeks of the IFSP. Telephone interviews were completed with 89% of the families (n = 2,974). Families who could not be reached by phone were sent a questionnaire in the mail. Some families who could not be contacted for the initial interview were successfully contacted for the next scheduled interview a year later. These families were asked some of the questions from the first interview (e.g., information about the child's birth history) during this interview. Interview or mail survey data were available for 3,200 children, or 96% of the sample. Some data, such as date of the IFSP meeting, were available for 100% of the sample. Individual items will have fewer respondents because of missing data. Additional information about the study's methodology is presented in Javitz et al. (2001).

Most (83%) of the respondents to the telephone interview were the child's biological mother. Other respondents included foster mothers (5%), grandmothers (4%), adoptive mothers (3%), and biological fathers (4%). Seven percent of the interviews were conducted in Spanish. Since most of the children were being cared for by their biological mothers, we generally will use the term "mothers" throughout the report to refer to the primary female caregivers.

Analysis

All data presented in this report are weighted, which means that numerical weights have been applied to the raw data. The procedures for calculating the weights are described in detail in Javitz et al. (2002). Because of the nature of the sample selection procedures employed and the weights applied to the data, the data presented in this report represent national estimates. The percentages and means are only estimates of the actual percentages and means that would have been obtained if all children entering early intervention in the country had been included in the study. The estimates vary in how closely they approximate the true measures. To examine the precision of the estimate, researchers use a statistic called "standard error." To aid the reader in determining the precision of the estimates, tables in Appendix A present the approximate standard error for each percentage or mean and the unweighted number of cases on which the statistic is based.

The tables in Appendix A also show p-values from chi-square analyses or the analysis of variance testing the relationship between the items of interest and a set of key child and family characteristics. These analyses address questions about whether or not the items vary as a function of variations in characteristics of children and families (e.g., whether the number of adults in the household was related to when the child began early intervention).

Finally, throughout the report, wherever possible, we present comparison information from national data on the general U.S. population of families with infants and toddlers. Many of the comparison data are available for families with children age 3 or younger, but some are based on the birth to age 5 population or other age groups. To the extent possible, we attempted to make comparisons with the birth to age 3 general population.

Limitations

Every effort was made to recruit and enroll all eligible families in the 93 counties in the study. However, in some counties, some programs declined to participate in the study. This occurred very infrequently over the 93 counties in the study, but it is possible that the families who would have been enrolled by the refusing programs would be different from those enrolled by the participating programs in a county.

We also have reason to believe that not all early intervention personnel at participating programs invited all eligible families to participate in NEILS. Some staff misunderstood the directions, and others reported excessive workloads, which resulted in their completing enrollment forms for (and recruiting into the study) some families but not all. SRI worked with sites throughout the recruitment period to minimize these problems, but we strongly suspect that there were some families for whom data forms were not completed. We have no particular reason to believe that families for whom we do not have data differ in any systematic way from families for whom we do have data. To the extent that no such difference exists, there should be no bias introduced by the incompleteness of information that results from this second limitation.

Finally, some of the families who agreed to participate in the study are not included in the findings presented here because they could not be located, declined to be interviewed, or did not return the mail questionnaire. A comparison of the weighted family characteristics available at the time of enrollment (described in Hebbeler et al., 2001) and those for the sample who were interviewed (available for this report) showed comparable population

estimates for all variables. This result suggests that the population estimates reported here reflect accurate estimates for the entire population of children and families entering early intervention during the enrollment period who were eligible to be enrolled into NEILS.

FINDINGS

This chapter presents findings on the following demographic characteristics of children and families in early intervention:

- Race/ethnicity of child, mother's education level, and household income
- Household composition and family structure
- Ages, employment status, and educational attainment of primary caregivers and their partners
- Indicators of economic well-being.

General findings are presented for each topic listed above, followed by an examination of the data with regard to the following other key child and family characteristics:

- Reason for eligibility for early intervention (i.e., developmental delay, diagnosed condition, risk condition)
- Age at entry into early intervention
- Gender
- Race/ethnicity
- Education level of female primary caregiver, referred to as mother's education level
- Household income
- Receipt of public assistance.

These additional analyses answer questions such as "does the number of adults in the household differ for children with developmental delays and those with diagnosed conditions?" Three of the key characteristics—race/ethnicity, education level of the primary caregiver, and household income—are the focus of one of the sections in this chapter and are the factors by which other findings are analyzed.

If the relationship between the variable of interest and another characteristic is statistically significant and large enough to be meaningful, it is described in the text and, sometimes, in a graph. The nonsignificant relationships are not described. The reader interested in additional analyses is referred to Appendix A, which presents the data for all the demographic characteristics discussed in the report cross tabulated by each of the other key characteristics examined.

Race/Ethnicity, Mother's Education Level, and Household Income

Racial or ethnic group, level of mother's education, and household income are three sociodemographic characteristics that are potentially very important for a child's development. These three characteristics are highly related within the population of families receiving early intervention services, and this interrelationship mirrors that seen in the general population. These characteristics are also related to some other child characteristics, as will be discussed in the second half of this chapter.

Both the overrepresentation of minorities in special education and the possible underrepresentation of infants and toddlers from minority groups in early intervention have been of concern to policy-makers (National Research Council, 2002). As will be discussed below, minority children come from poorer families, and poverty is associated with many factors likely to result in disability or delay in young children. One could argue, therefore, that minority children should be overrepresented in early intervention, given their

overrepresentation among families living in poverty. There is no benchmark figure, however, as to the expected percentage of minority children in early intervention. The data from this study are based only on families who sought and agreed to early intervention. The study has no data on how many other children were potentially eligible for services but whose families never knew their child had a special need, never learned about services, or opted not to participate in early intervention.

The racial/ethnic composition of children receiving early intervention services was mostly Caucasian, the next largest groups being African-American and Hispanic² (Table 1). There were proportionately fewer Caucasian children in early intervention than in the general population of children up to age 3 (Figure 1). On the other hand, there were more African-American children in early intervention than in the general population and roughly comparable percentages of the other groups.

Table 1
ETHNICITY OF CHILD, MOTHER'S EDUCATION LEVEL, AND HOUSEHOLD
INCOME FOR FAMILIES OF CHILDREN RECEIVING EARLY INTERVENTION
SERVICES AND THE GENERAL POPULATION

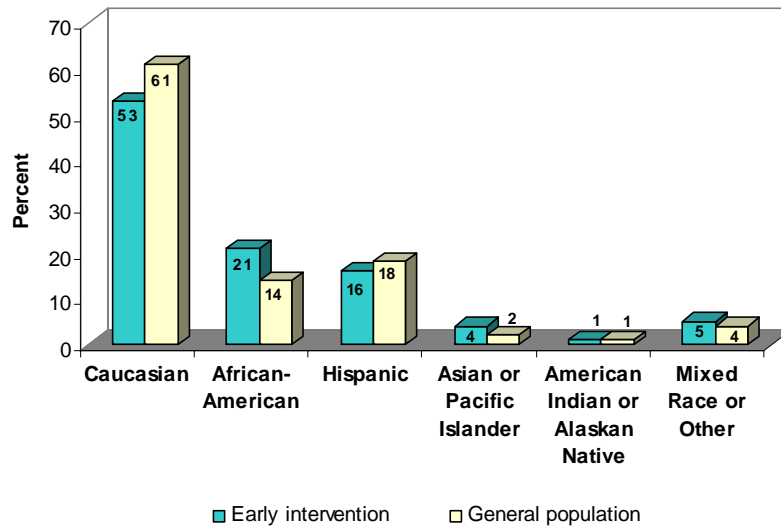
Characteristic	Early Intervention Population Percentage	General Population Percentage ^a
Child's race/ethnicity		
Caucasian	53	61**
African-American	21	14**
Hispanic	16	18
Asian or Pacific Islander	4	2
American Indian or Alaska Native	1	1
Mixed race or other ^b	5	4
Mother's education level		
Less than high school degree	16	17
GED or high school degree	32	27**
Some college	28	28
Bachelor's degree or higher	24	27
Household income		
\$15,000 or less	27	21**
\$15,001-\$25,000	16	16
\$25,001-\$50,000	29	31
\$50,001-\$75,000	16	16
Over \$75,000	13	16*

^a General population data from NHES (1999) for children up to 3 years of age.
^b In all subsequent analyses, American Indian will be included in the mixed race or other category.
* = $p < .05$, ** = $p < .01$

Maternal education level is a strong predictor of developmental outcomes for children (Sameroff & Fiese, 2000; Christian, Morrison, & Bryant, 1998), and it is associated with family socioeconomic status and with parenting behaviors and attitudes (Hollomon, Dobbins, & Scott, 1998; McLoyd, 1998).

² Children of Hispanic origin were classified as Hispanic, regardless of the racial classification.

Figure 1
RACE/ETHNICITY FOR CHILDREN RECEIVING EARLY INTERVENTION SERVICES AND THE
GENERAL POPULATION*



*General population data from NHES (1999) for children up to 3 years of age.

It also may be important in understanding the early intervention services that families receive (Kochanek & Buka, 1998). Mothers of children receiving early intervention were fairly evenly distributed over the various levels of education, the largest group being those with only a high school diploma (Table 1, 32%), followed by those with some college (28%). In the general population, fewer mothers had high school diplomas (27%), and a comparable proportion had some college experience (28%) (NHES, 1999). Finally, 16% of the mothers of children receiving early intervention had not finished high school, which was comparable to the general population (17%).

Living in poverty is a well-documented risk factor associated with developmental difficulties in children, with persistent poverty that begins early in life being particularly damaging (Aber, Jones, & Cohen, 2000; Garbarino & Ganzel, 2000; Duncan & Brooks-Gunn, 1997). Many researchers and family policy advocates have provided models and documentation of why poverty can be so devastating. Poverty may be associated with reduced access to resources, including health care and other services; poorer nutrition; and lower parental educational attainment, all of which may contribute to greater parenting stress and greater risk for poorer child developmental outcomes.

Although the families of children entering early intervention had a wide range of household income levels (Table 1), many families receiving early intervention were living in poverty, as indicated by the percentage of families with low household income levels. More than one in four children (27%) receiving early intervention were living in households with annual incomes of \$15,000 or less. This was a higher proportion of children living in extreme poverty than that in the general population of families of households with children up to age 3 (21%, Table 1). More than 4 in 10 (43%) of the children receiving early intervention were living in families with total household incomes of \$25,000 or less per year, compared with 37% of the general population. There also were fewer families receiving early

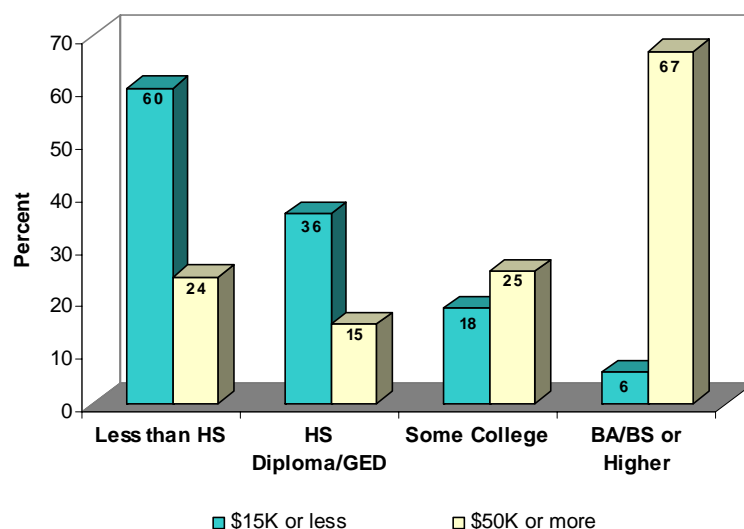
intervention with household incomes over \$75,000 than in the general population of families of young children.

In sum, the population of children in early intervention is more African-American and less Caucasian than the general population of children up to age 3. The education levels of the mothers of children receiving early intervention are similar to those of mothers in the general population, except that there are more mothers who have completed high school but not pursued college among families receiving early intervention. Overall, the population of families receiving early intervention is poorer than the general population of families with children up to age 3.

Children from different racial/ethnic groups entering early intervention differed substantially with regard to the mother's education level and household income. The educational and economic resources of Caucasian and Asian or Pacific Islander families contrast sharply with those of African-American and Hispanic families. One-third of the mothers of Caucasian children and 40% of mothers of Asian or Pacific Islander children in early intervention had a bachelor's degree or higher. Only 10% of the African-American children and 12% of Hispanic children had mothers with at least a college degree. Maternal education level is so important for understanding child outcomes because, as noted earlier, low levels of maternal education put the child at risk for poor development. Only about 1 in 10 Caucasian or Asian or Pacific Islander children had mothers who did not complete high school. For African-American and Hispanic children, the figures were 25% and 29%, respectively ($p < .001$).

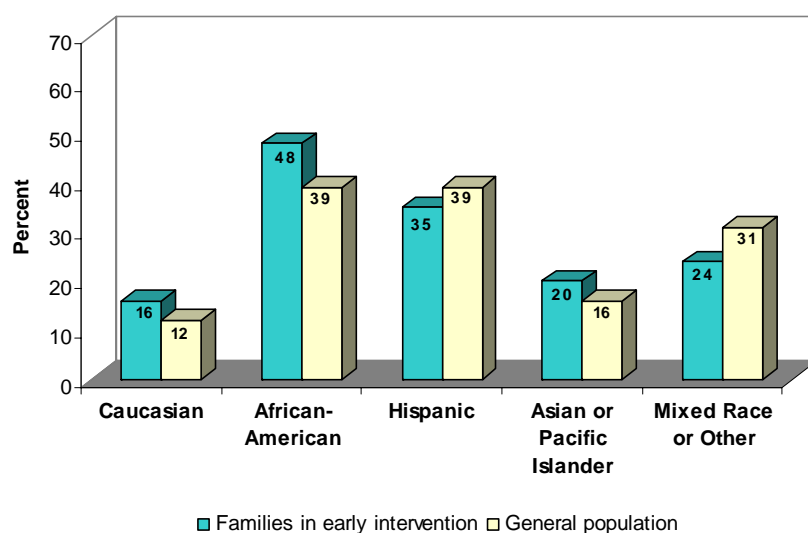
Not surprisingly, limited education and low levels of family income are related. Among families in which the mother did not finish high school, 60% made \$15,000 or less annually (Figure 2). Less than 3% were making more than \$50,000. Among families in which the mother had a bachelor's degree, only 6% were making \$15,000 or less and 67% were making \$50,000 or more.

Figure 2
ANNUAL HOUSEHOLD INCOME OF \$15,000 OR LESS AND \$50,000 OR MORE FOR FAMILIES RECEIVING EARLY INTERVENTION SERVICES, BY MOTHER'S EDUCATION LEVEL



Given that African-American and Hispanic children in early intervention have mothers with lower levels of education, it is not surprising to find out that they also have lower levels of family income. Nearly half of the African-American children (48%) were in families with annual household incomes of \$15,000 or less, as were 35% of the Hispanic children (Figure 3). The comparable figures for Caucasian and Asian/Pacific Islander children were 16% and 20% ($p < .001$). The disparity is equally large among those making more than \$50,000. Nine percent of African-American children and 15% of Hispanic children in early intervention were in families with household incomes of more than \$50,000. Forty percent of Caucasian children's families and 46% of Asian or Pacific Islander children's families had incomes of more than \$50,000.

Figure 3
ANNUAL HOUSEHOLD INCOMES OF \$15,000 OR LESS, BY RACE/ETHNICITY FOR FAMILIES RECEIVING EARLY INTERVENTION SERVICES AND THE GENERAL POPULATION*



*General population data from NHES (1999) for families with children up to 3 years of age.

This relationship between race/ethnicity and income is not unique to families receiving early intervention but reflects a similar relationship in the general population (also Figure 3). For example, in the general population of households with children up to 3 years of age, 12% of Caucasian families have incomes of \$15,000 or less annually (NHES, 1999), compared with 16% for early intervention families. In the general population, 39% of African-American families with young children have incomes of \$15,000 or less annually, compared with 48% in early intervention. In the general population, 14% of Caucasian children under 6 years of age are in poverty, compared with 34% of African-American children and 30% of Hispanic children (U.S. Census Bureau, 2001).

Other characteristics examined in relationship to race/ethnicity, education level, and household income were reason for eligibility for early intervention, age at entry to early intervention, and gender. Level of maternal education was related to the reason the child was eligible for early intervention and the child's age when services began, as well as gender. Children with developmental delays tended to have more highly educated mothers (27% with a bachelor's degree or more), compared with children with diagnosed conditions

(22%) or risk conditions (21%, $p < .001$). Children with developmental delays and children with risk conditions had mothers with the lowest levels of education; 17% of the mothers for both of these groups did not finish high school, compared with 13% for mothers of those with diagnosed conditions.

Children who were at least 24 months old when the IFSP was developed had mothers with higher levels of education than did children who entered at younger ages. Twenty-eight percent of the children who began early intervention at 24 months or older had mothers with a bachelor's degree or higher, compared with 24% for those who began between 12 and 24 months and 22% for those who began at less than 12 months ($p < .001$). Boys entering early intervention were more likely than girls to have a mother with a bachelor's degree or more (26% vs. 22%, $p < .01$).

Household income was also related to reason for eligibility, age at entry, and gender. Children from lower-income families were far more likely to be receiving early intervention because of a risk condition. Among children with risk conditions, 37% were from families with household incomes of \$15,000 or less. The comparable figures for children with developmental delays and diagnosed conditions were 24% and 23%, respectively ($p < .001$). This finding is not surprising since some of the factors that put children at risk of developmental delay are associated with poverty. Children entering early intervention later were more likely to be from upper-income families. Slightly more than one-third (34%) of children beginning services at 24 months of age or older were from families making more than \$50,000 per year, compared with 27% for children entering in their second year ($p < .001$). Boys were slightly more likely to be from higher-income families, as well, with 30% being from families making more than \$50,000 per year, compared with 27% for girls ($p < .001$).

What is emerging is a picture of sociodemographic characteristics of families in early intervention that are highly interrelated, much as they are in the population at large. These characteristics, in turn, are related to other characteristics, such as the child's reason for eligibility or the age at which the child began services. This picture is further illuminated by the findings presented in the next sections.

Household Composition and Family Structure

The number of people in a child's household has the potential to contribute negatively or positively to a child's development. A single adult is considered a riskier environment for the child because there is only one adult to address the child's needs (Sargent, 1999). Since special-needs children often place more demands on their caregivers than other children do (Booth & Kelly, 1998), being the sole caregiver could be even more challenging with a special-needs child. Similarly, more children in the household can be an environment of higher risk because there are more demands being made on however many adults are present.

Most of the children who entered early intervention were living in households with two or more adults and with one or more siblings. About one in seven (15%) lived in single-parent households (Table 2). About two-thirds (68%) of the children were in households with two adults, and another nearly 2 in 10 (18%) were in households with three or more adults. In the general population, 72% of children live in two-parent households, and 11% live in households with three or four adults (NHES, 1999).

Slightly fewer than one-third of the children in early intervention (31%) had no siblings at the time they began services. This is comparable to the proportion in the general population of children up to age 3 (NHES, 1999). Another 36% were one of two children, again comparable to the general population. About one in five early intervention entrants were one of three children, with the other 14% from families with four or more children.

The majority of the mothers of the early intervention entrants were married (63%). Another 11% were living with a partner, for a total of 74% living with a spouse or partner, which was identical to the percentage for the general population (Table 2). Most of the early intervention entrants (62%) were living with both of their biological parents, and another 27% were living with only one biological parent (Figure 4, see page 15). The other 1 in 10 were in many different care arrangements, including adoptive parents, foster parents, and other family members. The household composition for children in early intervention differed from that of the general population in that far fewer children in early intervention were living with both biological parents (62% vs. 73%) and far more were living with neither biological parent (11% vs. 1%) (NHES, 1999). Much of this latter difference is attributable to the large proportion of children in early intervention who were in foster care. Seven percent of the children in early intervention were in foster care, a rate 10 times that for the general population (Hebbeler et al., 2001).

Most children lived with their biological mothers at the time they entered early intervention (88%), and slightly fewer than two-thirds lived with their biological fathers (63%). Both of these figures are less than those for young children in the general population. Fewer than 1% of the children in early intervention lived with their biological fathers but not their biological mothers. One in five of the children in early intervention lived in households with at least one other child that had a special need. Having several children with disabilities creates additional stress and greater caregiving burden than what is typical for most families with infants and young children.

Children who were eligible for early intervention for different reasons came from different kinds of households. Children with risk conditions were more likely to live with only one adult (22%), compared with those with developmental delays (15%) or diagnosed conditions (10%, $p < .001$). Children with developmental delays were less likely to have no siblings (28%, compared with 35% for children with diagnosed conditions and 37% for children with risk conditions, $p < .001$). Children with developmental delays were more likely to live in a household with another child with a special need (23%, compared with 14% for children with diagnosed conditions and 18% for children with risk conditions, $p < .001$).

The child's age at the development of the IFSP bore little relationship to household composition, with the exception of number of children in the family. The younger the child at entry, the more likely the child was to be an only child. One-third of those who began early intervention services at less than 12 months old had no siblings, compared with 30% of those 12 to 24 months and 26% of those 24 months or older ($p < .001$). Females also were more likely to have no siblings (32% vs. 29% for males, $p < .001$).

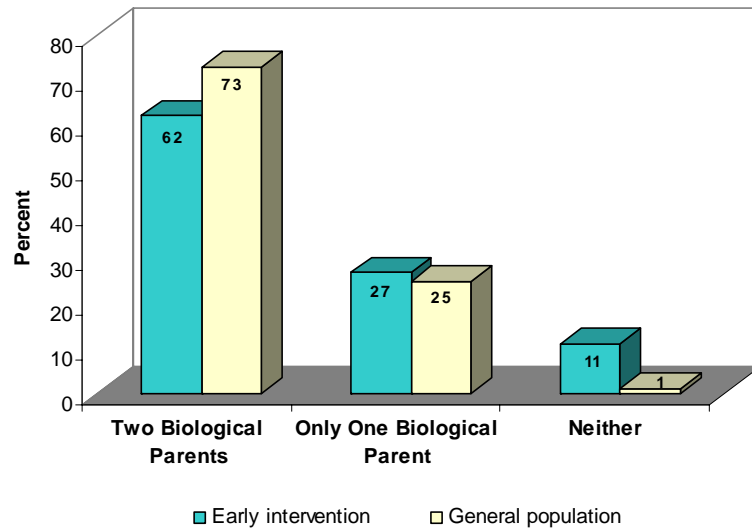
Table 2
COMPOSITION OF HOUSEHOLDS OF CHILDREN RECEIVING EARLY
INTERVENTION SERVICES AND THE GENERAL POPULATION

Characteristic	Early Intervention Percentage	General Population Percentage ^a
Total number of adults living in household		
One	15	15
Two	68	72*
Three	11	8*
Four	5	3*
Five or more	2	1
Total number of children living in household		
One	31	30
Two	36	38
Three	19	20
Four	8	8
Five or more	6	4*
Mother living with spouse or partner		
Yes	74	74
Mother married		
Yes	63	
Type of caregiver(s) in child's household		
Two biological parents	62	73***
One biological parent only	27	25
Neither	11	1***
Living with biological mother		
Yes	88	96***
Living with biological father		
Yes	63	74***
Number of other children in the household with special needs		
None	80	
One	16	
Two	3	
Three or more	1	

^a General population data from NHES (1999) for families with children up to 3 years of age.

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

Figure 4
TYPE OF CAREGIVERS IN CHILD'S HOUSEHOLD FOR CHILDREN RECEIVING EARLY
INTERVENTION SERVICES AND THE GENERAL POPULATION



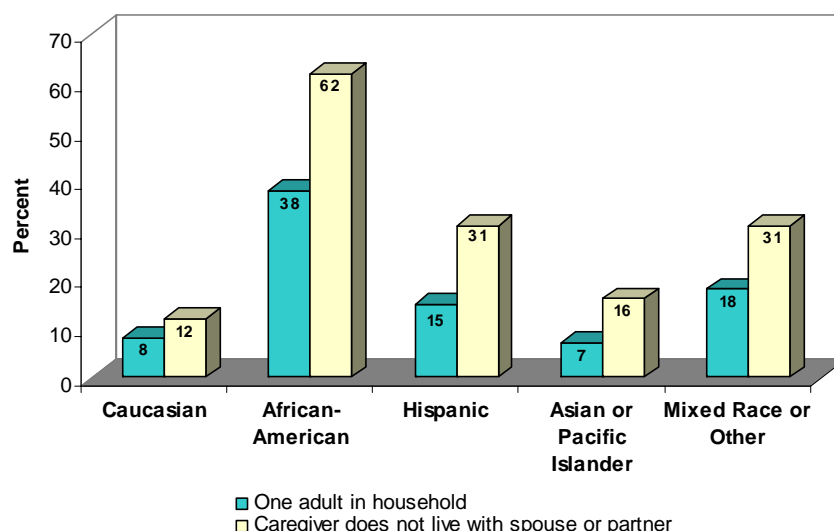
*General population data from NHES (1999) for families with children up to 3 years of age.

The composition of the household varied substantially for early intervention recipients of different ethnicities. African-American children were far more likely than other children to live in households with only one adult. Nearly 4 in 10 African-American children were living with only one adult, which was far more than any of the other ethnic groups ($p < .001$, Figure 5). Consistent with this finding, African-American children were also far more likely than other children to be living in households in which their caregiver was not living with a spouse or partner. The majority of the caregivers of the African-American children in early intervention (62%, also Figure 5) were not living with a partner or spouse. In the general population, African-American families are much more likely to consist of single-parent households (61%) than are Caucasian families (14%) (NHES, 1999).

There are some families that include two or more adults but the primary caregiver does not have a spouse or partner living with her (e.g., a single mother living with her mother). The differences between the two bars in Figure 5 are the families that have at least two adults but the mother does not live with a spouse or partner. For example, 31% of Hispanic children were in households in which their primary caregiver was not living with a spouse or partner; however, only 15% were living in households with only one adult. In the other 16%, a second (or third or fourth) adult was present, but this person was not a partner of the primary caregiver. For every racial/ethnic group, a sizable percentage of the caregivers living without partners did have another adult present. This phenomenon is potentially beneficial to the child in that the second adult could share some of the parenting responsibilities.

There also were strong differences among racial/ethnic groups in the likelihood that a child receiving early intervention would be living with three or more adults. Whereas only 12% of the Caucasian children and 18% of the African-American children were living in households with more than two adults, 30% of the Hispanic children and 36% of the Asian or Pacific Islander children were living in such households ($p < .001$).

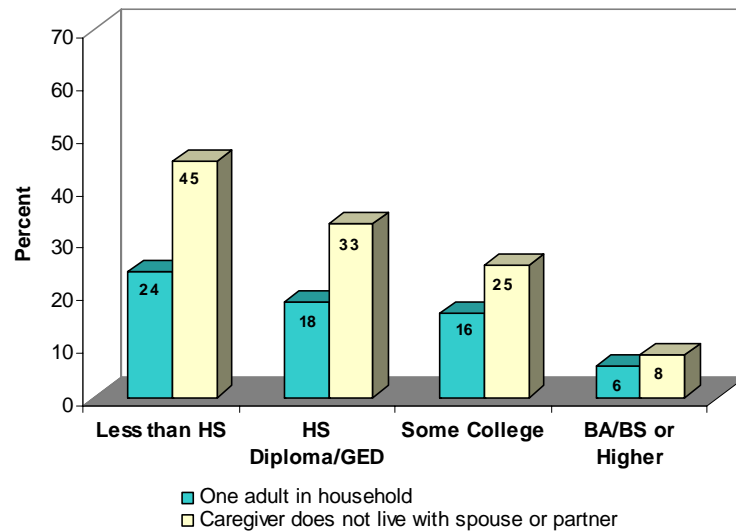
Figure 5
ONE-ADULT HOUSEHOLDS AND HOUSEHOLDS IN WHICH PRIMARY CAREGIVER HAD NO SPOUSE OR PARTNER PRESENT, FOR CHILDREN RECEIVING EARLY INTERVENTION SERVICES, BY RACE/ETHNICITY



Asian or Pacific Islander children were far more likely than children from other groups to have no siblings (44%, compared with 32% for Caucasian children, 25% for African-American children, and 27% for Hispanic children, $p < .001$). Fewer than 1 in 10 Caucasian children (8%) lived in a household with four or more children. The figure was roughly one in five for all other ethnic groups ($p < .001$). African-American children were most likely to live in households in which there was another child with special needs (25%), and Asian or Pacific Islander children were least likely (8%, $p < .001$).

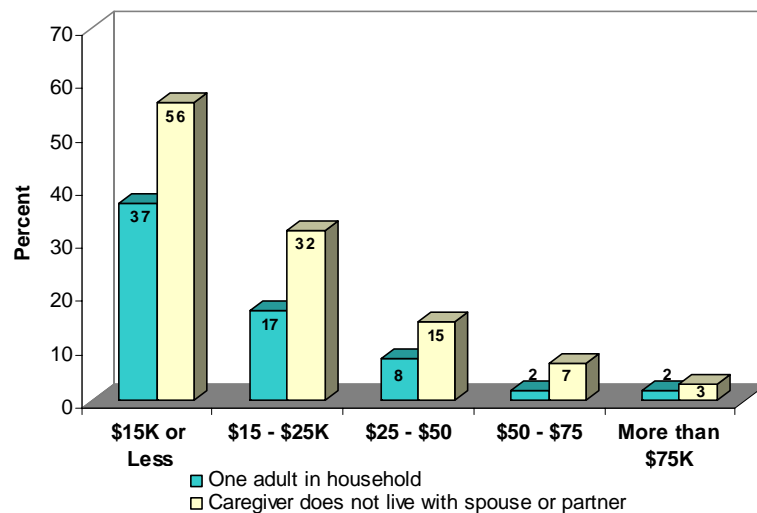
The composition of households of children in early intervention also differed substantially for children of mothers with different levels of education. Children of mothers with less education were more likely to be living in households with only one adult and were more likely to be living in households with four or more children. Nearly one in four children of mothers who did not finish high school were living in households with only one adult, compared with 6% of the children of mothers with at least a bachelor's degree ($p < .001$; Figure 6). Similarly, there was a direct relationship between education level and whether the mother was living with a spouse or partner ($p < .001$). There also were likely to be more children in the households of mothers with less education. One in four children of mothers who did not complete high school had no siblings, compared with 35% of those with at least a bachelor's degree ($p < .001$). At the other end of the spectrum, 21% of the households in which the mother did not finish high school had four or more children, compared with 7% for those of mothers with at least a bachelor's degree. This finding is especially troubling from a child development perspective. The mothers who had the least in the way of educational resources also had the least in the way of social resources in the form of another person with whom to share parenting a child with special needs. Both of these risks, and especially the combination, put the child at risk for poorer developmental outcomes.

Figure 6
SINGLE-PARENT HOUSEHOLDS AND HOUSEHOLDS WITH NO SPOUSE OR PARTNER PRESENT, FOR CHILDREN RECEIVING EARLY INTERVENTION SERVICES, BY MOTHER'S EDUCATION LEVEL



The findings for household income and household composition parallel those for education level, with lower-income households being more likely to have fewer adults and more children. Thirty-seven percent of the households making \$15,000 or less annually were households with only one adult. This figure decreases with each income category, with only 2% of the households with annual incomes of more than \$75,000 being single-adult households ($p < .001$; Figure 7). This relationship is somewhat cause and effect since more adults in the household translates into more potential wage earners. Again, the finding has powerful implications for child outcomes; nearly 4 out of 10 children in the poorest households were being raised by one adult.

Figure 7
SINGLE-PARENT HOUSEHOLDS AND HOUSEHOLDS WITH NO SPOUSE OR PARTNER PRESENT, FOR CHILDREN RECEIVING EARLY INTERVENTION SERVICES, BY HOUSEHOLD INCOME



Household income was not related to the likelihood of a child in early intervention being an only child but it was related to the family's having 4 or more children. Whereas 17% of the families with incomes of \$15,000 or less and 18 % of the families with incomes of \$15,000 to \$25,000 had 4 or more children, this was true for only 5% of the families with incomes of more than \$75,000 ($p < .001$). Twenty-two percent of the households making less than \$15,000 had at least one other child with special needs compared to 16% of those making more than \$75,000 ($p < .001$).

Ages, Employment Status, and Educational Attainment of Primary Caregivers and Their Partners

Information on the parents' ages, level of educational attainment, and employment status is important in its own right, because it allows a determination of whether families with infants and toddlers receiving early intervention services are similar to other families with young children generally. These parental characteristics also have important implications for the kinds of services and supports that families with young children with disabilities might need. Families in which mothers or primary caregivers work outside the home may prefer certain kinds of services rather than others, and might have child care needs that other families will not have. These factors could be related to how different families experience early intervention, and they also could relate to the child and family outcomes that are observed.

As noted above, 88% of the children in early intervention lived with their biological mothers. The ages of both the biological mother and the primary female caregiver at the child's birth are presented because they have different implications for child development. The age of the birth mother is important for understanding biological risks that might have been present at the time of the child's birth, especially for children born to older mothers, who are at greater risk for birth complications (Ventura et al., 1999). The age of the primary female caregiver is important in that very young caregivers might be less prepared to deal with the demands of parenting. Given that mothers and primary caregivers are not the same person for 12% of the children in early intervention, data are presented on the ages of both. To avoid confusion, in this section we will refer to the "biological mother" or the "primary female caregiver."

Most of the children entering early intervention were born to mothers who were between 20 and 35 years old at the time of the child's birth. A very small percentage of children (0.3%) had mothers who were less than 15 years old. About 1 in 10 (11%) were born to mothers between 15 and 20 years old. The percentage of children in early intervention born to mothers over 35 was similar to that in the general population (18% vs. 16%; NHES, 1999).

The primary female caregivers also spanned the age spectrum, with most between 20 and 35. The primary female caregivers included more older women than the biological mothers, with 25% being over 35 years old. There were more children in early intervention being cared for by women over 40 than in the general population (10% vs. 3%; NHES, 1999).

The employment status of the primary female caregiver is also an important factor affecting family life, functioning, and economic well-being, as well as having implications for service needs and service utilization. Nearly half (44%) of the female caregivers of children in early intervention were employed (Table 3).

Table 3
AGE AND EMPLOYMENT STATUS OF MOTHERS AND PRIMARY FEMALE
CAREGIVERS OF CHILDREN RECEIVING EARLY INTERVENTION SERVICES

Characteristic	Early Intervention Percentage	General Population Percentage ^a
Biological mother's age (in years) at child's birth		
< 15	0.3	
15 - < 20	11	9
20 - < 25	22	21
25 - < 30	24	27*
30 - < 35	25	27
35 - < 40	14	13
40 or older	4	3
Primary female caregiver's age (in years) at child's birth		
< 15	0.2	
15 - < 20	10	9
20 - < 25	20	21
25 - < 30	22	27*
30 - < 35	24	27
35 - < 40	15	13
40 or older	10	3***
Primary female caregiver's employment (yes)	44	57***
Hours Employed		
< 20 hours/week	17	
20-35 hours/week	32	37 ^b
> 35 hours/week	51	63 ^c
Would work, be in job training, or go to school if had someone to care for child	51	
^a General population data from NHES (1999) for families with children up to 3 years of age.		
^b This population percentage refers to primary caregiver's employment at less than 35 hours per week.		
^c This population percentage refers to primary caregiver's employment at greater than or equal to 35 hours per week.		
* = p < .05, ** = p < .01, *** = p < .001		

Of these, half (51%) were employed full-time, with another third (32%) working from 20 to 35 hours per week. National data about mothers with children up to 3 years of age in 1999 indicate that 57% were employed, which is substantially more than the proportion among female caregivers of children in early intervention (NHES, 1999). The percentage of working mothers in the general population could be higher because more female caregivers of children with special needs choose not to work because of their young child's special needs or because they cannot find child care to allow them to work. About half (51%) of the unemployed female caregivers of children in early intervention indicated that they would work, be in job training, or go to school if they could find child care.

The age of the primary female caregivers at the birth of the child and their employment status were related to several other characteristics. Children who entered early intervention at younger ages were more likely to have primary female caregivers who were over age 35 when the child was born. Thirty percent of the children who began early intervention services at less than 12 months of age had primary female caregivers who were 35 or older

when the child was born, compared with 20% for those who began services between 12 and 24 months and 23% for those who began after 24 months.

There was also a strong relationship between the education level of the primary female caregiver and her age when the child was born, with more educated and wealthier mothers more likely to be older. Only 15% of female caregivers who didn't finish high school were 35 or older when the child was born, compared with 37% of those with a bachelor's degree ($p < .001$). This pattern matches general population trends: of those caregivers who did not finish high school, 8% were 35 or older when the child was born, compared with 25% of those with a bachelor's degree (NHES, 1999). There was a similar relationship between female caregiver's age and household income, with 13% of the female caregivers with annual incomes of \$15,000 or less being 35 or older when the child was born, compared with 44% of those with household incomes of more than \$75,000. Similarly, national data indicate that in families with annual household incomes of \$15,000 or less, 9% of primary caregivers were 35 years or older at the child's birth, compared with 33% in families with annual household incomes of more than \$75,000 (NHES, 1999).

Female caregivers of children eligible for early intervention for different reasons were employed at different rates. Caregivers of children with developmental delays were most likely to be employed (47%, compared with 40% for children with diagnosed conditions and 38% for children with risk conditions). Among those who were employed, caregivers of children with risk conditions were most likely to be working more than 35 hours a week (59%, compared with 48% for developmental delay and 55% for diagnosed conditions, $p < .05$). The older the child at entry to early intervention, the more likely the female caregiver was to be employed. Half the caregivers of children 24 months or older at entry were employed, compared with 39% for children less than 12 months old and 45% for children 12 to 24 months old at entry ($p < .001$). It is not surprising that the female caregivers of the older children would be more likely to be in the workforce.

Female caregivers of boys and girls were equally likely to be employed, but caregivers of girls were more likely to be working more than 35 hours (56% vs. 48%, $p < .01$). Caregivers of Caucasian or Asian/Pacific Islander children were most likely to be employed (46% and 49%, respectively, compared with 41% for African-American and 37% for Hispanic children, $p < .001$). Caregivers of Asian/Pacific Islander children and African-American children were most likely to be working more than 35 hours a week (both 63% of those employed, compared with 58% for Hispanic children and only 44% for Caucasian children, $p < .001$). The more highly educated the caregiver, the more likely she was to be employed. For example, only 22% of those who did not finish high school were employed, compared with 57% of those with a bachelor's degree or more ($p < .001$). The relationship was not so direct for number of hours worked, however. The group most likely to work more than 35 hours per week were mothers with a high school diploma (57% of those employed), and those least likely to work that amount of hours were those who did not finish high school (37%, $p < .001$). With regard to income, those with annual household incomes of \$15,001 to \$25,000 were most likely to work more than 35 hours. Those least likely were those with incomes of \$15,000 or less ($p < .001$).

Unemployed caregivers who indicated they would work or be in job training or school if they could find child care were far more likely to be minority, with limited education or low income. The majority of African-American and Hispanic female caregivers (76% and 65%, respectively) indicated they would be working or in job training or school if they had child

care, compared with only 34% of the Caucasian caregivers. Three-fourths of mothers who did not finish high school (76%) indicated child care kept them from school or work, compared with 46% of those with some college and only 24% of those with a bachelor's degree or higher. The figures by household income were very similar, with 75% of those with incomes of \$15,000 or less a year citing child care as a barrier, compared with only 18% of those in households with incomes of more than \$75,000. Finding high-quality child care for infants is difficult for many families in this country, but among those with infants with special needs, the problem is especially widespread for those who are minority or socioeconomically disadvantaged.

As noted above, 74% of the female caregivers were living with a spouse or partner. This section describes the ages, education levels, and employment status of those partners. Most of these individuals were the child's father, so the terms will be used interchangeably. The spouses and partners of the child's primary caregiver also had a wide range of ages and education levels (Table 4). They were predominantly 25 to 40 years old when the child was born, with more of them 35 or older than were the primary female caregivers (39% vs. 25%). Far fewer of the spouses/partners were teenagers at the time the child was born, compared with the female caregivers. Only 2% of the spouses/partners were younger than 20, compared with 10% of the primary female caregivers. Compared with the general population of fathers in families with children up to age 3, fathers with children in early intervention were older.

Table 4
AGE, EDUCATIONAL ATTAINMENT, AND EMPLOYMENT STATUS OF
SPOUSES/PARTNERS OF FEMALE CAREGIVERS OF CHILDREN RECEIVING
EARLY INTERVENTION SERVICES AND THE GENERAL POPULATION

Characteristic	Early Intervention Percentage	General Population Percentage ^a
Spouse/partner's age (in years)		
< 15	0	
15 - < 20	2	2
20 - < 25	12	12
25 - < 30	20	25***
30 - < 35	28	32**
35 - < 40	22	19
40 or older	17	11***
Spouse/partner's educational attainment		
Less than high school degree	11	13
GED or high school degree	34	26**
Some college	23	25
Bachelor's degree or higher	32	36
Spouse/partner's employment (yes)	90	95***
< 20 hours/week	1	
20-35 hours/week	6	4 ^b
> 35 hours/week	93	96 ^c

^a General population data from NHES (1999) for families with children up to 3 years of age.

^b This population percentage refers to spouse/partner's employment at less than 35 hours per week.

^c This population percentage refers to spouse/partner's employment at greater than or equal to 35 hours per week.

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

The fathers also were better educated than the female caregivers. Compared with the female caregivers, fewer of the spouses/partners had not finished high school (11%), and more of them (nearly one-third, 32%) had achieved a college degree or higher educational level. As was true for the mothers, a higher percentage of fathers of children in early intervention than fathers in the general population had completed high school but had not taken college classes.

Nine out of 10 spouses/partners were employed, and of those, the vast majority (93%), were working full-time (Table 4). The employment rate for fathers of children in early intervention was lower than the employment rate for the general population of men with children age 3 and younger (96%; NHES, 1999).

The fathers of children with risk conditions were most likely to be 35 or older (43%, compared with 37% for developmental delays and 36% for diagnosed conditions, $p < .01$), as were those of children who were less than 12 months of age at entry to early intervention (41%, compared with 34% for children 12 to 24 months and 39% for children over 24 months, $p < .001$). Asian or Pacific Islander children, followed by African-American children had the oldest fathers (for 54% and 44%, respectively, of these groups, the fathers were 35 or older, compared with 37% for Caucasian children and 34% for Hispanic children). There was a direct relationship between father's age and household income: those with more income were older ($p < .001$). Sixty percent of those with household incomes of more than \$75,000 were 35 or older when the child was born, compared with only 23% of those making \$15,000 or less.

The fathers of children with developmental delays had higher levels of education than the other two groups (35% with bachelor's or higher, compared with 26% for children with diagnosed conditions and 28% for children with risk conditions, $p < .01$). There were substantial differences in the education levels of the fathers of children from different racial/ethnic groups. Nearly half of the fathers in families with Asian or Pacific Islander children (49%) had a bachelor's degree or higher, compared with 37% of fathers of Caucasian children, 16% of Hispanic children, and 15% of African-American children.

Although the fathers tended to be more highly educated than the mothers, it is also true that the mothers of children in early intervention tended to partner with spouses of similar education levels. For nearly half of the families in which the mother did not finish high school, the spouse also did not finish high school (49%). For another 39%, the spouse had only a high school diploma. At the other end of the education scale, for 69% of the families in which the mother had a bachelor's degree or higher, the spouse also had a bachelor's degree or higher ($p < .001$). Not surprisingly, household income was strongly related to the education level of the spouse or partner. Three-fourths of those with household incomes of \$15,000 or less had a high school diploma or less, and 72% of those making more than \$75,000 had a bachelor's degree or higher.

Fathers of children who entered early intervention later were more likely to be employed (93% for children 24 months or older at entry, compared with 91% for children 12 to 24 months and 88% for children under 12 months at entry, $p < .05$). Spouses of mothers with a bachelor's degree or higher were more likely to be employed than spouses of mothers who did not finish high school (94% vs. 85%, $p < .01$). They also were more likely to work more than 35 hours per week (96% vs. 92%, $p < .001$). As would be expected, fathers with higher levels of income were employed at increasingly higher rates. Nearly-three quarters of the fathers in households making \$15,000 or less were employed, compared

with 99% in households with annual incomes of more than \$75,000. Of those who were working, 77% of those with household incomes of \$15,000 or less were working full-time, compared with 98% of those with incomes of more than \$75,000 a year.

Indicators of Economic Well-being

Household income is a strong measure of a family's economic security, and those data have already been presented. To augment this measure, the study looked at several other indicators of economic well-being, including the kinds of public assistance being received now or in the past, the type of housing, and the family's satisfaction with their housing and transportation arrangements.

As discussed above, 43% of the families in early intervention had incomes of \$25,000 or less a year. As would be expected given the number of families with limited income receiving early intervention, a significant percentage of families with children in early intervention were receiving some form of public assistance (Table 5). One-fourth of families (26%) receiving early intervention also were receiving welfare payments at the time of the interview or had received them sometime in the past year. Six percent had received welfare payments in the past year but currently were not, and 20% were receiving welfare payments at the time of the interview. In comparison, national data indicate that 11% of families with children up to age 3 receive welfare payments. About one-fourth of the families were receiving food stamps at the time of the interview (24%), and nearly half (46%) were receiving food or food vouchers from WIC (Supplemental Food Program for Women, Infants, and Children). Both of these are higher than the general population. Nationally, 15% of families with children up to age 3 receive food stamps, and 34% receive assistance from WIC (NHES, 1999). About one in seven families of children in early intervention were receiving or had ever received Supplemental Security Income (SSI) for the child (14%).

The majority of families receiving early intervention services were living in housing that they owned (54%) or were renting (36%), with a small proportion (9%) living in subsidized housing. Most families were pleased with their current housing arrangements. When asked how well their current housing met their families' needs, about half (48%) said it was excellent and another 31% said it was good. Families also were asked to rate the adequacy of their current transportation. Again, high percentages of families were satisfied. More than half (52%) said their current transportation was excellent, and 28% said it was good.

The socioeconomic disparities by racial and ethnic group that exist among families receiving early intervention services have already been discussed, and they also are reflected in the other indicators of economic well-being. Half of the African-American children (50%), one-third of the Hispanic children (32%), and one-fourth of the Asian or Pacific Islander children (25%) were in families who currently were receiving welfare or had received welfare in the past year. The figure for Caucasian children was 15% ($p < .001$). The data for the current receipt of food stamps were very similar. The pattern for the receipt of food or food vouchers from WIC was also similar, although the numbers were higher. For example, 72% of the African-American and 63% of the Hispanic children's families were currently receiving assistance from WIC. The receipt of these various forms of assistance was also strongly linked to mother's education level and household income, with those with the least education and the lowest household incomes being far more likely to receive them.

Table 5
INDICATORS OF ECONOMIC WELL-BEING FOR FAMILIES OF CHILDREN
RECEIVING EARLY INTERVENTION SERVICES

Characteristic	Early Intervention Percentage	General Population Percentage ^a
Not currently receiving but had received welfare payments in past year	6	
Currently receiving welfare payments	20	
Received welfare payments now or in the past year	26	11
Currently receiving food stamps	24	15 ^b
Currently receiving food/food vouchers from WIC	46	34 ^c
Not currently receiving but had received Supplemental Security Income (SSI) for the child in the past	2	
Currently receiving Supplemental Security Income (SSI) for the child	12	
Type of housing		
Own	54	52
Rent	36	42
Subsidized	9	
Other	2	7
Extent to which current housing meets family's needs		
Excellent	48	
Good	31	
Fair	15	
Poor	6	
Extent to which current transportation meets family's needs		
Excellent	52	
Good	28	
Fair	14	
Poor	7	

^a General population data from NHES (1999) for families with children up to 3 years of age.
^b This population percentage refers to families receiving food stamps at the time of the interview or in the past 12 months.
^c This population percentage refers to families receiving food/food vouchers from WIC at the time of the interview or in the past 12 months.

Children with risk conditions also were more likely to live in households that had received food stamps or assistance from WIC than were children with developmental delays or risk conditions. For example, 61% of the children with risk conditions were in families who received assistance from WIC, compared with 41% of children with developmental delays and 44% of those with diagnosed conditions ($p < .01$).

Receipt of Supplemental Security Income for the child was related to several child and family characteristics. Children who began early intervention at less than 12 months of age were more likely than older entrants to have ever received SSI (21%, compared with 12%

for 12 to 24 months and 6% for 24 months or older, $p < .001$). Children who entered early intervention earlier have different reasons for their eligibility for early intervention, and their conditions apparently are more aligned with the eligibility requirements for SSI. African-American children were more likely to have received SSI than other ethnic groups; 26% of African-American children in early intervention had received SSI payments. The likelihood of having received SSI decreased as mother's education level and household income increased.

Home ownership was far more common among families of Caucasian children, 67% of whom owned their own home. The next highest group was Asian or Pacific Islanders at 57%, and all other groups were less than 50% ($p < .001$). African-American children were far more likely than all the other groups to be living in public or subsidized housing. One-fourth (25%) of these families did so, compared with 9% of the Hispanic families, the next highest group ($p < .001$). Not surprisingly, income and mother's education were strongly related to the likelihood that a family owned their own home and negatively related to the likelihood of living in public housing.

Also not surprisingly, the families' perception of the adequacy of their housing and transportation was related to income and education level, and for housing to race/ethnicity. For instance, two-thirds of the families in which the mother had a bachelor's degree or higher (64%) rated their housing as excellent, compared with only one-third (33%) of those who did not complete high school ($p < .001$).

Multiple Demographic Risk

As has been noted repeatedly in this report, some demographic factors pose a risk for healthy development in young children. What can be especially devastating is that these factors often co-occur—for example, mothers with limited education also often are living in poverty. The research on risk factors suggests that the potential for negative developmental outcomes increases substantially when a child has multiple risk factors (Sameroff et al., 1993; Sameroff & Fiese, 2000). In addition to demographic or environmental risk, there also are biological risk factors, such as low birth weight or poor health, that can be associated with poor development, and these are discussed in another NEELS report (Spiker et al., 2004).

To explore the occurrence of multiple demographic risk factors among children entering early intervention, a demographic risk index was constructed. The index allotted one point to a child for each of the following:

- Being a member of a minority
- Being in foster care
- Being in a low-income household (\$25,000 or less annually)
- Having a primary female caregiver with less than a high school education
- Having a primary female caregiver who was 17 years old or less at the time of the interview
- Living in a household with only one adult present
- Living in a household with one or more other children with special needs
- Living in a household with four or more children

- Adequacy of housing was rated as fair or poor
- Adequacy of transportation was rated as fair or poor.

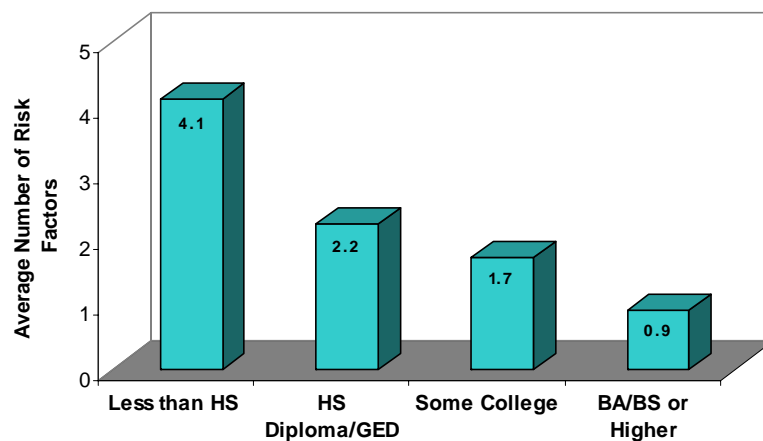
A child with all of the risk factors would have a score of 10, and a child with none would have a score of 0.

One-fourth of the children in early intervention had no risk factors (Table 6), but more than half had two or more. One in five had four or more. The average number of risk factors was two. Of particular interest were the differences in the average number of risk factors across the different subgroups that have been examined throughout this report. The differences were most striking when the risk factors were examined by level of mother's education, by race, and by household income. All of these differences were statistically highly significant ($p < .001$). Children in households in which the mother had less than a high school education had an average of 4.1 risk factors, compared with 2.2 for those of mothers with a high school diploma (Figure 8).

Table 6
NUMBER OF DEMOGRAPHIC RISK FACTORS FOR
CHILDREN RECEIVING EARLY INTERVENTION
SERVICES

Number of Risk Factors	Percentage of Children in Early Intervention
Zero	25
One	22
Two	15
Three	17
Four	10
Five	6
Six	3
Seven	1
Eight	0.15
Nine	0.11

Figure 8
AVERAGE NUMBER OF DEMOGRAPHIC RISK FACTORS FOR CHILDREN RECEIVING EARLY
INTERVENTION SERVICES, BY MOTHER'S EDUCATION LEVEL



All the children in the former category had at least one factor because limited maternal education is a risk factor, but even if that were taken away, the two groups still differed by an average of one factor. This indicates that the education level of the mother was not the only difference between these households. Similarly, African-American children had an average of 3.7 risk factors, compared with 3.1 for Hispanic children and 1.0 for Caucasian children (Figure 9). Minority status raises the risk index by one for African-American and Hispanic children, but the differences in these households are greater than just minority status. The same pattern can be seen for children in households with different income levels (Figure 10). Children in early intervention in low-income households averaged two additional risk factors besides limited income. There also were differences in the number of risk factors among children who received early intervention for different reasons and who entered at different ages. Those who were eligible for early intervention because of a risk condition averaged 2.3 factors, compared with 1.8 for those with developmental delays ($p < .001$). Those who entered early intervention younger also had a higher number of risk factors (2.2 for under 12 months vs. 1.8 for 24 months or older at entry, $p < .001$). At this point in the NEILS analysis, the demographic risk index gives a descriptive picture of the children receiving early intervention services. Future analyses will examine the outcomes experienced by children when they turn 36 months of age and examine whether or not the extent of demographic risk relates to these outcomes.

Figure 9
AVERAGE NUMBER OF DEMOGRAPHIC RISK FACTORS FOR CHILDREN RECEIVING EARLY INTERVENTION SERVICES, BY RACE/ETHNICITY

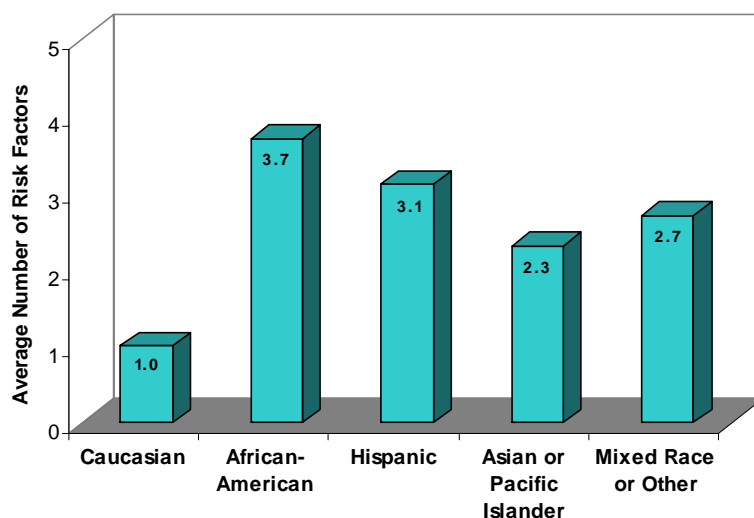
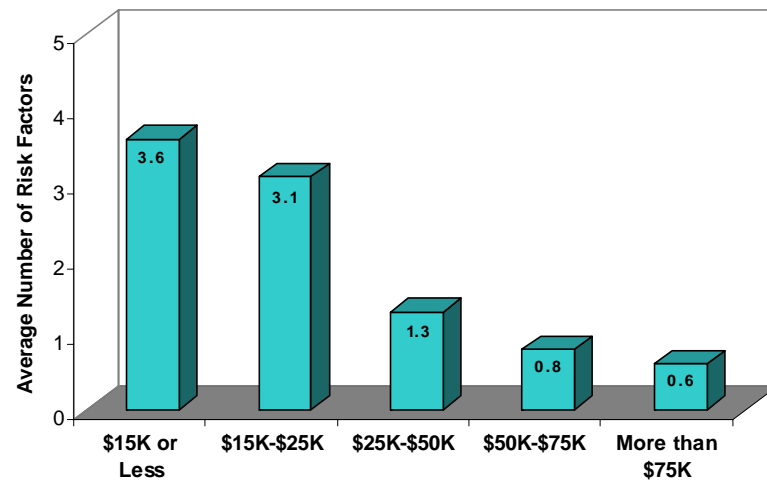


Figure 10
AVERAGE NUMBER OF DEMOGRAPHIC RISK FACTORS FOR CHILDREN RECEIVING EARLY INTERVENTION SERVICES, BY HOUSEHOLD INCOME



CONCLUSIONS

This report has presented a descriptive picture of the demographics of early intervention participants. The demographic characteristics examined included the race/ethnicity of the child, the education level of the mother, household income, household composition, age of caregivers, their employment status, and some indicators of economic well-being. To provide a more unified description of co-occurring demographic factors, a demographic risk index was created, and findings were reported for this index. The report also looked at differences in demographic characteristics with regard to two child characteristics related to the receipt of early intervention, the child's age at first IFSP, and the reason the child was eligible for early intervention. Demographic characteristics also were examined with respect to each other and other child and family characteristics: gender, race/ethnicity, mother's education level, household income, and whether the family was receiving public assistance at entry to early intervention. This chapter summarizes the findings on the demographic characteristics of children and families who received early intervention services and discusses their implications for services delivered under Part C of IDEA and the potential impact of those services on the children and families who receive them.

Summary of Child and Family Characteristics

A major conclusion emerges from these data about the typical child in early intervention: *there is no typical child or family receiving early intervention services*. This conclusion is substantiated by other study data and will be discussed in forthcoming NEILS reports (Spiker, Mallik, et al., 2003; Spiker, Scarborough, et al., 2003). The conclusion holds with regard to the type of disability or delay that has resulted in the child's participation in early intervention, as well the demographic characteristics of the children and families. The population of early intervention recipients includes Caucasian children and children of color. It includes families who are struggling economically, as well as families who have substantial financial resources. It includes families with one adult, two adults, and three or more adults. Most children in early intervention live with two biological parents, but a sizable proportion do not. Some children in early intervention have no siblings; others have four or more siblings, perhaps including a sibling with a special need. Some children receiving early intervention are being cared for by mothers with graduate degrees and others by mothers who did not finish high school. The remainder of the chapter summarizes some of the key findings, but all of these need to be placed in the context of the extent of the variation that is to be found among children and families participating in early intervention programs.

Underrepresentation of minority children in early intervention programs has been an ongoing policy concern and is even discussed in Part C of IDEA. The challenge in determining whether underrepresentation occurs is to identify the expected representation. This study has several findings that speak to the issue of underrepresentation. Among infants and toddlers entering early intervention, 21% were African-American and 53% were Caucasian. Both of these numbers differ significantly for the general population of children up to 3 years of age. More children in the general population are Caucasian (61%) and fewer are African-American (14%; NHES, 1999). Percentages for the other major racial/ethnic groups in early intervention are comparable to those in the general population.

Families receiving early intervention services are also disproportionately poor. Among early intervention families, 27% had annual household incomes of less than \$15,000 per year,

compared with only 21% for the general population of families of children up to age 3 (NHES, 1999). Other indicators substantiate that many early intervention families are economically disadvantaged: more than one in four received welfare payments in the past year, about one in four were receiving food stamps at the time the child enrolled in early intervention, and one in five were living in housing that did not meet the families' needs. As in the general population of families with children under 3, minority families were far more likely to be poor; 49% of the families of African-American children receiving early intervention were living in households with incomes of less than \$15,000.

The well-documented relationship between poverty and poor outcomes for young children (Brooks-Gunn & Duncan, 1997; Duncan & Brooks-Gunn, 1997) suggests that proportionately more children from low-income families would be receiving early intervention because poverty is linked to numerous factors, such as lack of prenatal care, poor nutrition, and limited access to preventive medical care, that increase the likelihood of delay or disability for infants and toddlers. The unanswered question is what proportion of children from low-income families from the general population should be receiving early intervention services. Although children from low-income families are mathematically overrepresented among children receiving early intervention services, they could, in actuality, be underrepresented. Determining over- or underrepresentation would require knowing how many children from low-income families in the general population would qualify for services based on the true rates of disability conditions and risk factors used to determine eligibility. This study cannot address this issue. This same point applies to infants and toddlers from minority groups. The relationship between poverty and minority status strongly suggests that there should indeed be proportionately more minority children receiving early intervention services, but the appropriate proportion is unknown.

Children receiving early intervention services are being cared for by women with a range of education levels: 16% did not complete high school, and 24% had a bachelor's degree or higher. Education levels of the fathers are equally diverse, although higher than the mothers', with 11% who did not finish high school and 32% with a bachelor's degree or higher.

Most children receiving early intervention (68%) were living in families with exactly two adults, which was somewhat lower than in the general population (72%; NHES, 1999). Fifteen percent of children receiving early intervention were living with one adult and the others with three or more adults. Most children (62%) lived with two biological parents. Most children receiving early intervention (36%) had one sibling, but nearly as many (31%) had no siblings. One in five children in early intervention had at least one sibling with special needs.

Most of the mothers of children in early intervention (71%) were between 20 and 35 years of age when the child was born. Seventy percent of the fathers were between 25 and 40. Mothers of children receiving early intervention tended to be employed at a lower rate than mothers of children up to age 3 in the general population (44% vs. 57%; NHES, 1999). Half of the employed mothers of children in early intervention were working full-time. Among those who were not employed, half (51%) indicated they would be if they could find child care. Nearly all of the fathers of children in early intervention were employed (90%), and most of these were employed full-time.

Relationship between Characteristics

The report presented findings on the relationship between several child and family characteristics and child and family demographics. Two of these related to the child's special needs: age when the child began early intervention (under 12 months of age, 12 to 24 months of age, and 24 to 31 months of age) and reason for receipt of early intervention (developmental delay, diagnosed condition, or risk condition). These two factors also are related to each other, with children who are younger at entry being more likely to be eligible for early intervention because of a diagnosed condition or a risk condition.

Age at entry to early intervention was related to several demographic characteristics. Children who began services at younger ages had mothers with less education and came from families with less income. Children who began services younger were more likely to have no siblings. Mothers of younger children were less likely to be employed. Younger children at entry to early intervention were more likely to live with families who had received SSI payments for the child. Possible explanations for most of the relationships between demographic characteristics and age at entry to early intervention are not readily apparent, with the exception of maternal employment: mothers of the youngest children would be least likely to be in the workforce.

Reason for eligibility for early intervention was also related to several demographic characteristics, including:

- Children with diagnosed conditions had mothers with higher education levels.
- Children with risk conditions were more likely to be from low-income families.
- Children with risk conditions were more likely to have no siblings and more likely to come from families with four or more children.
- Children with risk conditions were less likely than children with developmental delays (who were less likely than children with diagnosed conditions) to live with their biological mother. The same relationship held for living with the biological father.
- Children with risk conditions had older mothers, and their mothers were more likely to be employed.
- Children with risk conditions were more likely to have received WIC assistance and food stamps and to live in public housing.

The relationship between gender and demographic characteristics was also examined. Only a few relationships were found:

- More mothers of boys had bachelor's degrees.
- Girls were more likely to have no siblings and to be from families with four or more children.
- Boys were more likely to live with both biological parents.
- Girls had mothers who were more likely to be employed full-time.

All of the demographic factors were related to each other. Differences were found for race/ethnicity with respect to nearly every other demographic factor. Overall, minority children in early intervention were more likely to have the demographic characteristics associated with poor developmental outcomes, such as lower level of mother's education, lower family income, and only one adult in the household. Similarly, low income was related to the other demographic variables.

To better capture the extensive interrelationships among the demographic factors, an index consisting of 10 indicators of demographic risk was developed. Research has shown that the risk factors tend to have a cumulative impact on development, with children who have more risk factors having poorer outcomes (Sameroff et al., 1993). The average number of risk factors for a child in early intervention was two. Half the children in early intervention had two or more risk factors; one in five had four or more. The co-occurrence of life circumstances that put some children at high risk for poor developmental outcomes is illustrated by the risk factors. Children in families with household incomes of less than \$15,000 averaged 3.6 risk factors, compared with less than one risk factor for children in families earning more than \$50,000. Interestingly, children who were eligible for early intervention because of a risk condition, most of which were biological risk conditions such as low birth weight, also had a higher number of environmental risk factors (2.3) than did children with diagnosed conditions (1.8) or developmental delays (2.0). Children who entered early intervention at younger ages also had more demographic risk factors than children who entered at later ages. It should be noted that, for all children in early intervention, these demographic risk factors are in addition to having special needs that also put the child at risk for poorer outcomes. Subsequent NEELS data on outcomes at 36 months of age and in kindergarten will address the question whether children in early intervention with multiple demographic risk factors do in fact experience poorer developmental outcomes.

Because of the variety in household demographics of families in early intervention, the early intervention service system also must have a variety of ways to work with families. The form and type of service most appropriate for a young single mother who did not finish high school are not likely to be identical to the services most appropriate for the highly educated, upper-income mother who is working full-time. Similarly, the supports early intervention can provide to a caregiver who lives alone could well be different from the supports needed by a two-parent family, which could be different from those needed by families with three adults. The same point applies to families with only one child, the child in early intervention, and families with many children including one or more other children with special needs. The data presented in this report confirm just how diverse the families receiving early intervention are and reinforce the need for the individualized, family-centered services that are a cornerstone of the Part C early intervention system.

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