

The Relationship of Early Home Literacy Activities and Infants' and Toddlers' Mental Skills

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Perspective

Children's first experiences with books, stories, and songs commonly occur at home with family members and other caregivers. These early experiences can encourage language development and teach children about the world around them, setting children on the path to successful cognitive and literacy development before they begin formal schooling. Home literacy activities such as reading books, telling stories, and singing songs are some of the ways that parents help prepare their young children for more formal learning (Nord et al. 1999). A large body of research that emerged during the 1990s on the importance of parental home literacy activities and early childhood education has helped guide federal legislation, such as the No Child Left Behind Act, as well as similar state initiatives that support family literacy services as a way to prepare for and support children's success at school (Moss and Fawcett 1995; Nord et al. 1999; Snow, Burns, and Griffin 1998).

The majority of research on home literacy, cognitive development, and achievement has focused on pre-school- and older-aged children. In general, these studies have found an increase through the 1990s in the prevalence of home literacy activities by parents of young children. For example, the percentage of children ages 3 through 5 and not in kindergarten who were read to or told a story by a parent or family member three or more times per week increased from 71 percent in 1991 to 78 percent in 1993 and to 82 percent in 1999 (Wirt 1998; Nord et al. 1999). The prevalence of several other home literacy activities such as teaching letters, words, or numbers; teaching songs or music; and doing arts and crafts also increased from 1993 to 1999 for this age group (Nord et al. 1999). Research also has found that more than half of parents of kindergartners do home literacy activities with their children. In 1999, 53 percent of kindergartners visited a library with a family member in the past month and 80 percent of them were read to by a family member, 55 percent were told stories, and 71 percent were sung to three or more times a week (Reaney, Denton, and West 2002).

Research consistently demonstrates that parents and family members can play an important role in children's cognitive development and school performance by providing home literacy experiences (Davis-Kean 2005; Foster, Lambert, Abbott-Shim, McCarty, and Franze 2005; Moss and Fawcett 1995; Nord et al. 1999; Snow, Burns, and Griffin 1998). Early home literacy activities, such as parents reading books and telling stories to their children, are positively related to preschoolers' knowledge of the alphabet and their ability to read or pretend to read (Nord et al. 1999). A study of Head Start children found that early parental home literacy activities, such as reading and singing to children, were associated with higher preschool emergent literacy scores (Foster et al. 2005). Among children entering kindergarten, emergent reading skills were higher for children whose parents engaged them in home literacy activities such as shared reading, telling stories, and singing songs (Denton, West, and Walston, 2003). Children whose parents encouraged home literacy activities were also more likely to perform well in reading at the end of the kindergarten and first-grade years.

The research base on relationships between home literacy activities and children's development is smaller for children from birth to age 2 than it is for older children. Existing research on young children and home literacy activities emphasizes how formative these years are for children's development. Tomasello and Farrar (1986) found that the interaction between parent and child during shared reading activities positively correlated with children's vocabulary at 21 months. Whitehurst and Lonigan (1998) theorize

that emergent literacy begins well before a child begins to read or attend school. Their review of the research in this area suggests that children who are frequently engaged in home literacy activities such as shared book reading, shared writing in the home, print exposure, and library visits, show greater gains in early reading skills and had academic success beyond that of their peers who engage less frequently in home literacy activities.

Research on preschool- and school-aged children indicates that several characteristics of children's families and homes tend to be systematically associated both with the prevalence of home literacy activities and with school-related outcomes. Indicators of family social disadvantage include poverty, low maternal education, single-parent household, and non-English home language (Croninger and Lee 2001; Pallas, Natriello, and McDill 1989; Rathbun, West, and Walston 2005; Zill and West 2001). Several studies have found that among preschool children, family characteristics such as single-parenthood, household poverty, and low maternal education are associated with less frequent home literacy activities (Wirt 1998; Nord et al. 1999; Votruba-Drzal 2003). In terms of school outcomes, children with family risk factors enter kindergarten demonstrating fewer academic skills (Lee and Burkam 2002; Rathbun and West 2004) and make smaller gains in reading over the early elementary school years (Rathbun and West 2004; Rathbun, West, and Walston 2005). Differences in the prevalence of home literacy activities and in academic outcomes among racial/ethnic groups have also been noted (Lee and Burkam 2002; Nord et al. 1999; Rathbun and West 2004).

This paper builds on prior research by providing new information on very young children's exposure to home literacy activities and the relationship between such activities and children's mental skill development over their first 2 years of life. Specifically, this paper explores the following research questions:

1. How frequently are 9-month-olds and 2-year-olds exposed to different home literacy activities? Does the frequency of home literacy activities vary across children from different sociodemographic backgrounds?
2. Are home literacy activities that 9-month-olds and 2-year-olds experience associated with their mental skills development?

Data Source

Data for this paper come from the Early Childhood Longitudinal Study, Birth Cohort (ECLS-B). The study is sponsored by the National Center for Education Statistics (NCES), which is part of the U.S. Department of Education's Institute of Education Sciences. The ECLS-B follows a nationally representative sample of children born in 2001 through their entry into kindergarten. The study provides detailed information on children's development, health, and experiences in the home and other early environments during the years leading up to school. ECLS-B data are collected from the sample children, their parents, and their early care providers. The base-year sample includes almost 10,700 infants whose parents provided information at the 9-month data collection. Since the sampled children were born between January and December of 2001, baseline and 2-year data were collected on a rolling basis between the fall of 2001 and 2002 (for the 9-month collection) and between the fall of 2002 and 2003 (for the 2-year collection).

The weighted response rate for the 9-month data collection, based on the percentage of completed parent interviews out of the total number of eligible cases, was 74 percent. At 9 months, about 96 percent of the children had at least some assessment data. The weighted response rate for the 2-year data collection, based on the percentage of completed parent interviews out of the total number of children eligible to

participate at 2 years, was 93 percent (with at least some assessment data for 94 percent of the children) (Nord et al. 2006).

Results in this paper are based on the sample of approximately 8,900 children who participated in the child assessments at both the 9-month and 2-year data collection. When weighted appropriately, estimates from the sample are representative of almost 4 million children born in 2001. Table 1 provides a description of the characteristics of the analytic sample. Due to the complex sampling design of the ECLS-B, the child assessment sampling weight (W2C0) and corresponding replicate weights (W2C1 – W2C90) are used to produce all estimates in this paper. Comparisons in the text are tested for statistical significance to ensure that the differences are larger than might be expected due to sampling variation. Due to the large size of the ECLS-B sample, many group differences (regardless of substantive significance) are statistically significant. This paper defines “substantive differences” as differences of 5 percentage points or greater. All differences in the prevalence of home literacy activities that are noted in the text are both statistically significant at the .05 alpha level and differ by at least 5 percentage points.

Measures

When the sample children were approximately 9-months and 2-years old, ECLS-B staff conducted home interviews with the children’s parents and directly assessed children’s mental abilities. Below is a brief description of the key variables used in this paper from these information sources.

Parent Interviews. Parents were asked to provide information about their children and themselves on a range of topics, including family demographics, family structure, home educational activities, child care arrangements, child development and health, and parental education and employment status. The parent interviews were conducted primarily in English, but provisions were made to interview parents who spoke other languages. The key parent interview variables used in this paper include:

- Frequency of home literacy activities, collected both at 9 months and 2 years (response options: never, 1-2 times a week, 3-6 times a week, or daily):
 - Frequency that a family member reads books to the child
 - Frequency that a family member tells stories to the child
 - Frequency that a family member sings songs with the child
- Indicator of whether a parent or someone in the child’s family visited a library with the child in the past month, collected at 2 years (response options: yes or no)
- Number of children’s books in the home, collected at 2 years (response options (collapsed): less than 20, 20 to 100, more than 100)
- Child characteristics:
 - Sex (response options: male or female)
 - Race/ethnicity (response options (collapsed): White, non-Hispanic; Black, non-Hispanic; Hispanic; Asian, non-Hispanic; Other, non-Hispanic)¹
 - Age at time of assessments, in months
 - Prematurity status (response options (collapsed): born more than 3 weeks early, born less than 3 weeks early)

¹ For ease of discussion, throughout the remainder of the paper, “White, non-Hispanic” will be referred to as “White,” “Black, non-Hispanic” will be referred to as “Black,” “Asian, non-Hispanic” will be referred to as “Asian,” and “Other, non-Hispanic” will be referred to as “Other.”

- Birth weight (response options (collapsed): normal birth weight, low or very-low birth weight)
- Family characteristics (from 9-month data collection):
 - Poverty status (response options: living below the federal poverty threshold, living at or above the poverty threshold). The ECLS-B family poverty status variables are based on Census poverty thresholds, which are derived from information about total household income and household size. For example, a household of four with a household income of \$18,104 was considered to be below 100 percent of the poverty threshold based on 2001 Census data.
 - Mother’s educational attainment (response options (collapsed): mother did not complete high school (i.e., did not receive a high school diploma or GED), mother completed high school)
 - Family type (response options (collapsed): two-parent household, single-parent or no parents in the household)²
 - Primary home language (response options: English, not English)

Direct Child Assessments. At the 9-month and 2-year home visits, ECLS-B staff administered the Bayley Short Form–Research Edition (BSF-R) Assessment directly to the children. The BSF-R is an untimed measure that uses a variety of activities to assess children’s mental skills. It was administered in English or another language if the family’s primary home language was not English.³ The BSF-R mental scale measures aspects of children’s cognitive development, such as early communication skills, memory, expressive vocabulary, receptive vocabulary, listening comprehension, and early problem-solving skills. At 9 months, children were presented with activities such as putting blocks in a cup, ringing a bell, and responding to a parent’s request (e.g., peek-a-boo) (Nord et al. 2006). At 2 years, children were presented with activities such as naming pictures, verbal comprehension, discriminating objects and pictures, comparing sizes, and matching colors.

The 9-month BSF-R scores were recalibrated with the 2-year BSF-R scores to obtain a consistent scale metric over both ages. As a result, the scores can be used to examine children’s gains in mental skills over time. Scores on the 9-month BSF-R assessment of mental skills ranged from 32 to 131 points, with a mean score of 77 and a standard deviation of 9.8. The 2-year BSF-R mental skills scores ranged from 92 to 174 points, with a mean score of 127 and a standard deviation of 10.7 (Nord et al. 2006). Between the 9-month and 2-year data collections, children’s gains in mental skills on the BSF-R ranged from 2 to 110 points, with a mean gain of 50 and a standard deviation of 12.9.

Analytic Method

This paper begins by presenting descriptive statistics on the frequency of different home literacy activities in relation to children’s age and several sociodemographic characteristics (i.e., child’s sex and race/ethnicity, maternal education, poverty status, family type, and primary home language). Next, results from two ordinary least squares (OLS) regressions are presented, focusing on the relationship between home literacy activities and children’s scores on the BSF-R mental assessment at 9 months and 2 years. The child and family characteristics listed earlier in this paper (e.g., child’s race/ethnicity, prematurity status, poverty status) are included as statistical controls in the regression models so that relationships between home literacy activities and children’s mental skill development can be explored after holding constant the potential influence of other factors. The second regression on the 2-year BSF-R mental skills

² For ease of discussion, “single parent or no parents in the household,” which may include households with no biological, adoptive, or step parents, will be referred to as “single-parent or other-composition households” throughout the remainder of the paper.

³ A Spanish version of the ECLS-B assessment material was also developed. In cases where the family spoke a language other than English or Spanish, the ECLS-B interviewer used an interpreter.

scores also controls for children's 9-month BSF-R mental scale scores. For the regression analyses, effect size (ES) estimates in standard deviation units (SD) of the outcome measure (i.e., mental skills score at 9 months and 2 years) are presented in addition to the unstandardized regression coefficients to provide a measure of the magnitude of differences in mental skill scores associated with home literacy opportunities.

Findings on Relationships between Child/Family Characteristics and Home Literacy Activities

Bivariate analyses of data collected when children were approximately 9 months old and later at 2 years old indicate that the frequency of home literacy activities varies with regard to children's race/ethnicity, mother's educational attainment, family composition, poverty status, and primary home language (tables 2 through 6). The data indicate differences across groups for the frequencies that parents read to children, told them stories, sang them songs, and visited the library with them. Variation in the number of books children had in the home was also measured across child and family characteristics.

Reading Books to Children

Overall, 54 percent of 9-month-olds and 72 percent of 2-year-olds were read to at least 3 times a week. Thirty-four percent of 9-month-olds and 25 percent of 2-year-olds had a family member read to them one to two times a week. Twelve percent of 9-month-olds and 3 percent of 2-year-olds were not read to at all during a typical week (table 2). Across characteristics of children and families, the following differences were found:

- At both 9 months and 2 years, White children were more likely than Black, Hispanic, or Asian children to have family members read books to them at least 3 times a week. Whereas no significant difference between Asian children and Black children was observed at 9 months, at 2 years, Asian children were more likely than Black children to have family members read books to them at least 3 times a week.
- At both 9 months and 2 years, children whose mothers did not complete high school were less likely to have family members read books to them at least 3 times a week than children whose mothers had at least a high school diploma/GED (figure 1). Nine-month-olds whose mothers did not complete high school were also less likely to have family members read books to them at all during the week than children whose mothers had at least a high school diploma/GED.
- At both 9 months and 2 years, children in two-parent households were more likely to have family members read books to them at least 3 times a week than those in single-parent or other-composition households.
- At both 9 months and 2 years, children living in poverty were less likely to have family members read books to them at least 3 times a week than children who were not in poverty, and were less likely to have family members read to them at all during the week.
- At both 9 months and 2 years, children whose primary home language was English were more likely to have family members read books to them at least 3 times a week than children whose primary language was not English and were more likely to have family members read to them at all during the week.

Telling Stories to Children

Overall, 45 percent of 9-month-olds and 53 percent of 2-year-olds were told stories at least 3 times a week. Thirty-three percent of 9-month-olds and 34 percent of 2-year-olds had a family member tell stories to them once or twice a week. Twenty-three percent of 9-month-olds and 14 percent of 2-year-olds were not told stories at all during a typical week (table 3). Many differences were measured across child and family characteristics:

- At both 9 months and 2 years, White children were more likely than Black and Hispanic children to be told stories at least 3 times a week. At 9 months only, White children were also more likely than Asian children to have stories told to them at least 3 times a week. At 2 years, Asian children were more likely than Black or Hispanic children to be told stories at least 3 times a week, and Hispanic children were also more likely than Black children to be told stories at least 3 times a week.
- At both 9 months and 2 years, children whose mothers did not complete high school were less likely to be told stories at least 3 times a week than children whose mothers had at least a high school diploma/GED.
- At both 9 months and 2 years, children from two-parent households were more likely to be told a story at least 3 times a week than children from single-parent or other-composition households.
- At both 9 months and 2 years, children living in poverty were less likely to be told a story at least 3 times a week than children not living in poverty.
- At both 9 months and 2 years, children in homes where English was the primary language were more likely to be told stories at least 3 times a week than infants from homes where the primary language was not English.

Singing Songs with Children

Overall, 88 percent of infants and 87 percent of 2-year-olds had a family member sing songs with them three or more times a week. Ten percent of infants and 11 percent of 2-year-olds were sung to once or twice a week. Two percent of both infants and 2-year-olds were not sung to at all during a typical week (table 4). Differences were measured in prevalence of singing songs with children across child and family characteristics:

- At 9 months, White children were more likely than Black, Hispanic, or Asian children to have family members sing songs with them at least 3 times a week. At 2 years, White children were more likely than Hispanic or Asian children to have family members sing songs with them at least 3 times a week.
- At both 9 months and 2 years, children whose mothers did not complete high school were less likely to be sung to at least 3 times a week than infants whose mothers had at least a high school diploma/GED.
- At both 9 months and 2 years, children living in poverty were less likely to have a family member sing songs with them at least 3 times a week than children who were not living in poverty.
- At both 9 months and 2 years, children in homes where English was the primary language were more likely to have family members sing with them at least 3 times a week than children in homes where English was not the primary language.

- No substantive differences were measured among children by sex or family composition in prevalence of being sung songs.

Visiting the Library with Children

Information on children’s library visits was collected when the children were 2 years old. Overall, about 31 percent of 2-year-olds visited the local library with a family member in a typical month (table 5). As with the other activities considered in this report, children’s opportunities to visit the library at 2 years of age differed by characteristics of their families and households:

- White and Asian children were more likely than Black and Hispanic children to have visited a local library in the past month. No substantive differences were observed between White and Asian children or between Black and Hispanic children in prevalence of local library visits.
- Children whose mothers had at least a high school diploma/GED were more likely to have visited the library in the past month than children whose mothers did not complete high school.
- Children in two-parent households were more likely to visit the library than children in single-parent or other-composition households.
- Children not living in poverty were more likely to have visited the library in the past month than children living in poverty (figure 2).
- Children whose primary home language was English were more likely to visit the library than children whose primary home language was not English.

Number of Children’s Books in the Home

Parents reported the number of children’s books in the home when their children were 2 years old. On average, 2-year-olds had about 49 children’s books in their homes (table 6). Twenty-nine percent had less than 20 children’s books, 63 percent had between 20 and 100 books, and 8 percent had more than 100 books. The mean number of children’s books in the home when children were 2 years of age differed across characteristics of children’s families and households:

- White children had an average of 67 children’s books in their homes, more than the mean number for Black children (24 books), Hispanic children (26 books), or Asian children (30 books). Asian children also had more books, on average, than Black and Hispanic children (figure 3).
- Children whose mothers had at least a high school diploma/GED had about twice as many children’s books in their homes as children whose mothers did not complete high school.
- Children in two-parent households had more children’s books than children in single-parent and other-composition households.
- Children not living in poverty had about twice as many children’s books as children living in poverty.
- Children from homes where English was the primary language had about three times as many children’s books in their homes as children whose primary home language was not English.

Findings on Relationships between Home Literacy Activities and Mental Skills Development

Given that children's exposure to home literacy activities over the first 2 years of life varied across families with different characteristics, relationships between home activities and early mental skills development were examined using regression analysis to control for other child and family characteristics that may be related to children's cognitive development. This section presents findings of the regression analyses separately for the 9-month and 2-year mental skills score regression analyses.

Nine-Month Findings

Children's mental skills scores at 9 months of age were related to the frequency that family members read books to them and sang songs with them (table 7, column 2; figure 4).

- Infants whose parents reported reading to them at least 3 times a week tended to have higher mental skills scores at 9 months than those whose parents did not read to them at all during a typical week (Effect size (ES) = .07 to .10 standard deviations (SD)). In addition, infants who were read books daily had higher mental skills scores, on average, than infants who were read books once or twice a week (ES = .05 SD).
- Infants whose parents reported singing songs to them at least 3 times a week tended to have higher mental skills scores at 9 months than those whose parents did not sing songs to them at all (ES = .11 to .12 SD).

Two-Year Findings

Children's mental skills scores at 2 years of age were related to the frequency that family members read books, told stories, and sang songs with them (table 7, column 3; figure 5).

- Children whose parents reported during the 2-year data collection that a family member read books to the child every day tended to have higher mental skills scores than those whose family members read books to them less often or not at all during a typical week (ES = .23 to .36 SD).
- Two-year-olds whose family members told them stories at least 3 times a week had higher mental skills scores than those whose family members did not tell them stories at all (ES = .15 to .18 SD) or those whose parents told them stories once or twice a week (ES = .09 to .12 SD).
- Two-year-olds whose family members sang songs with them every day had higher mental skills scores than those whose family members sang with them once or twice a week or did not sing with them at all during the week (ES = .09 to .20 SD).

In the two-year data collection, parents also reported whether a family member had visited the library with the child in the past month and indicated the number of children's books in the home.

- Children who had visited the library in the past month with a family member had higher mental skills scores at 2 years than those who had not visited the library (ES = .10 SD).
- Children in homes with 20 or more children's books had higher mental skills scores at 2 years than those with less than 20 books in the home (ES = .22 to .32 SD).

Results from the regression analyses also provide information on sociodemographic differences in children's mental skills at 9 months and 2 years of age. At 9 months, children's mental skills differed by their sex, age at assessment, prematurity status, birth weight status and their family's poverty status. At 2 years, children's mental skills differed by those same characteristics as well as the children's race/ethnicity, their mother's high school completion status, the number of parents in the household, and their primary home language. Although sociodemographic differences in mental skills scores are not the focus of this paper, regression coefficients for these characteristics are included in table 7.

Conclusion/Educational Importance

This paper builds on the few earlier studies of infant cognitive development and its relationship to home literacy activities. Information from this study provides a picture of home literacy experiences over the first few years of life for different subpopulations and provides evidence on the potential benefits of early home literacy activities for young children's mental development. Results indicate that two home literacy activities, reading books and singing songs with infants, are positively related to children's mental development at 9 months of age. At age 2, several home literacy activities are positively related to a child's mental development. In addition to children listening to family members read them books and sing them songs, those whose family members tell them stories, take them to the library, and provide at least 20 children's books in the home tend to have higher mental skills scores at 2 years of age.

Although most families provide their 9-month-olds and 2-year-olds with a variety of literacy activities at least once a week, the frequency of exposure to these activities is not consistent for all children. For instance, Black, Hispanic, and Asian children do not have family members read to them or sing songs with them as often in the first 2 years of life as do White children. They also tend to have fewer children's books in their homes at 2 years of age than do White children. In terms of potential family risk factors, young children living in poverty, living in single-parent households, those whose mothers have not completed high school, and those with a non-English primary home language have less frequent exposure to home literacy activities such as reading books, telling stories, singing songs, and visiting the library with family members, and they have fewer children's books available in their homes.

Despite the strengths of the ECLS-B data for addressing research on the frequency of home literacy activities and the relationship of home activities and early mental development, efforts to generalize from this study are hindered by limitations that are common to survey research. Information on children's home literacy experiences and their individual and family characteristics are based on parental reports. To the degree that parents misreport information either because they do not remember accurately or for other reasons, estimates of the frequency of home literacy activities may be inaccurate. For example, some parents may be inclined to overestimate the frequency that they engage in home activities because they are aware that these are desirable parenting behaviors. In addition, parent interview items on home literacy activities focus on the frequency, rather than the quality, of such experiences. Furthermore, direct measures of children's mental skills currently are limited to data collected at about 9 months and at about 2 years.

Nevertheless, findings from this paper provide important information for families and early childhood educators and policymakers on the potential benefits of home literacy activities that all families can participate in with their infants and toddlers. Future data collections in the ECLS-B, when children enter preschool and kindergarten, and complementary research using data from the Early Childhood Longitudinal Study, Kindergarten Class of 1998-99 (ECLS-K) on elementary school children's home learning experiences, can help to extend the initial findings from this paper by examining trends in home literacy activities and mental development from birth through middle school.

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Table 1. Percentage distribution of children born in 2001, by selected child and family characteristics at about 9 months of child's age: 2001

Characteristics	Percent
Child's sex	
Male	51
Female	49
Child's race/ethnicity	
White, non-Hispanic	54
Black, non-Hispanic	14
Hispanic	25
Asian, non-Hispanic	3
Other, non-Hispanic	5
Child's birth weight status	
Normal birth weight	93
Low or very low birth weight	7
Child's prematurity status	
Born 3 or more weeks premature	12
Born within 3 weeks of due date	88
Family characteristics at 9 months of child's age	
Mother's educational attainment	
Mother did not complete high school	27
Mother completed high school	73
Family composition	
Two-parent household	80
Single-parent household/other	20
Household poverty status	
Living below the federal poverty threshold	23
Living at or above the federal poverty threshold	77
Primary home language	
English	81
Non-English	19

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), Longitudinal 9-month--2-year Restricted-Use Data File.

Table 2. Percentage distribution of the frequency that young children's family members read books to them on a weekly basis, by age and selected child and family characteristics: 2001 and 2003

Characteristics	9 months			2 years		
	Not at all	1-2 times a week	3 or more times a week	Not at all	1-2 times a week	3 or more times a week
Overall	12	34	54	3	25	72
Child's sex						
Male	13	34	53	4	26	70
Female	12	33	55	3	24	73
Child's race/ethnicity						
White, non-Hispanic	8	26	66	1	14	85
Black, non-Hispanic	14	45	41	5	42	54
Hispanic	20	42	37	7	40	54
Asian, non-Hispanic	19	36	45	6	27	67
Other, non-Hispanic	10	33	58	2	23	75
Family characteristics at 9 months of child's age						
Mother's educational attainment						
Mother did not complete high school	21	41	38	6	40	54
Mother completed high school	9	31	60	2	20	78
Family composition						
Two-parent household	12	32	57	3	23	74
Single-parent household/other	15	41	44	5	33	61
Household poverty status						
Living below the federal poverty threshold	17	42	41	7	38	54
Living at or above the federal poverty threshold	11	31	58	2	21	77
Primary home language						
English	9	32	59	2	21	77
Non-English	27	40	33	8	43	49

NOTE: Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), Longitudinal 9-month--2-year Restricted-Use Data File.

Table 2a. Standard errors of the percentage distribution of the frequency that young children's family members read books to them on a weekly basis, by age and selected child and family characteristics: 2001 and 2003

Characteristics	9 months			2 years		
	Not at all	1-2 times a week	3 or more times a week	Not at all	1-2 times a week	3 or more times a week
Overall	0.5	0.6	0.8	0.3	0.8	0.8
Child's sex						
Male	0.6	1.0	1.1	0.4	1.0	1.1
Female	0.8	1.0	1.2	0.4	1.0	1.0
Child's race/ethnicity						
White, non-Hispanic	0.6	1.0	1.0	0.2	1.2	1.3
Black, non-Hispanic	1.1	1.5	1.4	0.8	1.5	1.8
Hispanic	1.3	1.5	1.8	0.8	1.5	1.3
Asian, non-Hispanic	1.5	2.6	2.8	1.2	1.7	2.0
Other, non-Hispanic	1.9	2.6	3.1	0.9	2.4	2.3
Family characteristics at 9 months of child's age						
Mother's educational attainment						
Mother did not complete high school	1.1	1.4	1.4	0.7	1.6	1.7
Mother completed high school	0.9	0.8	0.9	0.3	0.7	0.8
Family composition						
Two-parent household	0.6	0.7	0.9	0.3	0.8	0.8
Single-parent household/other	1.1	1.2	1.5	0.8	1.4	1.7
Household poverty status						
Living below the federal poverty threshold	1.1	1.4	1.8	0.9	1.6	1.7
Living at or above the federal poverty threshold	0.6	0.8	0.9	0.2	0.8	0.9
Primary home language						
English	0.5	0.7	0.8	0.2	0.9	1.0
Non-English	1.4	1.7	1.6	0.9	1.6	1.4

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), Longitudinal 9-month--2-year Restricted-Use Data File.

Table 3. Percentage distribution of the frequency that young children's family members tell stories to them on a weekly basis, by age and selected child and family characteristics: 2001 and 2003

Characteristics	9 months			2 years		
	Not at all	1-2 times a week	3 or more times a week	Not at all	1-2 times a week	3 or more times a week
Overall	23	33	45	14	34	53
Child's sex						
Male	23	32	45	15	35	51
Female	22	33	45	12	33	54
Child's race/ethnicity						
White, non-Hispanic	21	29	51	11	32	57
Black, non-Hispanic	22	39	39	18	41	41
Hispanic	27	36	37	16	35	49
Asian, non-Hispanic	29	31	39	13	31	56
Other, non-Hispanic	18	36	46	19	26	55
Family characteristics at 9 months of child's age						
Mother's educational attainment						
Mother did not complete high school	25	38	36	17	36	47
Mother completed high school	22	30	48	12	33	55
Family composition						
Two-parent household	22	32	46	13	33	54
Single-parent household/other	24	35	41	16	36	48
Household poverty status						
Living below the federal poverty threshold	24	37	39	17	35	48
Living at or above the federal poverty threshold	22	31	47	13	33	54
Primary home language						
English	21	32	48	13	33	53
Non-English	32	35	33	16	36	48

NOTE: Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), Longitudinal 9-month--2-year Restricted-Use Data File.

Table 3a. Standard errors of the percentage distribution of the frequency that young children's family members tell stories to them on a weekly basis, by age and selected child and family characteristics: 2001 and 2003

Characteristics	9 months			2 years		
	Not at all	1-2 times a week	3 or more times a week	Not at all	1-2 times a week	3 or more times a week
Overall	0.7	0.6	0.8	0.6	0.7	0.8
Child's sex						
Male	0.9	1.0	1.1	0.9	0.9	1.0
Female	1.0	0.8	1.0	0.8	1.2	1.1
Child's race/ethnicity						
White, non-Hispanic	1.0	0.9	1.0	0.7	1.0	1.2
Black, non-Hispanic	1.4	1.5	1.5	1.7	2.1	1.8
Hispanic	1.2	1.3	1.3	1.3	1.5	1.4
Asian, non-Hispanic	1.6	1.7	1.9	1.6	2.4	2.2
Other, non-Hispanic	2.0	3.0	3.1	2.3	2.1	2.4
Family characteristics at 9 months of child's age						
Mother's educational attainment						
Mother did not complete high school	1.3	1.3	1.4	1.3	1.4	1.4
Mother completed high school	0.8	0.7	0.9	0.7	0.8	1.0
Family composition						
Two-parent household	0.8	0.7	0.8	0.6	0.8	0.9
Single-parent household/other	1.5	1.7	1.8	1.4	1.5	1.8
Household poverty status						
Living below the federal poverty threshold	1.3	1.4	1.6	1.3	1.4	1.7
Living at or above the federal poverty threshold	0.8	0.7	0.9	0.6	0.8	0.8
Primary home language						
English	0.8	0.7	0.8	0.7	0.8	1.0
Non-English	1.6	1.9	1.8	1.2	1.5	1.6

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), Longitudinal 9-month--2-year Restricted-Use Data File.

Table 4. Percentage distribution of the frequency that young children's family members sing songs to them on a weekly basis, by age and selected child and family characteristics: 2001 and 2003

Characteristics	9 months			2 years		
	Not at all	1-2 times a week	3 or more times a week	Not at all	1-2 times a week	3 or more times a week
Overall	2	10	88	2	11	87
Child's sex						
Male	2	10	88	3	12	85
Female	2	9	89	1	10	89
Child's race/ethnicity						
White, non-Hispanic	2	8	91	1	9	90
Black, non-Hispanic	3	12	85	3	12	86
Hispanic	3	12	85	3	15	82
Asian, non-Hispanic	4	10	86	4	14	82
Other, non-Hispanic	3	5	93	1	10	89
Family characteristics at 9 months of child's age						
Mother's educational attainment						
Mother did not complete high school	4	15	81	4	16	80
Mother completed high school	2	8	91	1	9	90
Family composition						
Two-parent household	2	9	89	2	11	87
Single-parent household/other	3	11	86	3	12	86
Household poverty status						
Living below the federal poverty threshold	4	15	82	4	15	82
Living at or above the federal poverty threshold	2	8	90	1	10	89
Primary home language						
English	2	8	90	1	10	89
Non-English	4	15	81	4	17	79

NOTE: Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), Longitudinal 9-month--2-year Restricted-Use Data File.

Table 4a. Standard errors of the percentage distribution of the frequency that young children's family members sing songs to them on a weekly basis, by age and selected child and family characteristics: 2001 and 2003

Characteristics	9 months			2 years		
	Not at all	1-2 times a week	3 or more times a week	Not at all	1-2 times a week	3 or more times a week
Overall	0.2	0.5	0.6	0.2	0.7	0.8
Child's sex						
Male	0.3	0.7	0.7	0.3	0.9	0.9
Female	0.3	0.6	0.7	0.2	0.8	0.8
Child's race/ethnicity						
White, non-Hispanic	0.3	0.7	0.7	0.2	1.2	1.2
Black, non-Hispanic	0.5	1.1	1.1	0.5	1.2	1.4
Hispanic	0.5	1.1	1.2	0.5	1.1	1.2
Asian, non-Hispanic	0.8	0.9	1.1	1.0	1.2	1.6
Other, non-Hispanic	1.0	0.8	1.3	0.4	1.4	1.5
Family characteristics at 9 months of child's age						
Mother's educational attainment						
Mother did not complete high school	0.6	1.3	1.4	0.5	1.6	1.6
Mother completed high school	0.2	0.5	0.5	0.2	0.7	0.7
Family composition						
Two-parent household	0.2	0.6	0.6	0.2	0.8	0.8
Single-parent household/other	0.6	1.0	1.1	0.6	1.1	1.2
Household poverty status						
Living below the federal poverty threshold	0.6	1.2	1.4	0.6	1.4	1.5
Living at or above the federal poverty threshold	0.2	0.5	0.6	0.2	0.7	0.7
Primary home language						
English	0.2	0.5	0.6	0.2	0.9	0.9
Non-English	0.6	1.3	1.4	0.6	1.3	1.3

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), Longitudinal 9-month--2-year Restricted-Use Data File.

Table 5. Percentage of 2-year-olds who visited a library with a family member in the past month, by selected child and family characteristics: 2003

Characteristics	Percent
Overall	31
Child's sex	
Male	28
Female	33
Child's race/ethnicity	
White, non-Hispanic	34
Black, non-Hispanic	28
Hispanic	24
Asian, non-Hispanic	37
Other, non-Hispanic	31
Family characteristics at 9 months of child's age	
Mother's educational attainment	
Mother did not complete high school	22
Mother completed high school	34
Family composition	
Two-parent household	32
Single-parent household/other	24
Household poverty status	
Living below the federal poverty threshold	22
Living at or above the federal poverty threshold	33
Primary home language	
English	32
Non-English	24

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), Longitudinal 9-month--2-year Restricted-Use Data File.

Table 5a. Standard errors of the percentage of 2-year-olds who visited a library with a family member in the past month, by selected child and family characteristics: 2003

Characteristics	Percent
Overall	0.8
Child's sex	
Male	0.9
Female	1.2
Child's race/ethnicity	
White, non-Hispanic	1.2
Black, non-Hispanic	1.7
Hispanic	1.3
Asian, non-Hispanic	2.1
Other, non-Hispanic	3.0
Family characteristics at 9 months of child's age	
Mother's educational attainment	
Mother did not complete high school	1.2
Mother completed high school	0.9
Family composition	
Two-parent household	0.9
Single-parent household/other	1.3
Household poverty status	
Living below the federal poverty threshold	1.3
Living at or above the federal poverty threshold	1.0
Primary home language	
English	0.9
Non-English	1.3

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), Longitudinal 9-month--2-year Restricted-Use Data File.

Table 6. Mean and percentage distribution of the number of children's books in 2-year-olds' homes, by selected child and family characteristics: 2003

Characteristics	Mean number of books	Percent of 2-year-olds with...		
		Less than 20 books	20 to 100 books	More than 100 books
Overall	49	29	63	8
Child's sex				
Male	48	31	62	8
Female	50	28	64	8
Child's race/ethnicity				
White, non-Hispanic	67	11	78	12
Black, non-Hispanic	24	53	46	1
Hispanic	26	57	41	2
Asian, non-Hispanic	30	44	54	2
Other, non-Hispanic	48	22	72	7
Family characteristics at 9 months of child's age				
Mother's educational attainment				
Mother did not complete high school	28	53	45	2
Mother completed high school	57	21	70	9
Family composition				
Two-parent household	53	26	66	9
Single-parent household/other	31	45	52	3
Household poverty status				
Living below the federal poverty threshold	27	54	43	3
Living at or above the federal poverty threshold	55	22	69	9
Primary home language				
English	56	21	70	9
Non-English	19	68	31	1

NOTE: Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), Longitudinal 9-month--2-year Restricted-Use Data File.

Table 6a. Standard errors of the mean and percentage distribution of the number of children's books in 2-year-olds' homes, by selected child and family characteristics: 2003

Characteristics	Mean number of books	Percent of 2-year-olds with...		
		Less than 20 books	20 to 100 books	More than 100 books
Overall	0.8	0.8	0.8	0.4
Child's sex				
Male	1.0	0.9	1.0	0.5
Female	1.1	1.0	1.1	0.6
Child's race/ethnicity				
White, non-Hispanic	1.3	0.9	1.0	0.7
Black, non-Hispanic	1.0	1.8	1.8	0.3
Hispanic	1.1	1.9	1.8	0.5
Asian, non-Hispanic	1.4	2.1	2.2	0.5
Other, non-Hispanic	2.4	1.9	2.1	1.4
Family characteristics at 9 months of child's age				
Mother's educational attainment				
Mother did not complete high school	1.0	1.4	1.3	0.4
Mother completed high school	1.0	0.7	0.8	0.5
Family composition				
Two-parent household	1.0	0.9	0.9	0.5
Single-parent household/other	1.2	1.5	1.6	0.6
Household poverty status				
Living below the federal poverty threshold	1.2	1.6	1.6	0.6
Living at or above the federal poverty threshold	1.0	0.8	0.9	0.5
Primary home language				
English	1.0	0.8	0.8	0.5
Non-English	1.0	1.8	1.7	0.4

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), Longitudinal 9-month--2-year Restricted-Use Data File.

Table 7. Regression of young children's mental skills scores on selected home literacy activities and child and family characteristics: 2001 and 2003

Characteristics	Regression coefficients (unstandardized)	
	9-month mental skills score	2-year mental skills score
Intercept	32.97 *	70.58 *
Home literacy activities ¹		
Parent reads books to the child		
Once or twice a week	0.46	1.49
Three to six times a week	0.73 *	1.34
Daily	0.95 *	3.82 *
Parent tells stories to child		
Once or twice a week	0.25	0.65
Three to six times a week	0.20	1.88 *
Daily	0.35	1.56 *
Parent sings songs with child		
Once or twice a week	0.65	1.19
Three to six times a week	1.19 *	1.75
Daily	1.10 *	2.15 *
Parent and child visited library in past month	†	1.03 *
Number of children's books in the home ²		
20 to 100 books	†	2.38 *
More than 100 books	†	3.37 *
Child characteristics		
Male	-0.66 *	-3.21 *
Race/ethnicity ³		
Black, non-Hispanic	0.06	-2.00 *
Hispanic	0.01	-1.77 *
Asian, non-Hispanic	-0.39	0.14
Other, non-Hispanic	-0.21	-2.06 *
Age at assessment (in months)	4.09 *	1.70 *
Nine-month mental skills score	†	0.14 *
Child was born premature	-2.48 *	-1.22 *
Child was low or very low birth weight	-4.84 *	-3.66 *
Family characteristics at 9 months of child's age		
Living below the federal poverty threshold	-0.49 *	-0.80 *
Mother did not complete high school	-0.06	-1.13 *
Two-parent household	0.28	0.68 *
Primary home language is not English	-0.11	-2.67 *

* p < .05.

† Not applicable

¹The reference group for home literacy activities is "Not at all".

²The reference group for number of children's books in the home is "Less than 20".

³The reference group for race/ethnicity is White, non-Hispanic.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), Longitudinal 9-month -- 2-year Restricted-Use Data File.

Table 7a. Standard errors of the regression of young children's mental skills scores on selected home literacy activities and child and family characteristics: 2001 and 2003

Characteristics	Regression coefficients (unstandardized)	
	9-month mental skills score	2-year mental skills score
Intercept	1.003	3.835
Home literacy activities ¹		
Parent reads books to the child		
Once or twice a week	0.236	0.236
Three to six times a week	0.277	0.277
Daily	0.257	0.257
Parent tells stories to child		
Once or twice a week	0.184	0.447
Three to six times a week	0.258	0.518
Daily	0.282	0.481
Parent sings songs with child		
Once or twice a week	0.542	1.100
Three to six times a week	0.552	1.107
Daily	0.502	1.056
Parent and child visited library in past month	†	0.284
Number of children's books in the home ²		
20 to 100 books	†	0.320
More than 100 books	†	0.633
Child characteristics		
Male	0.151	0.297
Race/ethnicity ³		
Black, non-Hispanic	0.299	0.445
Hispanic	0.337	0.448
Asian, non-Hispanic	0.404	0.485
Other, non-Hispanic	0.325	0.469
Age at assessment (in months)	0.068	0.146
Nine-month mental skills score	†	0.016
Child was born premature	0.314	0.400
Child was low or very low birth weight	0.256	0.310
Family characteristics at 9 months of child's age		
Living below the federal poverty threshold	0.202	0.347
Mother did not complete high school	0.215	0.376
Two-parent household	0.202	0.318
Primary home language is not English	0.239	0.447

† Not applicable

¹The reference group for home literacy activities is "Not at all".

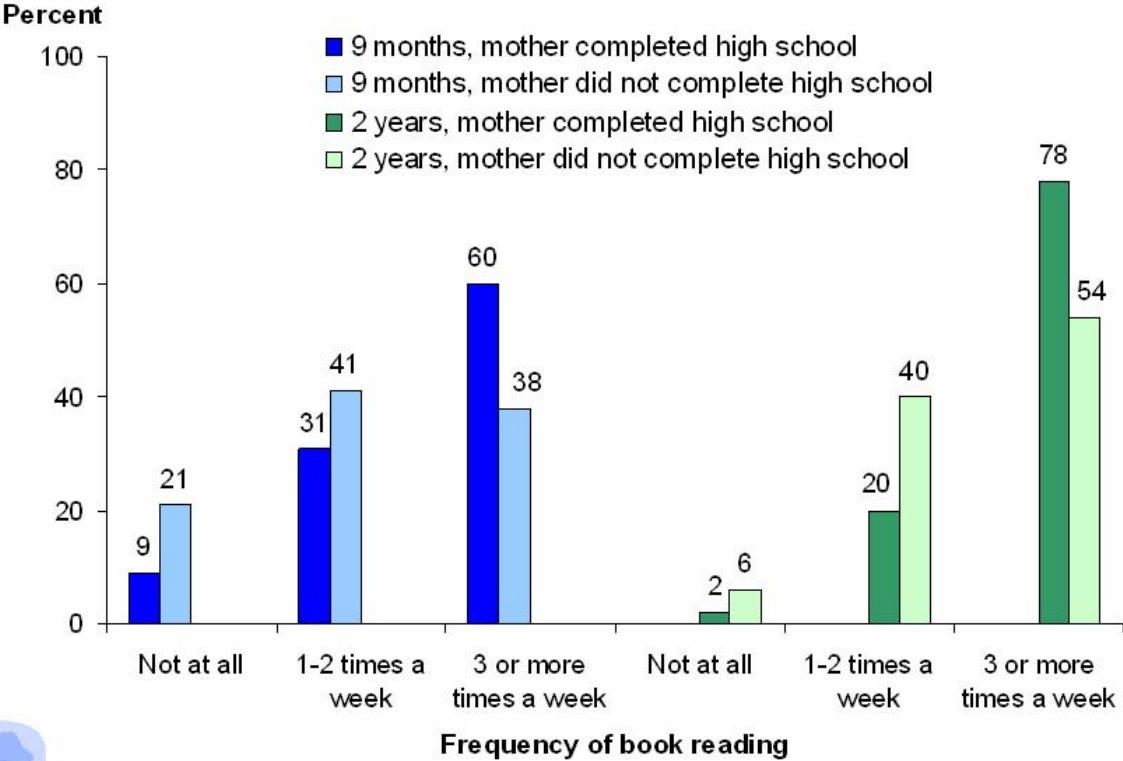
²The reference group for number of children's books in the home is "Less than 20".

³The reference group for race/ethnicity is White, non-Hispanic.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Birth Cohort (ECLS-B), Longitudinal 9-month--2-year Restricted-Use Data File

Figure 1

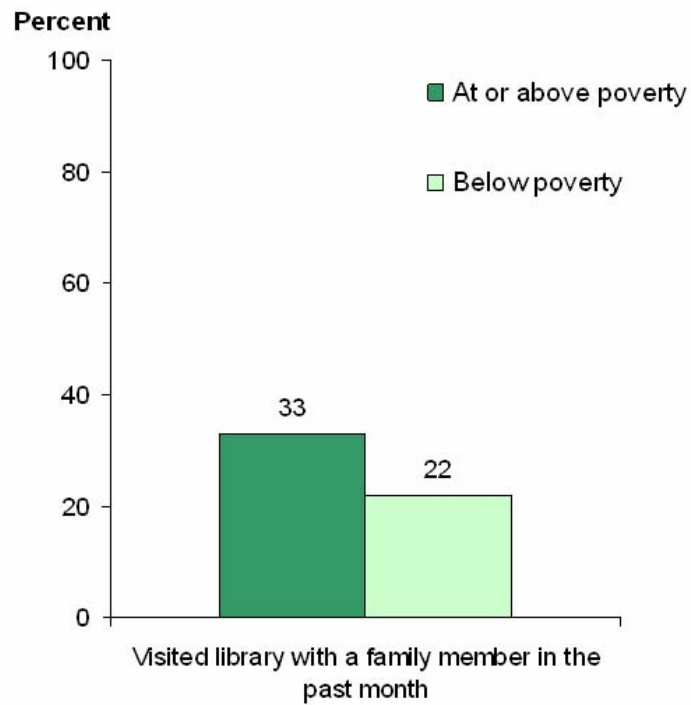
Percentage distribution of the frequency that young children’s family members read books to them on a weekly basis, by mother’s education: 2001 and 2003



SOURCE: ECLS-B 9-month – 2-year Restricted-Use Data File.

Figure 2

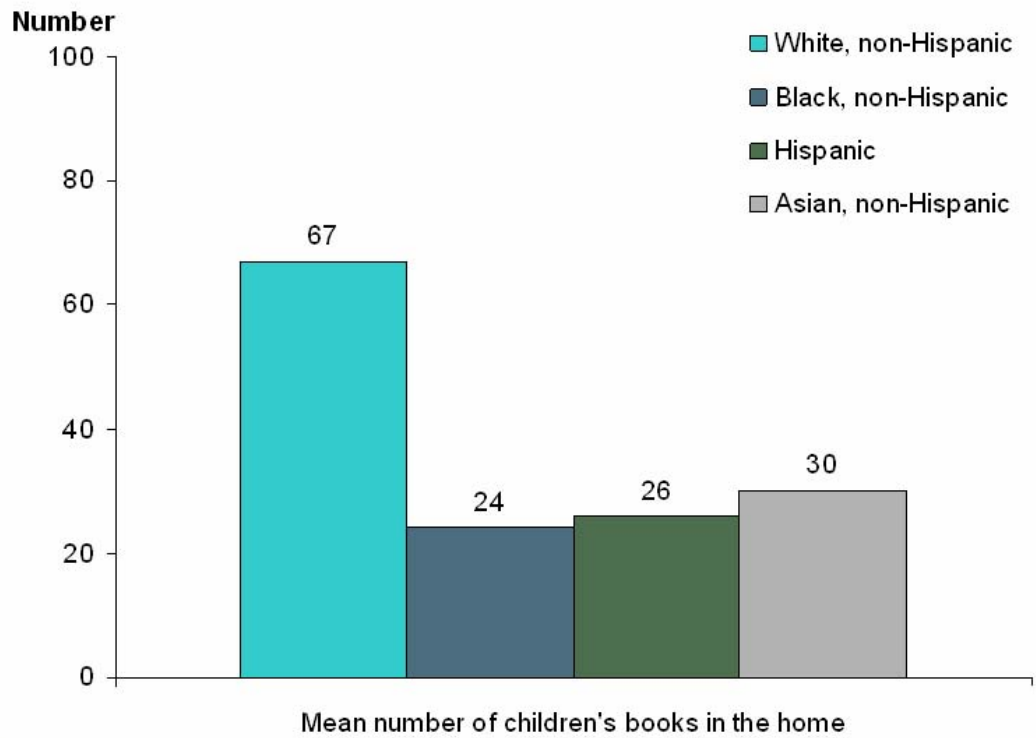
Percentage of 2-year-olds who visited a library with a family member in the past month, by poverty status: 2003



SOURCE: ECLS-B 2-year Restricted-Use Data File.

Figure 3

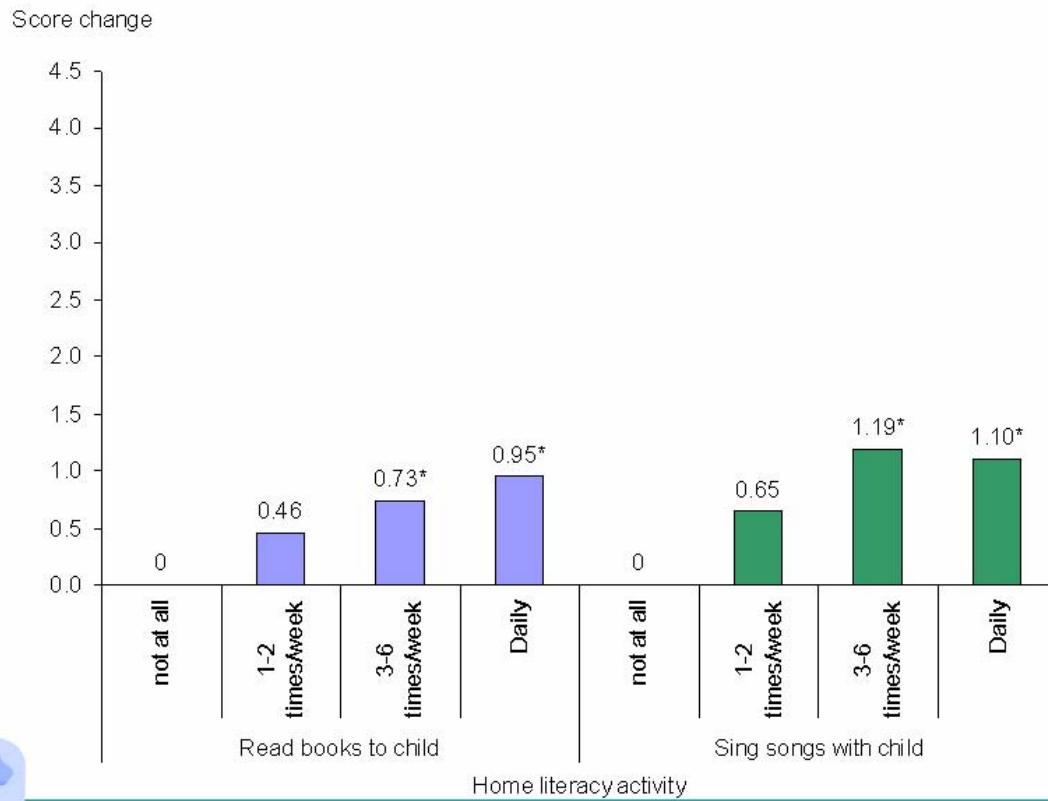
Mean number of children's books in 2-year-olds' homes, by child's race/ethnicity: 2003



SOURCE: ECLS-B 2-year Restricted-Use Data File.

Figure 4

Adjusted increase in 9-month-olds' mental skills scores, by frequency of home literacy activities: 2001

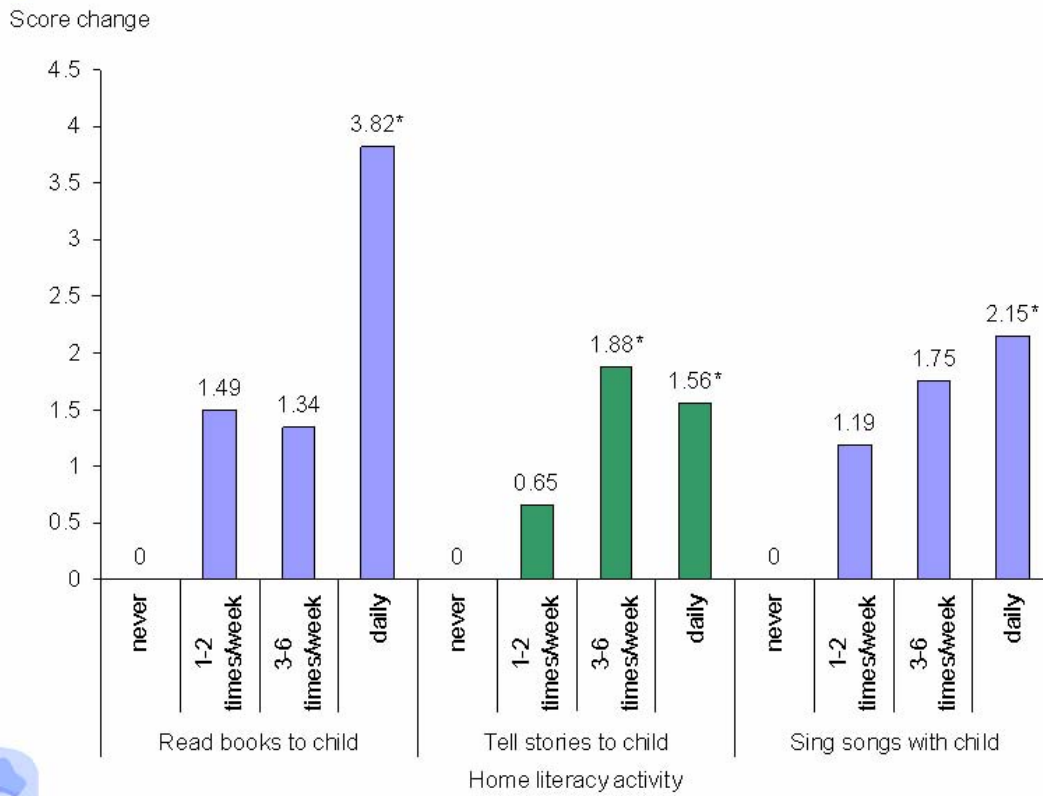


* p < .05

SOURCE: ECLS-B 9-month – 2-year Restricted-Use Data File.

Figure 5

Adjusted increase in 2-year-olds' mental skills scores, by frequency of home literacy activities: 2003



* p < .05

SOURCE: ECLS-B 9-month – 2-year Restricted-Use Data File.