

# *ACF-OPRE Report* A Year in Head Start: Children, Families and Programs

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# ***ACF-OPRE Report:*** **A Year in Head Start:** **Children, Families and Programs**

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## INTRODUCTION

Head Start is a national program that aims to promote school readiness by enhancing the social and cognitive development of children through the provision of educational, health, nutritional, social, and other services to enrolled children and families. The Head Start program provides grants to local public and private non-profit and for-profit agencies to provide comprehensive child development services to economically disadvantaged children and families; the Office of Head Start emphasizes a special focus on helping preschoolers develop the reading and mathematics skills they need to be successful in school. The program also seeks to engage parents in their children's learning and to promote their progress toward their own educational, literacy, and employment goals (Administration for Children and Families [ACF] 2009).

The Head Start Family and Child Experiences Survey (FACES) was first launched in 1997 as a periodic longitudinal study of program performance. Successive nationally representative samples of Head Start children, their families, classrooms, and programs provide descriptive information on the population served; staff qualifications, credentials, beliefs and opinions; classroom practices and quality measures; and child and family outcomes. FACES includes a battery of direct child assessments across multiple domains. It also comprises interviews with the child's parents, teachers and program managers, as well as direct observations of classroom quality. (For background information on FACES 2006, see West et al. 2007, Tarullo et al. 2008 and West et al. 2008.)

FACES is a tool for measuring Head Start program performance at the national level. This recurring data collection provides the means to assess how the program is performing currently and over time. Figure 1 offers the conceptual framework for the FACES study. The child is located at the center, surrounded by parents and family, and located within the context of a given Head Start classroom and program. The model

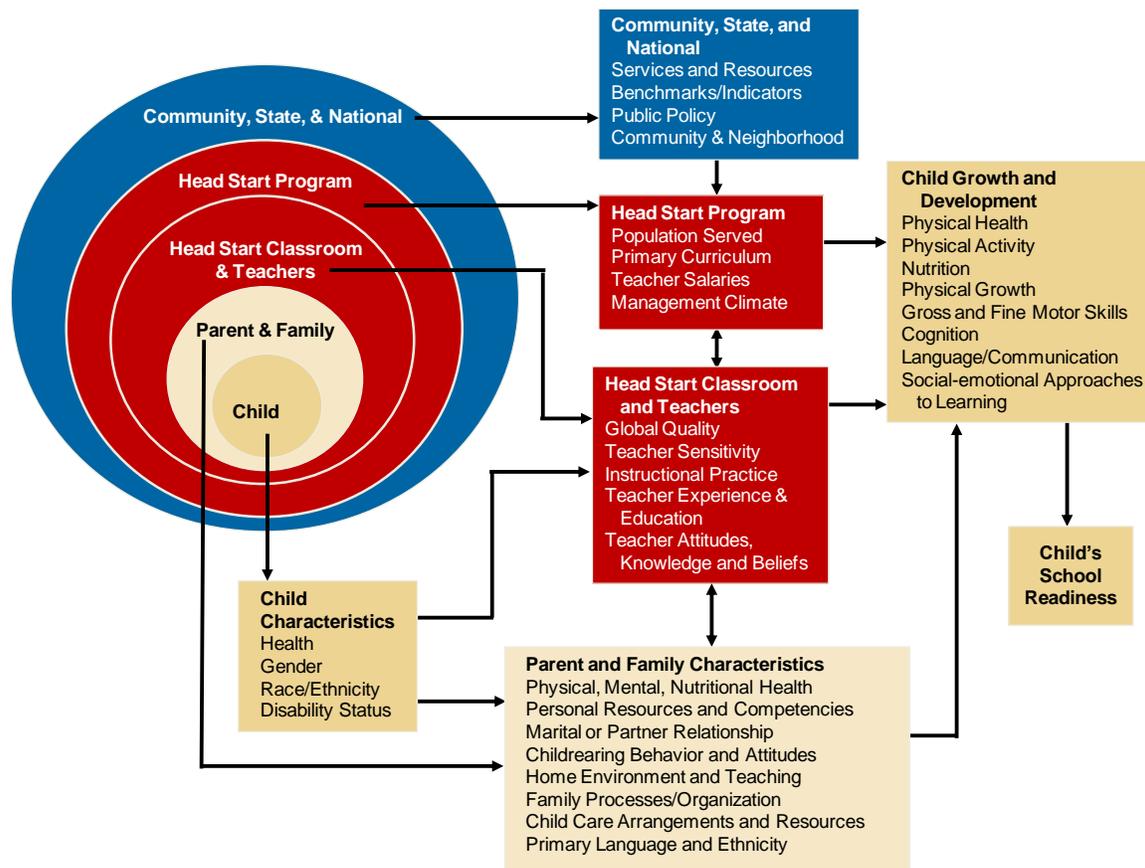
posits that it is through the provision of high quality, comprehensive educational services (in interaction with their home and classroom contexts) that children make progress towards the goal of physical wellbeing and cognitive and social-emotional school readiness.

This brief profiles the 3- and 4-year-old Head Start children and families who were newly enrolled in the program in fall 2006 (see Tarullo et al. 2008) and are still attending in spring 2007. The first section of the report provides background on the study methodology and sample. The next offers information on the children's characteristics, family demographics, and home life, including language background, educational environment of the home, family routines, and socioeconomic risk status. It includes information on parent involvement in Head Start and level of satisfaction with their own and their children's Head Start experiences. The following section chronicles children's developmental progress over the Head Start year, considering whether these outcomes vary by age, gender, race/ethnicity, or risk status. Changes in children's skills and development during the program year reflect a range of influences, including maturation, program and family influences, and other influences in children's lives. Presented next are the characteristics of their teachers and classrooms, including measures of observed quality. Finally, the last section examines the relationships among child, family, and classroom factors and children's outcomes.

## METHODS

The FACES 2006 sample provides information at the national level about Head Start programs, centers, classrooms, and the children and families they serve. A sample of Head Start programs was selected from the 2004-2005 Head Start Program Information Report (PIR),<sup>1</sup> and approximately two centers per program and three classrooms per center were selected for participation. Within each classroom, an average of nine newly enrolled 3- and 4-year-old children were randomly selected for the study.<sup>2</sup> Sixty

**Figure 1. Conceptual Framework**



programs, 135 centers, 410 classrooms, 365 teachers and 3, 315 children participated in the study in the fall of 2006. Children in the study were administered a battery of direct child assessments, their parents and teachers were interviewed, and interviews were conducted with the directors of the programs and centers in the sample and with education coordinators.

In spring 2007, data were collected again from the group of children who were completing their first year of the Head Start program.<sup>3</sup> Data were collected over a four-month period in spring 2007 (March – June). Mathematica data collection teams assessed the children at their Head Start centers, interviewed the children's lead teachers, observed their classrooms, and interviewed children's parents during week-long site visits.<sup>4</sup> Teachers were asked to complete a set of ratings for each sampled child in their

classroom using either a Web-based or a paper instrument.<sup>5</sup>

A total of 3,296 children were eligible for the spring 2007 follow up<sup>6</sup> and 88 percent of the eligible children participated.<sup>7</sup> Child assessments were completed for 98 percent of these children and 92 percent of their parents were interviewed. A Head Start teacher completed a set of teacher ratings for 96 percent of the children. An interview was completed with 99 percent of children's lead teachers.<sup>8</sup> In spring 2007, Mathematica staff also completed observations in 335 Head Start classrooms.<sup>9</sup> Data from the direct child assessments are used here to report on children's cognitive and physical outcomes at the beginning and end of their first year in Head Start. Parent and teacher ratings provide information about children's social skills, approaches to learning, problem

behaviors and academic and non-academic accomplishments during the Head Start year. Assessor ratings are another source of information about children's social-emotional outcomes. We use parent interview data to describe children's backgrounds and home environments; teacher interview data to describe children's first Head Start classroom experiences; and classroom observation data to describe Head Start classroom quality.

**Direct child assessments.** The spring battery of direct child assessments, like the fall battery, included a set of standardized preschool assessments designed to measure children's cognitive outcomes (language, literacy, and mathematics) and physical outcomes (height and weight) through an untimed, one-on-one assessment of each child. The actual measures used are described below, where we report on children's cognitive scores at the end of the Head Start year and changes in scores over children's first year in the program.

Except for a few differences, the procedures used to administer the direct child assessments were the same as those used in the fall. The direct assessment began with a language screening to determine whether children from households where English was not the primary spoken language should be assessed in English, assessed in Spanish, or not assessed at all.<sup>10</sup> However, if a child had been assessed in English in the fall, he or she was assessed in English in the spring. The assessments themselves used the same standard materials that were used in the fall (for example, stimulus and response pages from the PPVT-4 and Woodcock-Johnson measures). Computer-assisted personal interviewing (CAPI) was used again when administering the assessments to facilitate the movement from one measure to the next without the assessor's having to calculate stopping or starting points (that is, basals and ceilings). Assessors read the questions and instructions from a computer screen. The child responded by pointing to the correct answers on the assessment easel or by giving a verbal response. Assessors entered the child's responses into a laptop computer using software

that ensured that all basal and ceiling rules were followed.

**Parent interviews.** FACES 2006 used a computer-assisted interview to collect information from Head Start parents in a variety of areas, including the characteristics of households (such as household income, number of adult household members, languages spoken in the home) and household members (including age, race/ethnicity, and relationship to study child).<sup>11</sup> Information was also collected on aspects of the child's home life, children's child-care arrangements, and parents' ratings of their children's social skills, problem behaviors, and language, literacy, and mathematics accomplishments. New to the spring interview were questions that asked parents about (1) their involvement and satisfaction with Head Start, (2) access to and use of community services and sources of social support, (3) outdoor spaces near their home where their child could play, and (4) household members' use of alcohol, tobacco, and drugs.

**Teacher interviews and teacher child reports.** In spring 2007, FACES 2006 again conducted computer-assisted personal interviews with lead teachers about their educational backgrounds, professional experience, and credentials. Teachers reported on the learning activities that are scheduled in their classrooms. They were asked to estimate the amount of time they spend on both teacher-directed activities and child-selected activities in a typical day, as well as frequency of various language and literacy development and mathematics activities. Teachers were asked whether they have a principal curriculum guiding the classroom activities and, if so, whether they received training in how to use it. They were also asked how they assess the children's level of achievement and progress over the Head Start year. In the spring interview, teachers were asked about the management climate: the policies and procedures in their Head Start program. They were also asked about the strengths and weaknesses of the main curriculum, whether they have a regular mentor, their experiences with their mentor, and their

involvement in training or technical assistance during this program year.

As in the fall, using a Teacher Child Report form, teachers were asked to rate each FACES child in their classroom on a set of items that assess the child's accomplishments, cooperative classroom behavior, behavior problems, and approaches to learning. Teachers also provided reports of children's health, developmental conditions, and absences during the program year.

**Interviewer ratings.** At the end of the one-on-one testing sessions with children in the fall and spring, the assessor completed a set of rating scales evaluating the child's behavior in the assessment situation, including the child's approaches to learning and any problem behaviors. Four subscales from the Leiter-R Examiner Rating Scales were used in FACES 2006: (1) attention, (2) organization/impulse control, (3) activity level, and (4) sociability. The 27 items and four subscales make up the cognitive/social scale.

**Classroom observations.** In FACES 2006, measures of the classroom environment were obtained from a four-hour observation in the spring. The observation protocols included the Early Childhood Environment Rating Scale-Revised (ECERS-R; Harms, Clifford, and Cryer 1998), the Instructional Support domain from the Classroom Assessment Scoring System (CLASS; Pianta et al. 2008), and the Arnett Caregiver Interaction Scale (Arnett 1989). Classroom observations also provided information on child-adult ratios and group sizes. Observer ratings are used to produce a set of scores that capture global characteristics of Head Start classrooms as well as indicators of classroom resources and teacher-child interactions. More information on the three measures is found in the section on classroom quality.

Twenty-four observers were trained to rate key characteristics of children's classrooms using the ECERS-R, CLASS Instructional Support, and Arnett. Observers participated in an 8-day

training that included lectures and discussion, classroom practice and videotaped certification, practice in early childhood classrooms, and field certification.

**Population estimates.** The statistics found in this report are estimates of key characteristics of the population of newly entering Head Start children who were still enrolled in the program in spring 2007 and their parents and families, as well as the population of their Head Start teachers and classrooms.<sup>12</sup> The data used to report on child and family characteristics and child outcomes are weighted to represent all children entering Head Start for the first time in fall 2006 who were still enrolled in spring 2007.<sup>13</sup> Teacher data are weighted to represent all teachers serving children who entered Head Start for the first time in fall 2006 and who were still enrolled in their classrooms in spring 2007. Classroom observation data are weighted to represent all classrooms in spring 2007 that were serving children who entered Head Start for the first time in fall 2006.

## **CHILD AND FAMILY DEMOGRAPHICS, PARENTING, AND THE HOME ENVIRONMENT**

Head Start serves a diverse population of low-income children and their families. Because families play such an important role in a child's development, Head Start has made the family a cornerstone in its framework. Data from the FACES 2006 Parent Interview offer information on the family and household environment of entering Head Start children and the neighborhoods and communities where they live. This section presents key findings on household demographic characteristics, the home learning environment and parenting practices, family health care and health status, and neighborhood characteristics for the population of children who entered Head Start in fall 2006 and are still enrolled in the program in spring 2007. Changes in parenting practices and children's activities are described, along with parents' perceptions of their and their children's Head Start experiences.

## Characteristics of Children

In fall 2006, approximately 458,000 children were newly enrolled in Head Start programs across the U.S. About 88 percent of these children were still enrolled in spring 2007 and completing their first year of Head Start. The demographic characteristics of the group of children still enrolled in spring look very much like those of the group of children who entered the program in the fall.<sup>14</sup>

About 63 percent of children completing a year of Head Start were 3 years old when they first entered the program in the fall, and the others were 4 years old or older. Boys slightly outnumber girls, a pattern that is more pronounced among 4-year-olds (53 percent versus 47 percent, respectively). Just over a third of children are Hispanic/Latino and another third are African American. Three-year-olds are more likely to be African American than 4-year-olds, while 4-year-olds are more likely to be White or Hispanic/Latino than are 3-year-olds.

## Family Environment

Children entering Head Start for the first time in fall 2006 had diverse family lives (Tarullo et al. 2008). While most lived with a parent, a little more than half lived apart from their fathers. Although a majority of their mothers and more than half of their fathers had at least a high school education, many parents had not completed high school.<sup>15</sup> More than half of children's mothers and a much higher percentage of their fathers were employed with many working full-time. A large majority (89 percent) lived in households where the income was less than or equal to 185 percent of the federal poverty threshold.<sup>16</sup> A little more than a quarter—27 percent—lived in households where English was not the primary language spoken to them. For most of this group of children, Spanish was the home language. Many entering children lived in households with multiple risks (low parent education, single-parent, and income below the federal poverty threshold). The remainder of this section focuses on children who entered Head Start in fall 2006 and are still enrolled in the program in spring 2007.

**Household composition.** Overall, the family structure of children completing a year of Head Start looks the same as the group of children who entered the program in the fall. Most children completing a year of Head Start live with at least one of their parents<sup>17</sup> (96 percent) and 46 percent live with both parents. Thirty-one percent of children live with two married parents. Very few children live apart from their mother (6 percent) but half do not live with their father (52 percent).

**Parent education, employment, and income.** Sixty-three percent of children's mothers and 55 percent of their fathers have at least a high school education. Thus, roughly a third of Head Start children's mothers and 45 percent of their fathers did not complete high school or earn a GED.

More than half of the mothers whose children are finishing a year of Head Start are employed (53 percent), with about a third working full-time (35 or more hours per week) and another 21 percent working part-time. A majority of children's fathers are employed (86 percent) and most work full-time hours (72 percent). More than three quarters of children live in households with at least one employed parent, and 59 percent have at least one parent who works full-time.

The median household income for children completing a year of Head Start was \$19,191, based on parent report in fall 2006. Slightly less than 9 in 10 children live in households where the income is less than or equal to 185 percent of the federal poverty threshold. About 57 percent live in households where income is less than or equal to 100 percent of the federal poverty threshold. White children are less likely to live in households with incomes at or below the poverty threshold than African American or Hispanic/Latino children.

Many Head Start children live in households that receive federal assistance. The most common type of assistance is from the U.S. Department of Agriculture's Women, Infants, and Children (WIC) program. In spring 2007, 55 percent of

children's families received WIC compared to about 61 percent in fall 2006. The percentage of children's families that received food stamps in the spring was also down slightly from the fall (48 percent and 51 percent, respectively). The percentage of children whose families received welfare assistance was relatively stable from fall to spring (21 percent and 19 percent, respectively). In spring 2007, 3-year-olds are more likely to live in households that receive WIC than are 4-year-olds, and the decline in WIC participation is smaller for families of 3-year-olds compared to 4-year-olds.

**Home language and immigrant status.** About 28 percent of children completing a year of Head Start live in households where English is not the primary language spoken to them.<sup>18</sup> Spanish is by far the most prevalent non-English primary language and is spoken to children in 23 percent of households. Of children who are spoken to in a non-English language, 83 percent have Spanish as the home language.

Overall, most Head Start children were born in the U.S. (98 percent), and a majority of their mothers (71 percent) and fathers (70 percent) also were born in the U.S. This is also true among children who live in households where a language other than English is spoken to them most often; 92 percent of those children were born in the U.S. However, for this group of children, a small percentage of their mothers (11 percent) and fathers (9 percent) were born in the United States. Most often, these children's mothers (67 percent) and fathers (68 percent) were born in Mexico, followed by Central America, South America, Asia, and Africa. Over 70 percent of these mothers and fathers had been in the U.S. for at least 6 years.

Figure 2 shows the immigrant status of Head Start parents. Twenty-six percent of all children completing a year of Head Start had two parents who were born outside of the U.S. Among the group of children who live in households where a non-English language is spoken to them, 84

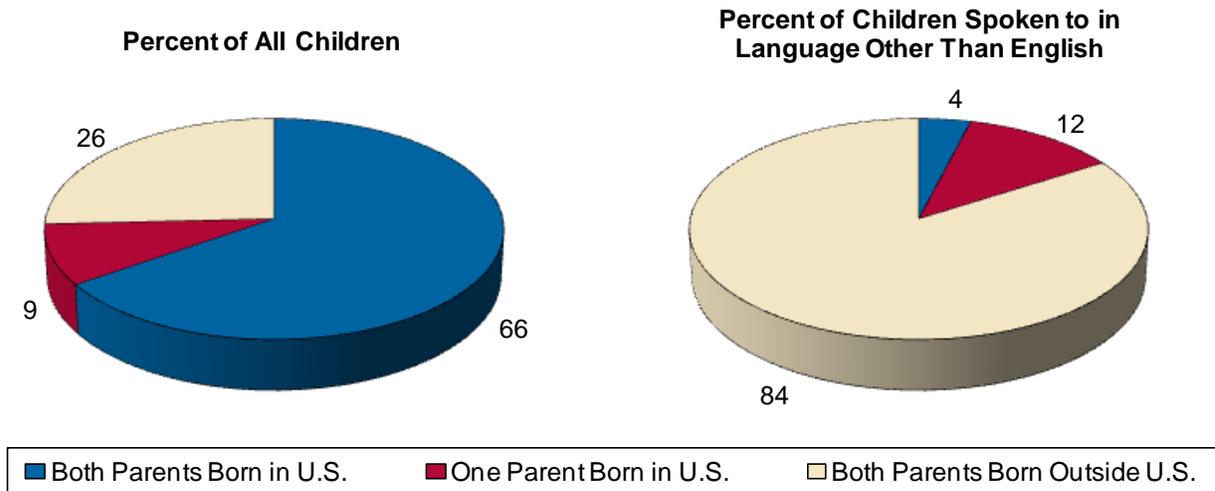
percent have two parents who were born outside of the U.S.

**Cumulative socioeconomic risk.** Coming from a low-income family or single-parent household and having parents who did not complete high school are identified as risk factors for poor developmental and educational outcomes.<sup>19</sup> Children with one of these risk factors are more likely to have others, and research has shown that having more than one risk factor can have negative consequences for children's development and school readiness skills.<sup>20</sup> In FACES 2006, an index was created as a measure of cumulative family risk. The number of risks is based on three characteristics of children's living circumstances: whether the child resides in a single-parent household, whether the household income is below the federal poverty threshold, and whether the child's mother has less than a high school diploma. About 17 percent of children completing a year of Head Start had none of the three risks and 12 percent had all three. Most had either one (36 percent) or two (35 percent) of the risks. African American and Hispanic/Latino children were more likely to have two or more risks than White children, a pattern that is also found among the general population of children entering school for the first time (Zill and West 2001).

### **Parenting Approaches and Attitudes**

**Child-rearing practices.** Parenting practices and parents' attitudes toward child-rearing can affect their relationships and interactions with their children. Earlier cohorts of FACES found that parenting styles were correlated with child behavior, and that family engagement in activities together (for example, telling stories or playing games) was correlated with child cognitive skills (ACF 2003). In spring 2007, the parents of FACES children were asked a series of questions that were designed to capture information about parenting practices, including parenting style, disciplinary approaches, and routines.<sup>21</sup>

**Figure 2. Immigrant Status of Head Start Parents**



Source: FACES Fall 2006 Parent Interview

Parents were asked to indicate to what extent each of 13 items from The Child-Rearing Practices Report (Block 1965) describes them. From these, four subscales were created in earlier rounds of FACES:

- The Parental Warmth scale reflects a warm, supportive parenting style in which the parent encourages curiosity. Items contributing to this scale include “My child and I have warm intimate moments together” and “I make sure my child knows that I appreciate what (he/she) tries to accomplish.”
- The Parental Energy scale indicates the parent’s energy and consistency in enforcing rules. This scale includes statements such as “I have little or no difficulty sticking with my rules for my child” and “Once I decide how to deal with a misbehavior of my child, I follow through.”
- The Authoritative scale reflects a less harsh parenting style with greater use of rationales for discipline. Statements in this scale include “I control my child by warning (him/her) about the bad things that can happen” and “I teach my child that misbehavior or breaking the rules will always be punished.”

- The Authoritarian scale indicates a stricter, more directive, parenting style. This scale includes items such as “I do not allow my child to get angry with me” and “I believe that a child should be seen and not heard.”

Possible scores on each subscale range from 1, indicating the statements included in the scale are “not at all” like the parent, to 5, indicating that the statements describe the parent “exactly.” On average, parents scored higher on the parental warmth scale (4.3) and lower on the authoritarian scale (2.2). Scores on the parental energy (3.9) and authoritative (3.4) scales fell between these extremes. Parents in households with multiple socioeconomic risk factors scored lower on the warmth subscale than did parents with fewer risk factors, and parents in households with no socioeconomic risk factors scored lower on the authoritative subscale. Scores also varied by race/ethnicity with African American children’s parents scoring higher on both the authoritative and authoritarian subscales, compared to other parents, while White children’s parents had higher warmth scores and lower authoritarian scores, on average compared to both African American and Hispanic/Latino parents. Hispanic/Latino children’s parents had lower scores on the

energy subscale than did children's parents in other ethnic groups.

**Discipline.** FACES also asked about specific disciplinary practices and routines in the home. The percentage of children whose parents had spanked them in the week prior to the interview decreased significantly, from 37 percent to 32 percent between fall 2006 and spring 2007. Almost twice as many parents (68 percent in spring 2007) had used "time out," but the percentage using that discipline approach did not change significantly between fall and spring.

**Household routines.** Parents' interactions with their children at home, including the rules and routines that parents establish for their children, set the stage for socialization at school. Studies have found time spent eating meals together as a family to be associated with fewer behavior problems (Hofferth and Sandberg 2001) and that dinner table conversation supports literacy development (Beals and Snow 2006). The percentage of Head Start children whose families eat dinner together every day decreased significantly, from 55 percent to 46 percent between fall and spring. The percentage of children with a regular bedtime (85 percent in spring 2007) did not change between fall and spring.

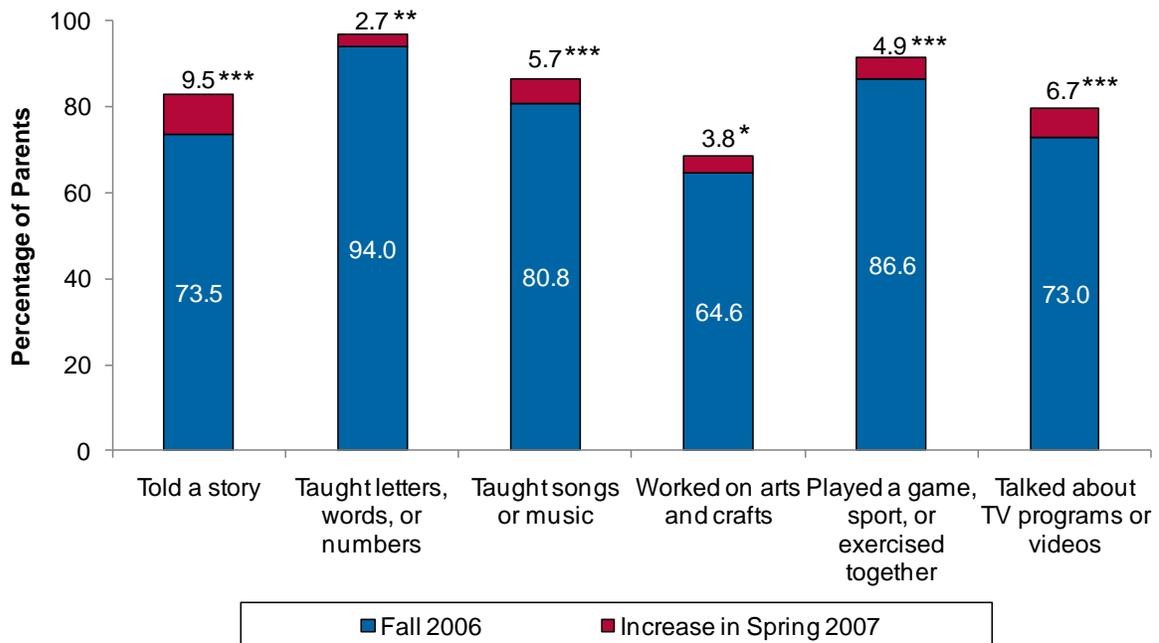
**Home learning activities.** Head Start children participate in a variety of learning activities with their families, both in and outside of the home. One common activity is being read to by a parent or family member. The percentage of children who are read to three or more times a week (about three-quarters of Head Start children overall) did not change significantly between fall and spring. This level of reading did increase for some subgroups however. The percentage of Hispanic/Latino children read to three or more times a week increased significantly, from 65 percent in the fall to 71 percent in the spring, and the percentage of children who live in primarily non-English households who are read to three or more times a week rose from 61 to 70 percent.

For most other home learning activities, the percentages of children who had engaged in the activity with a family member increased between fall 2006 and spring 2007. As shown in Figure 3, the largest increases were in the percentages who were told a story, talked about TV programs with family members, were taught songs, or played games, sports, or exercised. The only activities whose prevalence did not increase significantly were the three reported by the highest percentages of parents in both fall and spring: playing with toys or games indoors (98 percent), taking child along on errands (96 percent), and talking about what happened in Head Start (96 percent) (not shown).

The percentages of children who had engaged in activities with their family members outside the home also increased between the fall and spring for most types of activities. As shown in Figure 4, the largest increases were in the percentages of children who talked about family history or ethnic heritage; went to a movie, library, or community event; visited a museum; or attended a play or concert with family members.

**Physical activity and nutrition.** Parental encouragement of physical activity and good nutritional choices at home can contribute to children's developing healthy habits and help combat childhood obesity. FACES measured physical activity through questions about frequency of outdoor play. The percentage of children who spend more than two hours playing outside on a typical weekday increased significantly, from 28 percent in the fall to 38 percent in the spring. This change was accompanied by a decrease in the percentage spending no time playing outside (from 20 percent to 9 percent) between fall and spring. Of course, it is possible that these changes may reflect seasonal variation in the weather between the fall and spring surveys. The increase in the percentage of children spending more than two hours playing outside was particularly notable for 4-year-olds (27 percent in the fall to 40 percent in the spring), while the decrease in the percentage spending no time

**Figure 3. Family Members' Activities with Child in Past Week**



Source: FACES Fall 2006 and Spring 2007 Parent Interview

Note: All fall-spring differences shown are statistically significant

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

outside was largest among 3-year-olds (22 percent in the fall and 10 percent in the spring).

In spring 2007, 94 percent of parents reported that their Head Start child had access to a yard, and two-thirds reported that there is a park or playground within walking distance.<sup>22</sup>

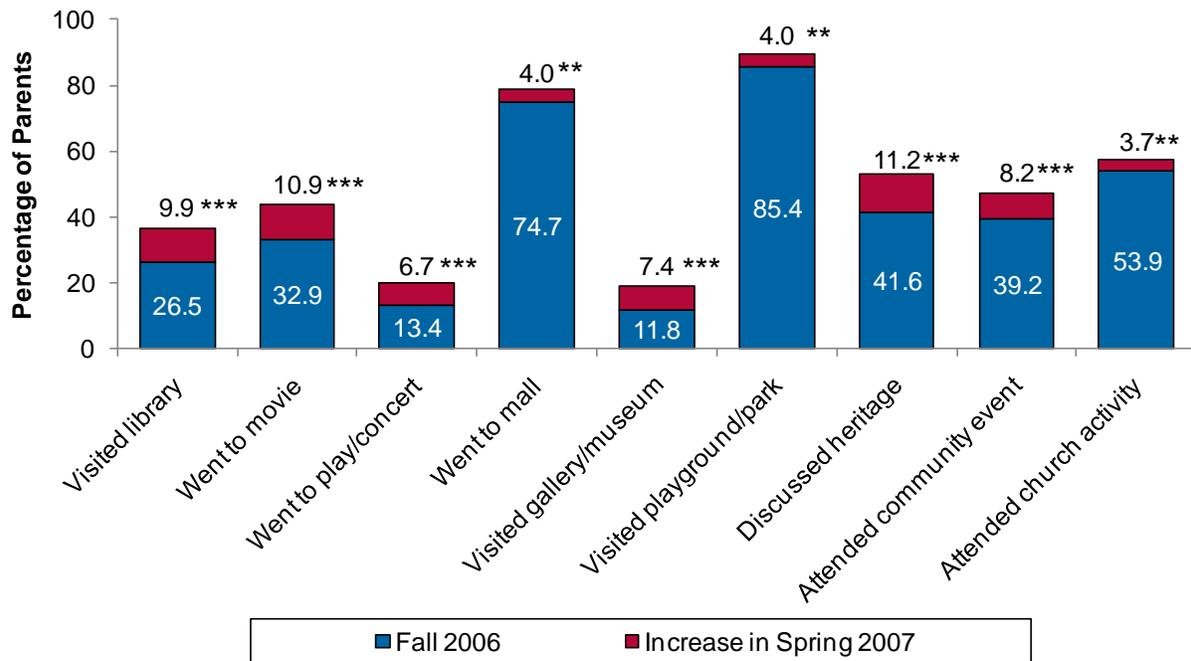
The American Academy of Pediatrics' guidelines recommend that children should watch no more than two hours of television a day (American Academy of Pediatrics 2001). The percentage of 4-year-olds exceeding this guideline on a typical weekday decreased from 20 percent in fall 2006 to 15 percent in spring 2007. The percentage of 3-year-olds watching more than two hours of television remained at 21 percent at both time periods, however.

Many children also spend time using computers. The percentage of children who have access to a computer at home increased from 54 percent to 59 percent between fall and spring. Among

those with computer access, the percentage who played computer games on a typical weekday increased from 47 percent to 57 percent between fall and spring, and the percentage using a computer for a purpose other than games increased from 20 percent to 28 percent.

In addition to physical activity, FACES also asked parents to report on food their child consumed over the past week, concentrating on types of foods that are particularly salient for young children, such as milk, soda, salty snacks, sweets, and fast food. Analyses compared their reports to thresholds of consumption that indicate more healthy nutritional choices. Consumption of milk decreased and consumption of fast food increased between fall and spring. The percentage of children who drank milk at least twice a day decreased from 72 percent to 66 percent between fall and spring. The decrease was larger for 4-year-olds than for 3-year-olds. The percentage of 4-year-

**Figure 4. Family Members' Activities with Child in Past Month**



Source: FACES Fall 2006 and Spring 2007 Parent Interview

Note: All fall-spring differences shown are statistically significant

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

olds who ate no fast food in the prior week decreased from 25 percent in the fall to 21 percent in the spring; the change was not significant for 3-year-olds.

**Child health care.** The inclusion of health and wellness services in Heads Start's comprehensive mission reflects the recognition that health care practices influence a child's development. The percentage of children who had had a dental checkup within the past year increased from 89 percent in the fall to 94 percent in the spring. The percentage of children who had had a medical checkup during the same period did not change significantly but remains high (98 percent in spring 2007).

Although the percentage of children with any type of health insurance coverage did not change significantly between fall 2006 and spring 2007, the types of coverage did. Most

notably, the percentage of children covered by SCHIP increased from 9 percent to 24 percent between fall and spring. The percentage of children covered by Medicaid decreased somewhat, from 71 percent to 67 percent.

Although SCHIP coverage increased across all racial/ethnic groups, the decrease in Medicaid coverage was concentrated among White and African American children.

**Parent health behaviors and mental health.**

Family health behaviors and the health status of children's caregivers can affect a child's health, well-being, and development. In spring 2007, almost a quarter (24 percent) of Head Start children have a parent who smokes tobacco, and about a third (32 percent) live in households where someone smokes. In addition, two percent of children live in households where someone has gotten into trouble with family,

friends, or the police, or missed work or school due to alcohol or drugs in the past year.

In spring 2007, parents were once again asked a set of questions from the CES-D Depression Scale (short form; Radloff 1977). While the majority of parents do not report symptoms of depression, the percentage of parents reporting symptoms of moderate or severe depression remained at 19 percent in both fall and spring.

### **Parent Involvement in Head Start**

Parents are involved in their children's Head Start programs in a wide variety of ways. As shown in Figure 5, and consistent with FACES 2000 (ACF 2003), the most common types of involvement in spring 2007 are attending parent/teacher conferences (85 percent), observing their child's classroom (72 percent), and visiting with a Head Start staff member at the parent's home (70 percent). Half of parents attended Head Start social events such as fairs for children and families, and 49 percent attended parent education meetings or workshops. These numbers are higher than in FACES 2000, when 42 percent and 43 percent of parents, respectively, reported these types of involvement. Sixty percent of parents volunteered in their child's Head Start classroom in spring 2007, and somewhat lower percentages volunteered in other ways. One-quarter participated in a Policy Council, program monitoring-related activities, or other Head Start planning group.

### **Satisfaction with Head Start**

Parents report high levels of satisfaction with Head Start, consistent with findings for earlier FACES cohorts (ACF 2003). Also consistent with previous cohorts, satisfaction with child-related aspects of Head Start (such as helping the child to grow and develop, or identifying and providing services for the child) is greater than with family-related aspects (for example, being open to parents' ideas and participation and identifying or providing services for the family). While each of the four child-related aspects was reported as very satisfactory by over 80 percent of parents, as shown in Figure 6, only one of the

four family-related facets of the program (respecting family's culture and background) was rated that highly. Still, even the least satisfactory aspect—helping parents to become more involved in community groups—was reported as very satisfactory by more than half (59 percent) of parents.

The parent interview included a list of children's and parent's positive experiences with Head Start and asked parents whether each item described their and their child's experiences with the program never, sometimes, often, or always. As shown in Figure 7, for each item, a majority of parents reported that this was "always" their own and their child's experience. The lowest rating was for "child gets lots of individual attention" (55 percent). For each of the other items, at least 79 percent of parents reported always having a positive experience.

### **Social Support**

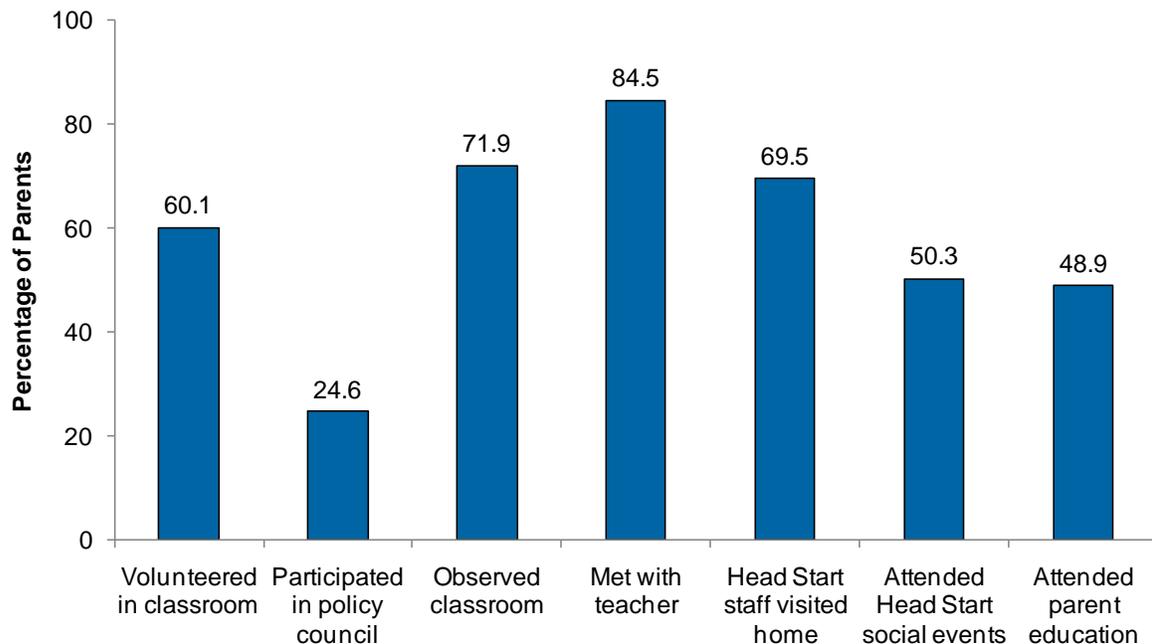
FACES asked parents about the types of social support they receive from various sources, including Head Start. As shown in Figure 8, the majority of parents (75 percent) report always being able to find someone to talk to when they need advice, but fewer (45 percent) said that it was always easy to find someone to watch their child while they run an errand.

Family members are most often reported as "very helpful" (88 percent) to the parent in terms of raising the child. Head Start staff members are the next most commonly reported source of support (60 percent), followed by friends (47 percent). Professionals other than Head Start staff are reported to be very helpful by 29 percent of parents.

### **Service Receipt**

FACES asked parents about different community or government services that household members may be receiving, including assistance with school or job training, English as a Second Language (ESL) classes, and various types of counseling. The services most commonly reported were dental or orthodontic care (reported by 12 percent of parents), help

**Figure 5. Parent Involvement in Head Start**



Source: FACES Spring 2007 Parent Interview

with housing (9 percent), and child care (8 percent).

About 37 percent of households receiving any of the services (12 percent of households overall) reported that Head Start had made them aware of or had helped them to obtain at least one of the services they were receiving. In response to a separate question, 7 percent of parents reported that Head Start had helped them find a regular health care provider for their child, most often by providing information on available providers. Four percent reported that Head Start had helped the child's mother take or locate programs, courses, classes, or workshops.

### **Child Attendance at Head Start**

The average amount of time children spend in Head Start did not change significantly between the fall and spring. On average, parents reported children spending about 24 hours per week in Head Start programs at both points in time. Almost half of children (49 percent) are enrolled in full-day Head Start programs, while others

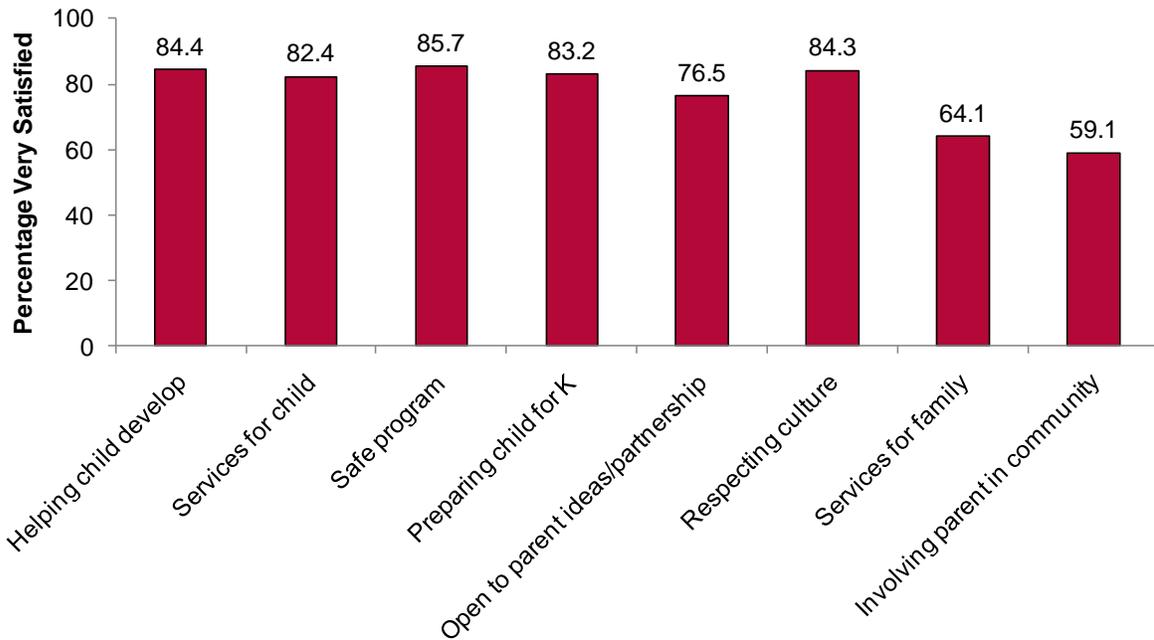
attend Head Start only in the morning (38 percent) or afternoon (13 percent).

In addition to the programs' scheduled hours, individual attendance patterns can result in variation in children's Head Start experience. According to teacher reports, almost half of children (43 percent) missed fewer than 5 days of Head Start during the program year, with 3 percent missing no days. One-third missed between 6 and 10 days, and another 16 percent missed between 11 and 20 days. Teachers report that about 6 percent of children missed more than 20 days of class during the year. Frequent absenteeism could indicate a chronic health problem or some instability in the family that prevents the parent from taking the child to the program every day.

### **Child Care Outside of Head Start**

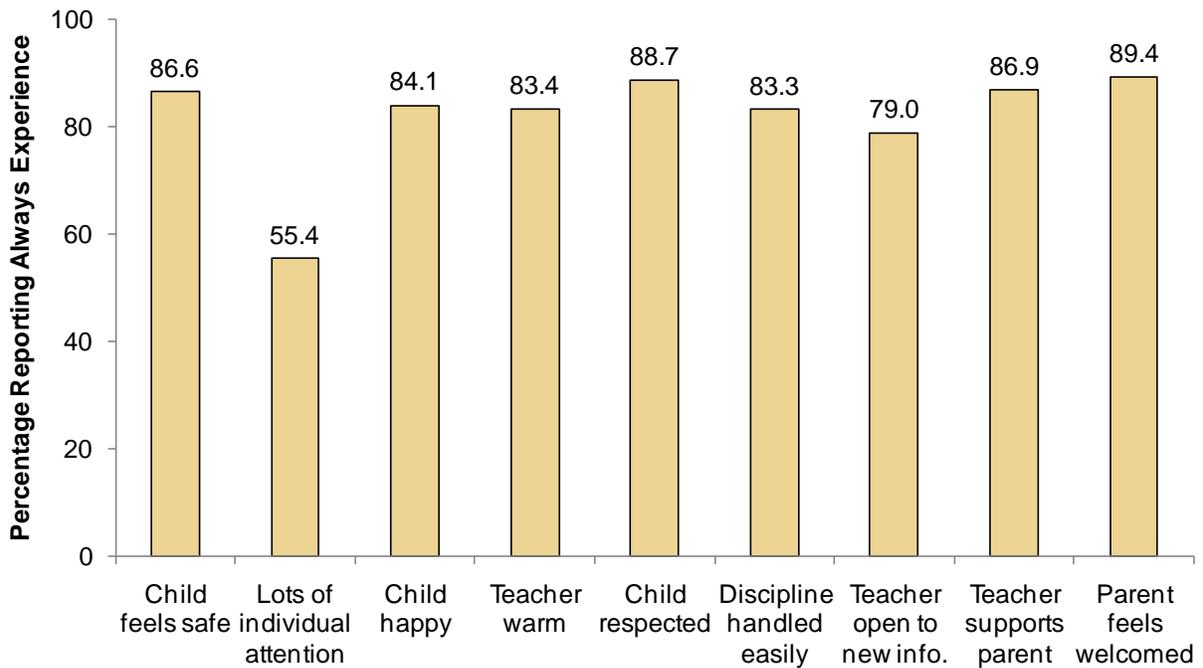
The percentage of children in child care before or after Head Start increased from 36 to 40 percent between fall 2006 and spring 2007. The average amount of time spent in child care outside of Head Start (19 hours per week,

**Figure 6. Parent Satisfaction with Head Start**



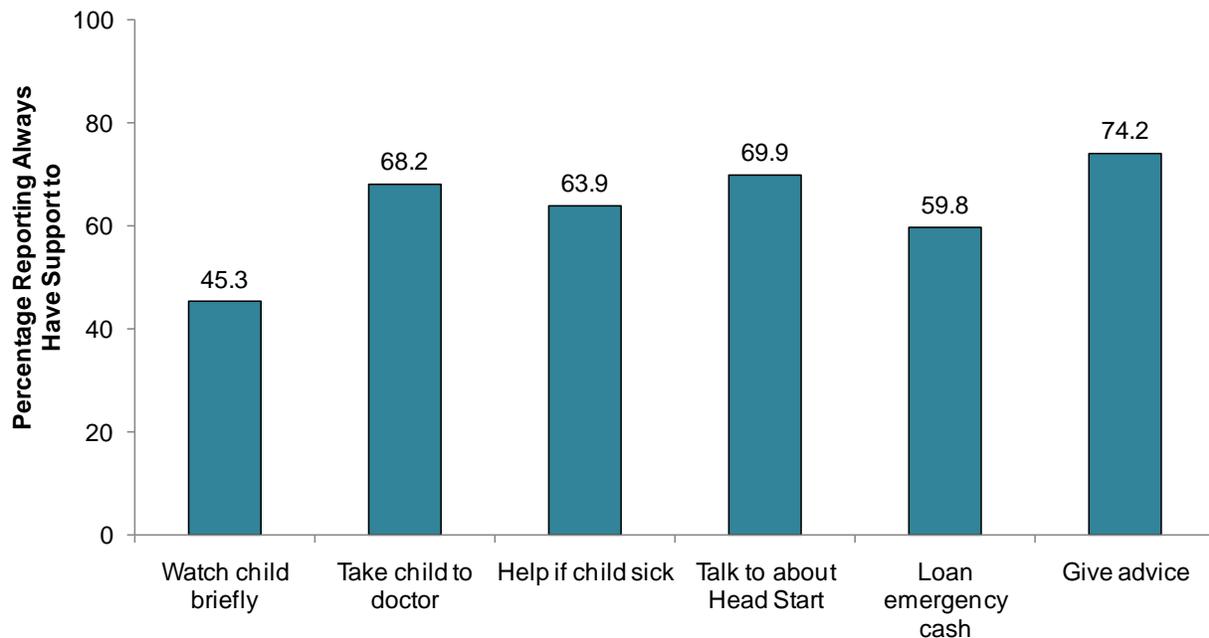
Source: FACES Spring 2007 Parent Interview

**Figure 7. Positive Experiences with Head Start**



Source: FACES Spring 2007 Parent Interview

**Figure 8. Social Support Parents Receive**



Source: FACES Spring 2007 Parent Interview

among those in care) did not change significantly between the fall and spring, however. The average child spends about 30 hours per week in the care of someone other than his or her parents, including Head Start.

The changes in child care usage between the fall and spring differed depending on the type of primary care arrangement parents used for their children. The largest increase was in the percentage in relative care, which increased from 23 to 27 percent from fall to spring. The percentage of children receiving care in a non-relative's home decreased from 5 to 3 percent. The changes in the primary types of care were particularly notable for 3-year-olds.

Hispanic/Latino children remain less likely to be in child care than children of other racial/ethnic backgrounds, but their participation patterns changed the most. The percentage of Hispanic/Latino children in any type of child care before or after Head Start increased from 29 percent to 34 percent between fall and spring. The primary care arrangement used by parents of Hispanic/Latino children also changed over

the program year. A larger percentage of Hispanic/Latino children were in relative care and center-based care in the spring than in the fall, while the percentage in non-relative home care decreased.

## **CHILD OUTCOMES**

In this section we describe the cognitive, social-emotional, and health and physical development of children who were newly entering the Head Start program in fall 2006 and were still enrolled in spring 2007.<sup>23</sup> In the area of children's cognitive development, we first describe the skills of children who were assessed in English in the fall and spring, followed by those of children assessed in Spanish at both waves.<sup>24</sup> Throughout this section, we first describe the outcomes for all children and then provide descriptive information by important subgroups, including age, gender, race/ethnicity, and family risk status.

### **Child Cognitive Development**

**Instruments used.** To assess children's skills and knowledge, norm- and criterion-referenced

measures of language, writing, and math development were directly administered to the children. To measure children's receptive vocabulary in English and Spanish, the battery included the Peabody Picture Vocabulary Test, Fourth Edition (PPVT-4) (Dunn and Dunn 2006) and the Test de Vocabulario Imagenes Peabody (TVIP) (Dunn, Lugo, Padilla, and Dunn 1986).<sup>25</sup> The battery measured children's letter-word knowledge and skills in applied problems and writing, using the Letter-Word Identification, Applied Problems, and Dictation/Spelling subtests from the Woodcock-Johnson Psycho-Educational Battery, Third Edition (Woodcock, McGrew, and Mather 2001) and the Bateria III Woodcock-Muñoz (Woodcock et al. 2004).<sup>26</sup> To assess math skills, it included a supplemental set of math items from the Early Childhood Longitudinal Study, Birth Cohort math assessment. Items were also included to tap children's story and print concepts. Parents and teachers also reported on children's acquisition of skills and knowledge in the areas of language, writing, and math.

**Language screening.** In the fall, the direct child assessment began with a screening to determine whether children who primarily spoke a language other than English at home should be assessed in English, assessed in Spanish, or not assessed at all. Two subtests from the Pre-LAS 2000, Simon Says and Art Show, were used as screening tools. Children whose home language<sup>27</sup> was English were administered the cognitive assessment battery in English regardless of their scores on the language screener. If a child made five consecutive errors on both the Simon Says and the Art Show and primarily spoke Spanish at home, he or she was administered the PPVT-4 and then routed to the Spanish-language cognitive assessment. A child who made five consecutive errors on both the Simon Says and the Art Show and did not primarily speak English or Spanish was administered only the PPVT-4 and was then routed out of the cognitive assessment and was just weighed and measured. Children who passed the screener and whose primary home

language was not English received the cognitive assessment battery in English. In the spring, an adapted version of the screening procedure was used. All children were administered the Simon Says task of the Pre-LAS 2000. Following this task, those who primarily spoke English at home and those who had passed the language screener in the fall were routed to the English version of the assessment. All other children were administered both Simon Says and Art Show, and, as in the fall, performance on both tasks was used to determine whether these children should be assessed in English, assessed in Spanish, or administered only the PPVT-4 and weighed and measured.

**Children assessed in English.**<sup>28</sup> Children score below national norms on most measures of language, literacy, and math development in both the fall and spring of their first year of Head Start (see Table 1). However, children make statistically significant progress towards norms during the year in the areas of English receptive vocabulary (+2.2 standard score points), letter-word knowledge (+5.6 standard score points), and applied problems (+1.9 standard score points). In fact, children's gains in the area of letter-word knowledge during this period place their scores at the national average by the spring. Standard scores have a mean of 100 and a standard deviation of 15. These scores allow for comparisons of an individual's performance to others of the same age (or grade). Thus, relative to same-age peers, children's letter-word knowledge increased by more than one-third of a standard deviation. However, in all other areas, children remain below norms at the end of the program year.

Cross-cohort comparisons show that gains across areas during the first Head Start year are similar across the FACES 2003 and 2006 cohorts.<sup>29</sup> Children made significant progress towards norms in early literacy skills in FACES 2003<sup>30</sup> (+4.9 points) and in FACES 2006 (+5.6 points). In fact, in FACES 2006 by the end of the first program year, children have strong letter-word skills. Across subgroups, most children are near, if not at or above the national

**Table 1. Mean Standard Scores for FACES Child Assessment Measures for Children Taking the Assessment in English at Both Waves: Fall 2006, Spring 2007, Fall-Spring Change**

Scales (standard scores)	Number of cases	Fall 2006	Spring 2007	Fall-Spring Change
		Mean	Mean	Mean
PPVT-4	2266	85.3	87.5	2.2***
TVIP <sup>a</sup>	212	86.6	83.7	-2.9*
WJ3: Letter Word Identification	2101	94.4	100.0	5.6***
WJ3: Spelling	2223	95.1	96.4	1.3
WJ3: Applied Problems	2018	89.7	91.6	1.9***

\*p<.05; \*\*p<.01; \*\*\*p<.001

<sup>a</sup> These scores are for children primarily spoken to in Spanish at home who passed the language screener threshold and took the remainder of the assessment in English at both waves.

Note: Lower N's for standardized score data on the WJ: Applied Problems measure is the result of fewer cases having valid scores on these assessments at both waves.

mean (see Figure 9). Head Start has emphasized the importance of early literacy skills such as letter knowledge in recent years. Gains towards norms in children's vocabulary skills<sup>31</sup> and applied problems were also similar across the two cohorts. The gap between Head Start children's scores and national norms in early writing did not narrow significantly in FACES 2003 or FACES 2006.

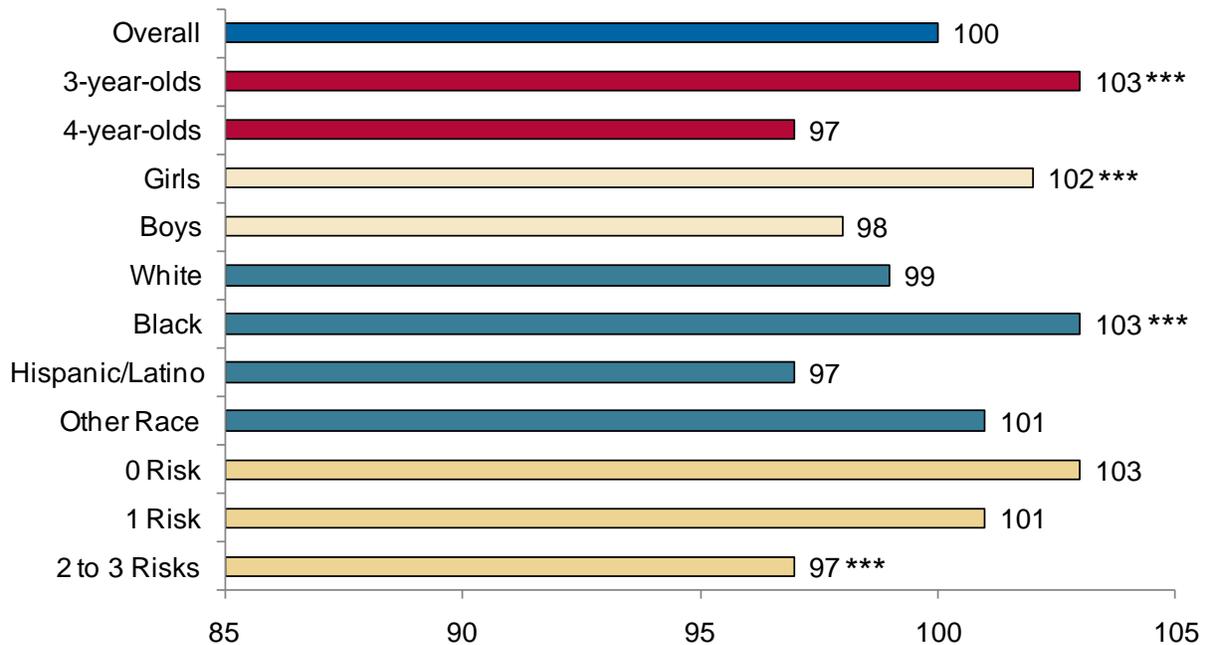
On criterion-referenced measures without norms,<sup>32</sup> children make progress across developmental areas. For example, children score on average in the low range on the Story and Print Concepts task in both the fall (3.7 out of 14) and spring (4.9 out of 14), but they can answer about one more question correctly in this area by the end of the program year, regardless of age, gender, race/ethnicity and number of family risks. Both teachers and parents report that children demonstrate one to two more writing, language, or math skills by the end of the program year, regardless of subgroup.

On the ECLS-B math items, children also make progress during the program year and can correctly answer more items. For example, while fewer than 30 percent of children in Head Start are able to demonstrate number and shape skills<sup>33</sup> at the start of the program year, by the spring about half are able to. For comparison, in the ECLS-B national sample, 63 percent of preschool children demonstrated these skills.<sup>34</sup>

**Diversity in skills.** Although children on average score below norms in the fall and spring, children demonstrate considerable diversity in their skills. For example, children in the bottom quartile score on average at least one standard deviation below national norms in many areas in both the fall and spring, while children in the top quartile score at or above the national average across areas. In the area of receptive vocabulary, children in the bottom quartile score more than two standard deviations below norms in the fall (65.0) and more than one standard deviation below norms in the spring (74.5), while those in the top quartile score at the national average in the fall (103.5) and spring (100.4). Across areas, children who begin with fewer skills relative to peers make more gains than those who begin with greater skills. However, these children still have below average skills at the end of the program year.

**Age.** Both 3- and 4-year-old children make significant progress towards norms in receptive vocabulary (+1.0 points versus +4.1 points, respectively) and letter-word knowledge (+6.7 points versus +3.9 points, respectively). Only 4-year-olds make significant progress towards norms in early writing (+5.8 points) and applied problems (+3.8 points). Thus, 4-year-olds assessed in English make more progress relative to peers than 3-year-olds across areas, except letter-word knowledge where 3-year-olds

**Figure 9. Children’s Mean WJ III: Letter-Word Scores Comparing Subgroups Assessed in English, Spring 2007**



Source: FACES Spring 2007 Direct Child Assessment

Note: Within each category (age, gender, race/ethnicity, risk), asterisks indicate subgroups that are significantly different from other subgroups in the category

\*=p<.05; \*\*=p<.01; \*\*\*=p<.001

make more progress towards norms. Notably, 3-year-olds who took the assessment in English generally perform closer to their same-age peers nationally than 4-year-olds across measures.

On criterion-referenced measures without norms, both 3- and 4-year-old children make progress across developmental areas. On the ECLS-B math items, both 3- and 4-year-old children make progress during the program year and can correctly answer more items. For example, while less than 20 percent of 3-year-olds are able to demonstrate number and shape skills at the start of the program year, by the spring about 40 percent are able to. The percentage increases from 41 percent to 67 percent among 4-year-olds. Across areas, 4-year-olds demonstrate more advanced skills in absolute terms.

**Gender.** With the exception of letter-word knowledge and early writing skills, girls assessed in English score below national norms across measures of language and math development in both the fall and spring of their first year of Head Start. However, in the areas of English receptive vocabulary, letter-word knowledge, early writing, and applied problems, girls make progress toward these norms during the program year. In fact, girls assessed in English gain 6 standard score points in the area of letter-word knowledge during this period and score above the national average in this area by the spring (102.0; Figure 9). They also score at the national mean in early writing by the spring (99.4). In contrast, boys make progress towards norms in the areas of English receptive vocabulary (+2.4 points) and letter-word knowledge (+5.0 points) only. Unlike girls, they score below norms across measures at both the beginning and end of the year.

On criterion-referenced measures without norms, both boys and girls make progress across developmental areas. On the ECLS-B math items, both girls and boys can correctly answer more items by the spring. For example, while less than 30 percent of girls are able to demonstrate number and shape skills at the start of the program year, by the spring 51 percent are able to. The percentage increases from 24 percent to 46 percent among boys.

**Race/ethnicity.** With the exception of letter-word knowledge, children from all racial/ethnic backgrounds score below national norms across measures of language, literacy, and math development in both the fall and spring of their first year of Head Start. All children make progress toward norms in the areas of English receptive vocabulary and letter-word knowledge during the year, regardless of race/ethnicity. In fact, children from all racial/ethnic groups score at or near norms in letter word knowledge by the end of the program year (see Figure 9), with African American children making the greatest gains (+7.4 points) and scoring above norms by spring (102.5). Only White and African American children make progress towards norms in applied problems during the program year.

On criterion-referenced measures without norms, children from all racial/ethnic backgrounds make progress across developmental areas. On the ECLS-B math items, all children can correctly answer more items. For example, while 35 percent of White children are able to demonstrate number and shape skills at the start of the program year, by the spring 59 percent are able to. The percentage increases from 21 percent to 41 percent among African American children, from 23 percent to 48 percent among Hispanic/Latino children, and from 30 percent to 52 percent among Other race children.

**Family risk.**<sup>35</sup> With the exception of letter-word knowledge, regardless of number of family risks, children score below national norms across measures of language, literacy, and math development in both the fall and spring of their first year of Head Start. In fact, children with no

(+ 4.4 points), 1 (+ 6.0 points), and 2 or more risks (+5.8 points) make statistically significant progress towards norms in the area of letter-word knowledge. However, by the end of the program year, children with no (102.9) and 1 family risk (101.2) score above norms in this area. Children with 2 or more family risks remain below norms in letter-word knowledge in the spring (97.4). Regardless of number of family risks, children also make progress toward norms during the year in the area of English receptive vocabulary. During the program year, children with no, 1, and 2 or more family risks gain 2.1, 2.6, and 2.6 standard score points, respectively. However, all groups remain below norms at the end of the program year in this area. Only children with 1 family risk make progress towards norms in early writing (+3.0 points) during the program year. Only children with no family risks make progress towards norms in the area of applied problems during the year (+4 points).

On criterion-referenced measures without norms, children from all backgrounds make progress across developmental areas. On the ECLS-B math items, all children can correctly answer more items by the spring. While 29 percent of children with no family risks are able to demonstrate number and shape skills at the start of the program year, by the spring about 53 percent are able to. The percentage increases from 28 percent to 50 percent among children with 1 risk and from 23 percent to 44 percent among children with 2 or more risks.

**Children assessed in Spanish.**<sup>36</sup> Children who take the assessment in Spanish at the beginning and end of their first Head Start year score below norms across measures of language, literacy, and math development in both the fall and spring (Table 2). Mean scores are only reported for those with valid scores at both occasions (for example, those who established a basal on the PPVT-4 at both waves). Across measures, the scores for these children are lower than those who passed the screener and are assessed in English at both waves, as well as those who changed assessment language from Spanish in the fall to English in the spring.

**Table 2. Mean Standard Scores for FACES Child Assessment Measures for Children Taking the Assessment in Spanish at Both Waves: Fall 2006, Spring 2007, Fall-Spring Change**

Scales (standard scores)	Number of cases	Fall 2006	Spring 2007	Fall-Spring Change
		Mean	Mean	Mean
PPVT-4	25	61.6	63.3	1.7
TVIP <sup>a</sup>	132	84.8	81.5	-3.3***
WM3: Letter Word Identification	49	76.5	86.7	10.2***
WM3: Spelling	131	88.2	88.3	0.1
WM3: Applied Problems	95	82.5	82.8	0.3

\*p<.05; \*\*p<.01; \*\*\*p<.001

Note: Lower N's for standardized score data on the WM: Letter Word Identification and PPVT-4 measures are the result of fewer cases having valid scores on these assessments at both waves.

<sup>a</sup> These scores are for children who did not pass the language screener threshold and took the remainder of the assessment in Spanish at both waves.

Children assessed in Spanish at both time points make statistically significant progress toward norms only in the area of letter-word knowledge during the year. In fact, children gain more than 10 standard score points in this area during the year, or about two-thirds of a standard deviation. However, despite these gains and unlike children assessed in English, these children still score below norms in letter-word knowledge in the spring.<sup>37</sup> Thus, it is important to recognize the diversity in children's skills in English and their home language, and to consider the contextual factors in both home and program settings that may contribute to children's learning.

### **Child Social-Emotional Development**

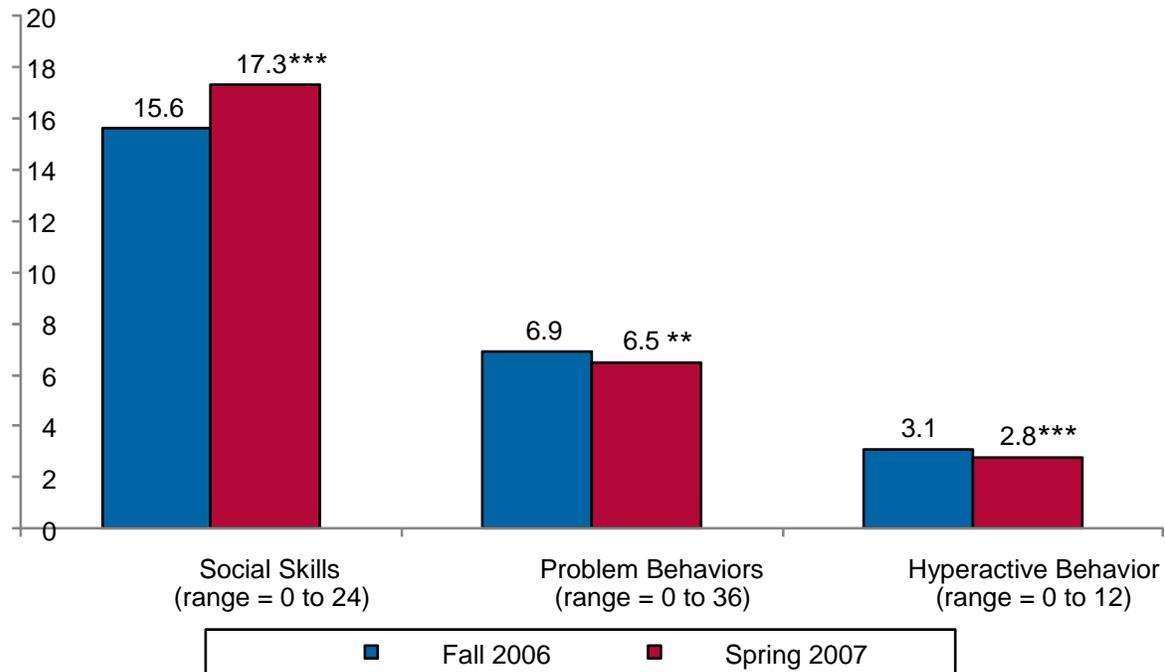
FACES 2006 provides multiple perspectives on children's positive and challenging behaviors that may affect their ability to learn and interact with peers and adults. Teachers reported on children's social skills, such as making friends easily and waiting his/her turn in games or other activities, as well as their problem behaviors in the classroom, such as being very restless and unable to sit still or disrupting ongoing activities. They also assessed children's approaches to learning, such as their attitudes toward learning new things, motivation to perform well, and attention/persistence on learning activities. The approaches to learning measure was the

Preschool Learning Behaviors Scale (PLBS; McDermott et al. 2000, McDermott et al. 2002).

Parents also reported on children's social skills and problem behaviors in the home environment. Finally, using the Leiter-Revised Examiner Rating Scale (Roid and Miller 1997) assessors rated children's behaviors during the assessment situation in such areas as attention, organization and impulse control, activity level, and sociability. Assessor ratings are the only social-emotional rating data that can be compared with normative data.

Both teachers and parents report that children show growth in their social skills during their first Head Start year. Consistent with prior FACES cohorts (Zill et al. 2006), teachers report that children demonstrate statistically significant gains in social skills and cooperative classroom behavior by the end of the program year. They also rate children as having fewer problem behaviors by the spring (see Figure 10), as well as more attention and persistence with tasks (not shown). As in FACES 1997 and 2000,<sup>38</sup> teachers rate children as showing statistically significant declines in hyperactive behaviors<sup>39</sup> by the spring. They do not report changes in children's aggressive and withdrawn behaviors over the course of the program year. This is similar to patterns found in FACES 1997 and 2000.<sup>40</sup>

**Figure 10. Children’s Teacher-Reported Social-Emotional Development Scores, Fall-Spring Change**



Source: FACES Fall 2006 and Spring 2007 Teacher Child Report

Note: All fall/spring differences shown are statistically significant

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

Parents report that children demonstrate more social skills and positive approaches to learning and fewer problem behaviors on average in the spring. Assessors do not report any statistically significant changes in children’s behavior during the assessment situation, including the child’s attention, organization and impulse control, activity level, and sociability.

**Age.** Teachers and parents report few differences by age in changes in social-emotional development over the program year. They report that both 3- and 4-year-old children demonstrate more social skills, cooperative classroom behaviors, and positive approaches to learning on average by the end of the program year. However, although parents report that both groups demonstrate declines in problem behaviors, teachers only report that 3-year-old children demonstrate declines in

problem behaviors and gains in attention and persistence with tasks by the spring. Teachers report that both age cohorts demonstrate declines in hyperactive behaviors during the program year.

**Gender.** Teachers and parents do not report differences in gains or declines in social-emotional development by gender.

**Race/ethnicity.** Teachers report that all children, regardless of race/ethnicity, demonstrate more social skills on average by the end of the program year. However, they report differences in changes in other areas of children’s social-emotional development by race/ethnicity. For example, they report that only Hispanic/Latino children have significantly fewer problem behaviors overall, fewer aggressive behaviors, more positive approaches to learning,

and more positive attitudes toward learning in the spring. They also report that both African American and Hispanic/Latino children demonstrate significantly fewer hyperactive behaviors and greater attention and persistence with tasks in the spring.

**Family risk.** Regardless of number of family risks, teachers report that children demonstrate more social skills and fewer problem behaviors on average by the end of the program year. They also report that children demonstrate fewer hyperactive behaviors in the spring. Teachers report that only children with one risk or two or more risks have greater attention and persistence with tasks by spring.

Parents report that children with no and 2 or more risks demonstrate more social skills and positive approaches to learning on average in the spring. For all risk groups, they report fewer problem behaviors by the end of the program year.

**Subgroup differences in problem behaviors.** Looking only at levels of problem behaviors in the spring, teachers report marked differences across subgroups in children's problem behaviors by the spring. For example, there are expected developmental differences, with 4-year-olds displaying fewer problem behaviors than 3-year-olds (mean = 5.4 versus 7.1). Teachers also report that girls have fewer problem behaviors than boys (mean = 5.2 versus 7.7) and that Hispanic/Latino children (mean = 5.4) have fewer problem behaviors than children from other racial/ethnic backgrounds, including White (mean = 7.3), African American (mean = 6.8), and Other race (mean = 7.3) children. Finally, they report that children with two or more family risks (mean = 6.8) have more problem behaviors than children with one (mean = 6.0) or no family risks (mean = 5.8).

### **Child Health and Physical Development**

As in the fall, approximately three-quarters of children are rated as having "excellent" or "very good" health by their parents in the spring (see Figure 11). Only a small percentage of children

are reported as having "fair" or "poor" general health at the end of the program year. This finding is consistent with prior FACES cohorts. Parents report differences in general health status by gender, race/ethnicity and family risk. More parents of girls (81 percent) report that their child is in excellent or very good health than do parents of boys (75 percent). Similarly, more parents of White children (86 percent) report their child is in excellent or very good health, than do parents of African American (80 percent), Hispanic/Hispanic/Latino (70 percent), and Other race children (81 percent). Fewer parents of children with no family risks report their child to be in fair or poor health than do parents of children with one or more risks.

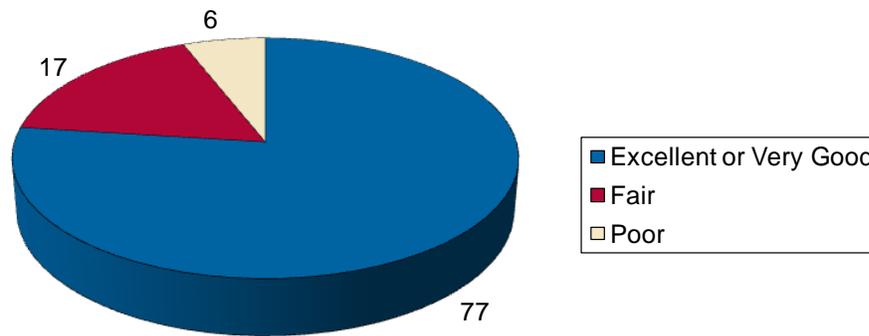
Approximately 15 percent of children are reported by their teacher as having a disability in the spring. Among Head Start children identified by teachers as having a disability, speech and language impairments (79 percent) and cognitive impairments (22 percent) are the most common disabilities. About a quarter of those identified as having a disability are reported by teachers to have more than one impairment. About two-thirds of Head Start children with an identified disability have an Individual Education Plan (IEP) or Individualized Family Service Plan (IFSP) in the spring.

Head Start children have an average Body Mass Index (BMI)<sup>41</sup> that is above average for their age range. In fact, about 19 percent of children are overweight, and 17 percent are obese.<sup>42</sup> A similar percentage (18 percent) of preschoolers in the Early Childhood Longitudinal Study-Birth Cohort (ECLS-B) was obese (Anderson and Whitaker 2009). Hispanic/Latino children (20 percent) are more likely to be obese than White (15 percent) and African American children (15 percent).

### **HEAD START TEACHERS AND CLASSROOMS**

The FACES conceptual framework envisions a relationship between the provision of quality early care and educational services and children's developmental outcomes.

**Figure 11. Child Health Status, Spring 2007**



Source: FACES Spring 2007 Parent Interview

Accordingly, FACES collected information on the characteristics, credentials, beliefs, and reported classroom activities of lead teachers in the classrooms where sample children were enrolled in spring 2007. Statistics are weighted to represent all teachers serving children who entered Head Start for the first time in fall 2006 and who were still enrolled in their classrooms in spring 2007.

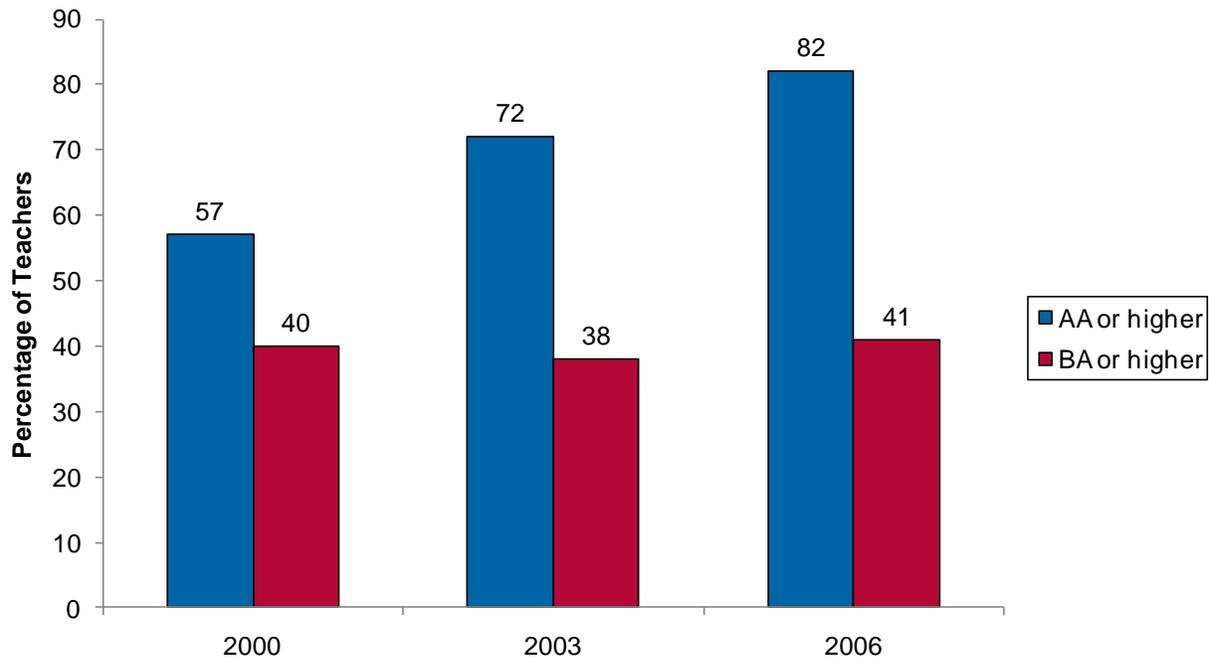
### Teacher Characteristics

Most Head Start teachers are female (98 percent) and more than half are between the ages of 30 and 49. The percentage of teachers who identify themselves as Hispanic/Latino has increased over time. In spring 2007, 20 percent of teachers were Hispanic/Latino, compared with 16 percent in FACES 2000 and 17 percent in FACES 2003 (ACF 2008). More than 80 percent of Head Start teachers have an Associate's (AA) or Bachelor's (BA) degree (see Figure 12). Compared to FACES 2000 and 2003, a larger percentage of teachers have an AA or higher (82 percent, versus 57 and 72 percent, respectively). This is consistent with Head Start's mandate to increase the educational levels of its teachers to an AA or higher. The percentage of teachers with a BA or higher in spring 2007 (41 percent) is similar to the percentage in FACES 2000 (40 percent) and 2003 (38 percent). In addition to these degrees,

many teachers have specific training in child development and teaching; more than half of Head Start teachers report having a Child Development Associate (CDA) certificate, and about a third have a state-awarded certificate, teaching certificate or license, or are currently enrolled in teacher training. The average Head Start teacher has been in the classroom for nearly 9 years, and the average annual salary is just below \$23,000.

Head Start teachers are generally positive about their profession. FACES measured teacher beliefs and attitudes towards developmentally appropriate practice (Burts et al. 1990), yielding higher scores on child-initiated practice (4.5 out of 5) than on didactic, strictly teacher-initiated practice (2.5 out of 5). Teachers scoring higher on developmentally appropriate practice are likely to endorse such items as "Head Start classroom activities should be responsive to individual differences in development" and to disagree with such items as "Children should work silently and alone on seatwork." In addition, on a measure of management climate (Lambert et al. 1999; Lambert 2002), teachers rate their programs relatively positively (on average, 3.6 on a 5-point scale). The scale asks teachers to rate the strength of their agreement with statements about the program, such as "Provides enough assistance to teachers in the

**Figure 12. Associate’s Degrees Show Increase Over Time While Bachelor’s Degree Percent is Stable**



Source: FACES Fall 2006 Teacher Interview (and published data)

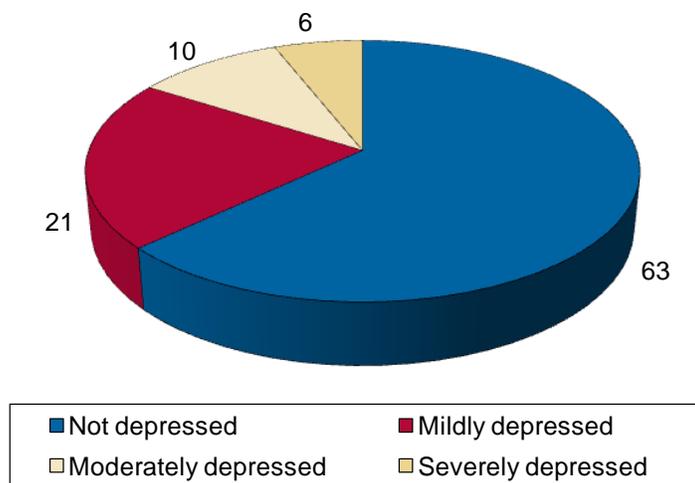
classroom” and “Promotes teamwork among teachers.” Further, teachers report high levels of satisfaction with their current positions. Eighty-eight percent of lead teachers agree or strongly agree with the statement “I really enjoy my present teaching job,” while 94 percent agree or strongly agree that “I am certain I am making a difference in the lives of the children I teach.” The average teacher satisfaction score is 4.5 out of 5 points.

FACES measured teachers’ mental health status because of its potential effects on their interactions with children in their classrooms. As shown in Figure 13, most Head Start teachers do not report elevated symptoms of depression in spring 2007. However, six percent of teachers report symptoms of severe depression, and nearly ten percent report symptoms of moderate depression. In all, slightly more than one-third of teachers report some depressive symptoms.

### **Classroom Educational Environment**

As a measure of the spring classroom environment, FACES asked teachers to report on the types and frequency of learning activities in early literacy and mathematics in their classrooms. Overall, the majority of reading and language activities are reported to occur daily or almost daily. The most common activities, reported by at least 80 percent of teachers as occurring daily or almost daily, are: letter naming, writing letters, discussing new words, listening to the teacher read stories where children can see the print, learning about conventions of printed materials, and writing their own names. Less frequent activities include listening to the teacher read books without seeing the print, learning about rhymes, retelling stories, and learning about prepositions. Similarly, teachers report frequent math-related activities in their classrooms (see Figure 14). At least 80 percent of teachers report daily or almost daily counting aloud, using a calendar,

**Figure 13. One-Third of Head Start Teachers Report Some Depressive Symptoms**



Source: FACES Spring 2007 Teacher Interview

and engaging with geometric and counting manipulatives. A smaller percentage of teachers report having children frequently play math-related games, using creative movement or drama to understand math, telling time, or working with measuring instruments. The most frequent activities were the same as those reported in the fall.

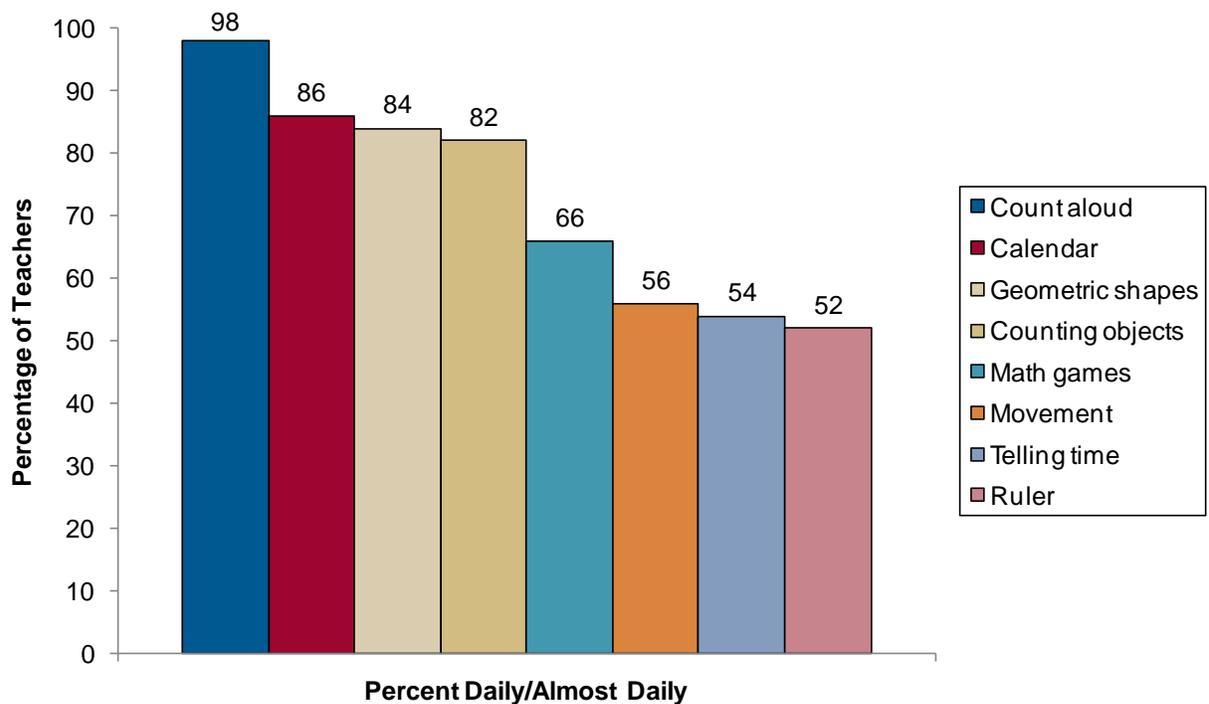
Close to two-thirds of Head Start teachers report their primary curriculum is Creative Curriculum, whether they use only one or a combination of curricula. Next most frequently used is the High/Scope Curriculum (16 percent of teachers), with the remaining teachers using other curricula. The assessment tools that teachers report using follow the same pattern, although only 39 percent of teachers use the Creative Curriculum assessment tool and 9 percent use the High/Scope Child Observation Record (COR). The Desired Results Developmental Profile (DRDP) is used by another 9 percent of teachers, and the remaining nearly 43 percent use a variety of other tools. Using curriculum and assessment tools that are aligned with each other and with program standards is considered advantageous to supporting children’s learning

(National Research Council 2008). Out of the Head Start teachers who report using Creative Curriculum, about 60 percent use the Creative Curriculum assessment tool, and about 40 percent use a different tool. About 40 percent of teachers overall use both the Creative Curriculum and its assessment tool; less than 2 percent of teachers use both the High/Scope curriculum and the COR.

### **Classroom Observations**

To measure overall classroom quality in FACES 2006, FACES used the Instructional Support domain of the Classroom Assessment Scoring System (CLASS; Pianta, LaParo, and Hamre 2008) in conjunction with the full Early Childhood Environment Rating Scale-Revised (ECERS-R; Harms, Clifford, and Cryer 1998) in spring 2007. Classroom observations also included the Arnett Caregiver Interaction Scale (Arnett 1989), as well as observer counts of child-adult ratios and group sizes. Observations were done in a representative sample of 350 classrooms attended by 3- and 4-year-old children in their first year of Head Start. Observations lasted for 4 hours on average and were typically completed in the mornings.<sup>43</sup>

**Figure 14. Teachers Report Frequent Math Activities**



Source: FACES Spring 2007 Teacher Interview

The ECERS-R is a global rating of classroom quality based on structural features of the classroom (Harms et al. 1998). It has been used historically in FACES (starting with the earlier version of the ECERS [Harms and Clifford 1980] in the 1997 cohort) and in many other large-scale studies. The CLASS measures classroom quality in terms of both instructional and social-emotional aspects of the environment, across three domains of interaction: Emotional Support, Classroom Organization, and Instructional Support. Instructional Support, the domain used in FACES 2006, measures the quality of instructional practices used in the classroom on three dimensions (Concept Development, Quality of Feedback, and Language Modeling).<sup>44</sup> Both the CLASS and the ECERS-R items are scored from 1 to 7, with higher scores reflecting better quality care. The Arnett assesses the quality and content of the teacher’s interactions with children. The scale measures the emotional tone, discipline style, and responsiveness of the caregiver in the classroom. Total scores range from 0 to 90 with higher scores reflecting greater

caregiver sensitivity and responsiveness and less detachment and punitiveness. Together, these measures provide information on the educational environment and quality of Head Start classrooms.

The National Association for the Education of Young Children (NAEYC) offers professional standards for appropriate child-teacher ratios (9 children per adult in classrooms with 3-year-olds and 10 children per adult in classrooms with 4-year-olds) and group sizes (18 or fewer children in classes with 3-year-olds and 20 or fewer children in classes with 4-year-olds). Head Start Program Performance Standards provide similar guidelines (8.5 children per adult in classrooms with 3-year-olds and 10 children per adult in classrooms with 4-year-olds, and a maximum group size of 17 or 20, respectively; see NCCIC 2008). In spring 2007, the average Head Start classroom had 6.2 children to each adult, and the average group size was 14.5, falling well within professional guidelines and Head Start Program Performance Standards. Half of

classrooms (50 percent) had observed group sizes of fewer than 15 children, and the majority (93 percent) had ratios of 9 to 1 or lower.

Average classroom quality in Head Start was within acceptable levels. The average ECERS-R total score was 3.58, and the majority of classrooms fell in the minimal to good range (82 percent; see Figure 15).<sup>45</sup> Compared with other studies of child care and prekindergarten programs, the range of observed quality in Head Start is narrow. Few classrooms (13 percent) scored below 3 (considered the threshold for minimal quality), and none scored above a 6 (considered excellent quality). Average total scores were lower than those found in earlier FACES cohorts, continuing a decline in scores observed over time (5.1 in spring 1998 [ACF 2001], 4.91 in 2001 [ACF 2006], and 4.23 in spring 2004 [ACF 2008]).

Researchers in other large scale studies have derived alternative dimensions of quality using the ECERS-R. Two factors reported in the Multi-State Study of Prekindergarten represent the key dimensions of quality tapped by the full ECERS-R (Clifford et al. 2005).<sup>46</sup> The Provisions for Learning subscale focuses on materials available in the classroom and on the arrangement of the classroom space, while the Teaching and Interactions subscale focuses on the quality of teacher-child interactions. The two subscales reliably assess the areas of classroom quality most proximal to learning. More than half scored between 3 and 4 out of a possible 7 on the Provisions for Learning subscale and an additional 20 percent scored below 3. On the Teaching and Interactions subscale, close to half of observed classrooms scored between 4 and 5. These findings suggest that Head Start classrooms were more likely to score higher on emotional and educational aspects of teaching and interactions than on the provision of materials and furnishings for learning (see Figure 15).

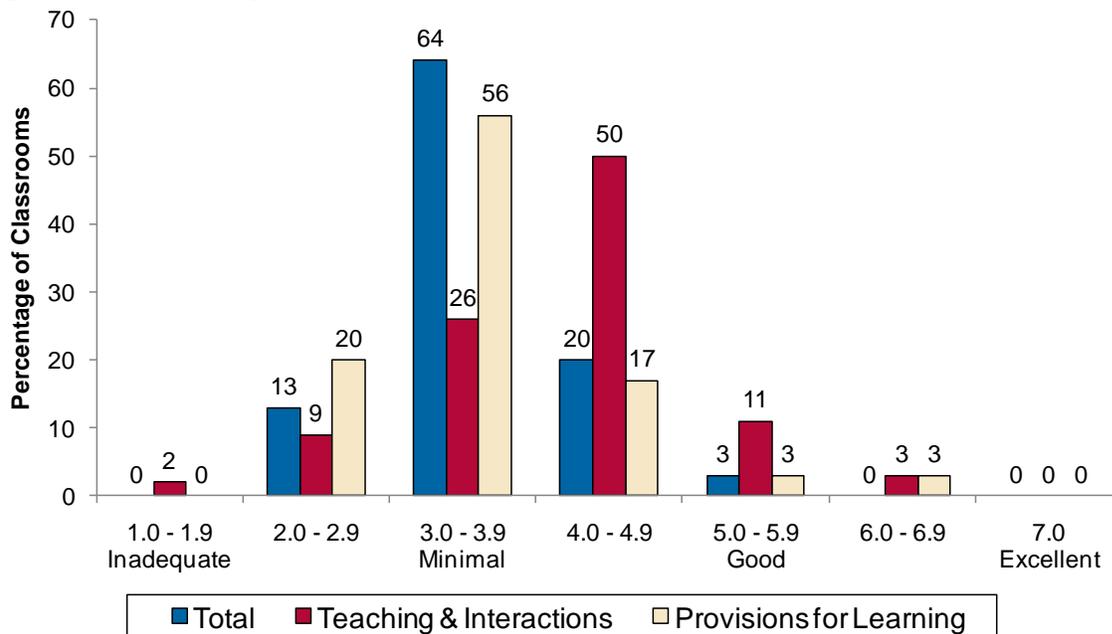
While remaining in the minimal to good range across cohorts, mean scores on these two subscales have declined over time. In spring 2001, the mean Teaching and Interactions

subscale score was 5.41 (SD = 1.31), compared to 4.92 (SD = 1.23) in 2004 and 4.08 in 2007. On Provisions for Learning, mean scores were 4.82 (SD = 1.07) in spring 2001, 3.95 (SD = 0.98) in 2004 and 3.57 in 2007. Across cohorts, classrooms scored higher on Teaching and Interactions than Provisions for Learning. This pattern is similar to that reported in the NCEDL Study of Prekindergarten (Clifford et al. 2005).<sup>47</sup>

Teachers scored highly on the measure of quality and content of their interactions with children. The average Arnett score for lead teachers in Head Start classrooms was 66.4 (out of a possible 90), suggesting high levels of teacher sensitivity, responsiveness, and encouragement of children's independence and self-help skills. Scores ranged from 23 to 85, and average Arnett scores were close to those reported in earlier FACES cohorts, although like the ECERS-R, these have also declined over time (73.0 in spring 1998 [ACF 2001], 72.2 in spring 2001 [ACF 2006], and 70.4 in spring 2004 [ACF 2008]).

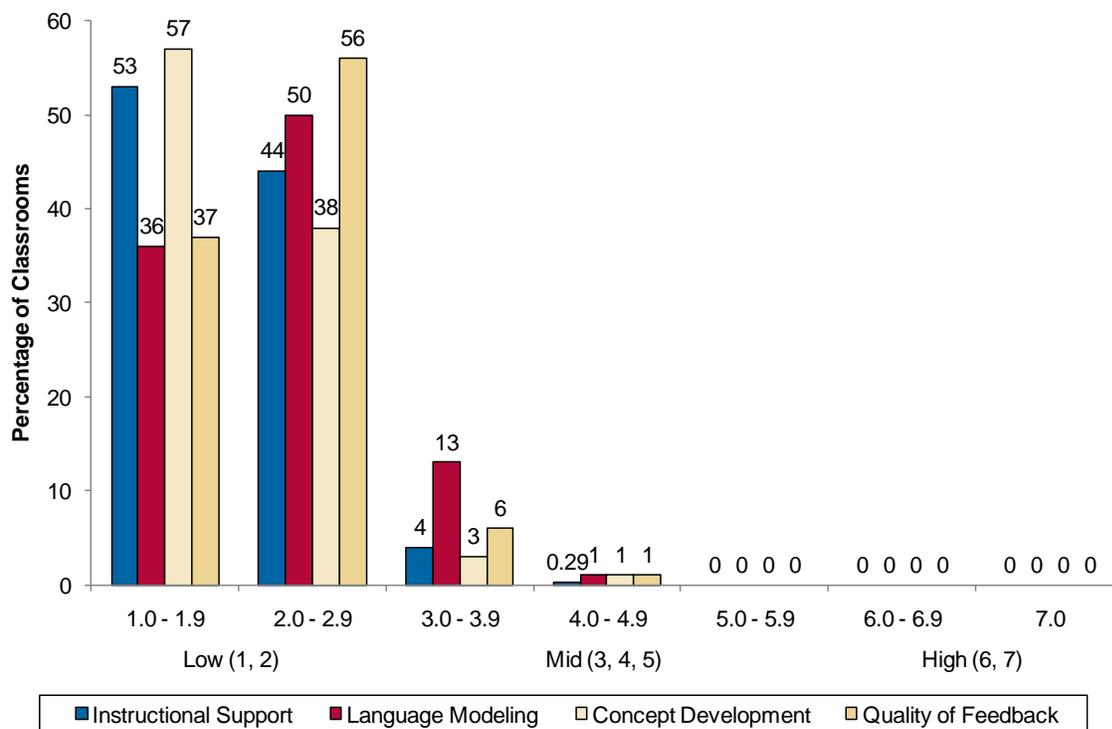
On the Instructional Support domain of the CLASS, classrooms scored at the low end of the 7-point scale. Average quality was 1.9, with the majority of classrooms (96 percent) rated in the low range (1 or 2 points; see Figure 16). Four percent of classrooms scored in the middle range on the domain (3, 4, or 5 points), and none scored in the high range (6 or 7 points). On the dimensions (subscales) of the Instructional Support domain, scores on Concept Development (1.8) were lower than those for Language Modeling (2.1) and Quality of Feedback (2.0). Most classrooms scored in the low range on Concept Development (95 percent) and Quality of Feedback (93 percent), although 14 percent of the classrooms had a middle rating on Language Modeling. While the CLASS does not have normative data, the CLASS Technical Appendix (Pianta et al. 2008) reports mean scores from several large-scale studies that used the CLASS or its precursor, the Classroom Observation System (COS). The mean scores in Head Start classrooms fall within or below ranges reported in these studies.<sup>48</sup>

**Figure 15. Percentage Distribution of ECERS-R Scores**



Source: FACES Spring 2007 Classroom Observation

**Figure 16. Percentage Distribution of Scores on CLASS Instructional Support Domain and Dimensions**



Source: FACES Spring 2007 Classroom Observation

Lower ratings (that is, in the 1 to 2 range) on the Instructional Support domain, relative to the other CLASS domains, are consistent with findings reported in the CLASS appendix. In spring 2008, FACES 2006 conducted a study designed to test the feasibility of conducting the full CLASS in a large number of classrooms. For this pilot, the Emotional Support and Classroom Organization domains were included in addition to Instructional Support. In preliminary analyses, Instructional Support scores were higher and more similar to those reported by the developer (Pianta et al. 2008) when used as part of the full CLASS, suggesting that use of the full CLASS may be a more accurate measure of classroom quality than the use of one domain alone.<sup>49</sup>

### **CORRELATES OF CLASSROOM QUALITY AND TEACHER ATTITUDES**

We used two-level hierarchical linear models (HLM), with classrooms nested within programs, to examine the teacher and program characteristics associated with classroom quality and teacher attitudes. The use of HLM recognizes that teachers/classrooms in the same program are not independent of each other because of shared resource levels, policies, and program practices.

As measures of quality, we used the CLASS Instructional Support domain and its subscale, the Language Modeling dimension, and the ECERS-R Teaching and Interactions and Provisions for Learning subscales. We also examined correlates of teacher attitudes, including the teacher's level of satisfaction with teaching as a career, and the teacher's attitudes toward developmentally appropriate practice, as these may be mediators that link education levels or professional development with quality of practice.

Program-level covariates in each of these analyses included program SES, percentage of English language learners, percentage of teachers using a consistent curriculum and assessment package, teacher turnover, and adjusted program mean salary. Covariates at the teacher/classroom level included teacher

education, experience, reported depressive symptoms, frequency of mentoring, and perceived management support. The analyses of classroom quality also include DAP attitudes and teacher satisfaction with teaching as a career.

Although neither teacher education nor experience is directly associated with observed classroom quality, there may be an indirect association through teacher satisfaction and attitudes toward developmentally appropriate practice. Teacher education at the AA level is related to higher satisfaction ( $b = .30$ ;  $ES = .46$ ), and in a separate model, higher teacher satisfaction is related to ECERS-R Teaching and Interactions scores ( $b = .26$ ;  $ES = .18$ ).<sup>50</sup> Similarly, having more years of teaching experience is related to higher scores on attitudes toward developmentally appropriate practice ( $b = .91$ - $1.48$ ;  $ES = .55$ - $.88$ ), and in separate models, endorsement of developmentally appropriate practice is related to ECERS-R Provisions for Learning ( $b = .07$ ;  $ES = .15$ ) and to CLASS Language Modeling ( $b = .06$ ;  $ES = .15$ ).

Teachers who perceived a more positive management climate also reported greater satisfaction with their work ( $b = .33$ ;  $ES = .41$ ), but management climate is not associated with observed quality measures. Teachers who reported higher depressive symptoms had lower ratings on one measure of quality: the Language Modeling dimension of the CLASS ( $b = -.09$ ;  $ES = -.12$ ). Thus, teachers who reported more symptoms of depression were less likely to be observed supporting children's language development through more and extended conversations, open-ended questions, and mapping actions with language and description. Finally, program socioeconomic status, which represents the average household poverty ratio within a program, is positively related to both ECERS-R Teaching and Interactions ( $b = .49$ ;  $ES = .17$ ) and Provisions for Learning subscales ( $b = .85$ ;  $ES = .36$ ), as well as to teacher endorsement of developmentally appropriate practice ( $b = .92$ ;  $ES = .18$ ).

## ASSOCIATIONS BETWEEN OBSERVED QUALITY AND CHILDREN'S DEVELOPMENTAL STATUS

We used three-level HLM to examine the relationships between classroom quality and children's outcomes, controlling for child/family, teacher/classroom, and program characteristics. These analyses account for the clustering of children within classrooms and classrooms within programs because children in the same classroom and program share a common set of preschool experiences and thus their outcomes are not independent.<sup>51</sup>

We estimated models of children's developmental status in the spring, controlling for their initial status measured in the fall. Outcomes include language and literacy (PPVT-4, Woodcock-Johnson [WJ] Letter-Word Identification), mathematics (WJ Applied Problems, ECLS-B mathematics), and social-emotional development (teacher ratings of children's social skills and behavior problems). The language, literacy, and mathematics outcomes were measured using equal-interval W-scores to facilitate interpretation of variation across scores. Then, all outcomes were z-scored so that the coefficients may be interpreted as the change in the child outcome in standard deviation units for each 1 point increase in the respective variable.

The child/family level covariates included child age, gender, race/ethnicity, household language, poverty ratio, maternal education, maternal depressive symptoms, fall score, and time interval between the fall and spring assessments. The teacher/classroom level covariates included the quality measures discussed previously (Instructional Support, Language Modeling, Teaching and Interactions), teacher education, full-day class, mean peer abilities, variation in peer abilities, and teacher DAP attitudes. The program level covariates included program socio-economic status (SES), percentage of English language learners, percentage of teachers using a consistent

curriculum and assessment package, teacher turnover, and adjusted program mean salary.

We estimated a series of models in the analysis. In Model 1 we included child/family characteristics in level 1. In Model 2 we added classroom quality and teacher/classroom characteristics. In Model 3, we added program characteristics. In order to test whether there is a non-linear relationship between classroom quality and children's outcomes, we included both a linear and a quadratic term in the model and dropped the quadratic term if it was not significant.

### Observed Quality and Children's Cognitive Outcomes

As in the descriptive reporting, only children with valid assessment scores are included in the analyses (for example, children who do not establish a basal on the PPVT-4 are excluded from the appropriate models). The models used z-scored W-scores, which are a marker of absolute, rather than relative, progress. The PPVT and WJ W-scores are on different scales.

**Teacher and classroom level.** Peer abilities are related to children's progress on several measures. For example, variation in peer abilities within classrooms is positively related to children's progress on the PPVT-4 ( $b = .28$ ;  $ES = .10$ ) and Letter Word ( $b = .41$ ;  $ES = .15$ ), meaning that the more variation in the scores of other children in the classroom on these measures at baseline, the greater the progress over the year. In contrast, on math measures, greater progress is related to a higher baseline mean score among classmates (for Applied Problems,  $b = .12$ ;  $ES = .07$ ; for ECLS-B Math,  $b = .10$ ;  $ES = .05$ ). Teachers' educational level is related to children's progress on ECLS-B math, but not on other cognitive measures ( $b = .11$ ;  $ES = .11$ ), such that teachers with an AA have children who make greater progress than teachers with high school or less.<sup>52</sup>

**Observed quality measures.** Children's progress on the PPVT-4 is related to a number of quality measures. The higher the ECERS-R

Teaching and Interactions score is, the greater the progress on the PPVT ( $b = .05$ ;  $ES = .05$ ), controlling for other variables in the model. However, the association between the CLASS Instructional Support or Language Modeling scores and children's PPVT-4 scores in the spring is non-linear ( $b = .05$ ;  $ES = .12$  for Instructional Support quadratic term;  $b = -.31$ ;  $ES = -.19$  and  $b = .08$ ;  $ES = .22$  for Language Modeling linear and quadratic terms, respectively). In other words, in the lower score range, there is little association with quality, but after a threshold of 2.0-2.5, spring PPVT-4 scores increase at an increasing rate with higher quality.

Approximately 14 percent of classrooms score above 3.0 on the CLASS Language Modeling dimension. Classrooms scoring below 3.0 on the CLASS Language Modeling dimension are characterized by such observed features as: teachers engage in few conversations, are more likely to use close-ended questions, rarely repeat or extend the child's responses, rarely map their own or the children's actions with language, and do not use advanced language, such as a variety of words and clarification of more difficult words in familiar terms.

None of the classroom quality measures is significantly associated with children's progress on the Letter Word subtest. There is a negative relationship between Language Modeling and Applied Problems ( $b = -.31$ ;  $ES = -.20$ ), even after controlling for program characteristics.

### **Observed Quality and Children's Social-Emotional Outcomes**

Teacher-reported social-emotional outcomes (social skills and behavior problems) were the basis for the dependent variables. Since response rates for the teacher-child reports were high, nearly all children are included in these analyses.

**Teacher and classroom level.** The models of children's social-emotional outcomes included two measures of peer abilities: (1) average and variance of peer social skills; and (2) average

and variance of peer language achievement (PPVT). Both social skills and language ability of peers may influence classroom dynamics in ways that can affect a child's behavior. Looking first at children's social skills, controlling for other variables, higher average peer social skills are associated with higher spring ratings on the individual child's social skills ( $b = .17$ -.18;  $ES = .10$ -.11), but the variation in social skills in the classroom is not. In addition, the variation in peer language achievement is positively associated with the individual child's social skills rating ( $b = .24$ -.26;  $ES = .08$ -.09), but average language ability in the classroom is not. Behavior problem ratings are related only to average peer social skills: higher levels of average peer social skills are associated with lower individual child behavior problem ratings ( $b = -.14$  to  $-.15$ ;  $ES = -.09$ ); behavior problem ratings are not associated with peer language achievement. Teachers rate children as having fewer behavior problems in classrooms in which the average child is rated higher on social skills.

Teacher education is associated with ratings of children's social skills, with more-educated teachers (with an AA or more) rating children lower on social skills than high school-educated teachers ( $b = -.23$  to  $-.30$ ;  $ES = -.23$  to  $-.30$ ). Teachers' endorsement of developmentally appropriate practice is related to higher ratings of children's social skills ( $b = .08$ ;  $ES = .13$ -.14).

**Observed quality measures.** None of the classroom quality measures is significantly associated with teachers' spring ratings of social skills or behavior problems.

These analyses of classroom quality measures suggest that Head Start classrooms are more likely to score higher on aspects of Teaching and Interactions than on Instructional Support or provision of resources for learning. Teacher credentials are improving over time, and most teachers feel that they work in a supportive management climate. Teacher education and experience may be indirectly related to observed quality, through associations with teacher-reported satisfaction and endorsement of developmentally appropriate practice. Finally,

there is a non-linear relationship between scores on the CLASS Language Modeling dimension and children's spring PPVT-4 scores, such that scores increase more strongly above a threshold of 2 to 2.5 on the 7 point scale. Further analyses of quality thresholds in relation to children's outcomes are underway through related projects.

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## NOTES

<sup>1</sup> Migrant and Seasonal Worker programs (MSHS), American Indian and Alaska Native (AI/AN) programs, programs in Puerto Rico and other U.S. territories, and programs not directly providing services to 3-, 4-, and 5-year-olds (such as Early Head Start) were excluded from the frame. The Office of Head Start provided information about any defunded (or soon-to-be defunded) programs before sampling and these programs were then deleted from the sample frame. Thirteen programs affected by Hurricanes Katrina and Rita in August 2005 were unable to provide information for the 2004–2005 PIR data and thus were not eligible for sample selection.

<sup>2</sup> Children who were 3 years old and attending their first year of Head Start were sampled at a higher rate to ensure comparable sample sizes between 3-year-olds and 4-year-olds at the end of the kindergarten year, given the longer follow-up time for this younger group.

<sup>3</sup> Children who were no longer enrolled in the program where they were sampled in fall 2006 and who were not enrolled in one of the other FACES 2006 programs were not included in the spring 2007 data collection.

<sup>4</sup> Parents who were not interviewed in person during the week-long visit were interviewed by phone, either before or after site visits. About 44 percent of the parent interviews were conducted in person.

<sup>5</sup> About 80 percent of the teacher rating forms were completed using the Web instrument.

<sup>6</sup> This total represents 88 percent of the children who were sampled and eligible for the fall 2006 baseline data collection.

<sup>7</sup> These are all weighted marginal response rates, not accounting for prior stages of sampling and participation. The cumulative weighted response rates, which take into account the response rate for prior stages of the sample (such as, program, center, and child response rates), as well as fall 2006 consent rates, are by definition lower. The cumulative child response rate through spring 2007 is 81 percent. The corresponding response rates associated with completing the child assessments, parent interviews, and teacher

ratings in spring 2007 are 78 percent, 79 percent, and 78 percent, respectively. At the teacher level, among participating classes, the marginal weighted response rate for the teacher interview was 98 percent. At the child level, among children whose parents gave consent, the rate for child assessments was 96 percent, the rate for parent interviews was 96 percent, and the rate for teacher-child reports was 95 percent.

<sup>8</sup> The cumulative teacher interview response rate is 92 percent.

<sup>9</sup> This represents 100 percent of the classrooms that were selected for observation. The cumulative response rate for the observations, which takes into account nonresponse at the program level, was 92 percent. Due to the smaller-than-expected classroom sizes encountered when selecting the FACES 2006 sample in the fall, we selected more classrooms than anticipated, and decided to subsample classrooms for observation. When two of a teacher's classes were in our sample, we randomly subsampled either the morning or afternoon session for observation. Analysis weights that include classroom observations were adjusted to account for the subsampling of classrooms. The classroom observation sample included 350 of the 390 eligible classrooms (90 percent). To be eligible for observation, the classroom must meet three criteria: (1) it must be a classroom in a center-based program (home-based services were not observed); (2) it must be one of the originally sampled classrooms (classrooms that children moved to in the spring were not eligible); and (3) it must have at least two sampled, eligible children whose parents gave consent.

<sup>10</sup> The screening process and cognitive assessment measures are described in the section of this brief that describes children's cognitive outcomes.

<sup>11</sup> The preferred respondent for the spring interview was the child's biological mother or the fall 2006 respondent. Ninety-two percent of the spring interviews were completed by the same respondent who had been interviewed in the fall (and 89 percent were the child's biological mother). For 3 percent of the children, the first parent interview was completed in the spring; 97 percent completed the first parent interview in the fall.

<sup>12</sup> See Hulsey et al. 2010 for the statistics found in this report.

<sup>13</sup> Weights are used to compensate for the differential probabilities of selection at the sampling stage (for example, 3-year-olds were sampled at a higher rate than 4-year-olds) and to adjust for the effects of nonresponse.

<sup>14</sup> Information on the characteristics of children and their families in fall 2006 can be found in *Beginning Head Start: Children, Families and Programs in Fall 2006* (Tarullo et al., 2008).

<sup>15</sup> The percentages presented in this section apply only to children whose mothers and/or fathers live with them.

<sup>16</sup> The federal poverty threshold for a family of four was \$20,000 in 2006.

<sup>17</sup> Includes both biological and adoptive parents.

<sup>18</sup> FACES uses the term dual language learners or DLLs to describe these children.

<sup>19</sup> Croninger and Lee 2001; Pallas, Natriello and McDill 1989; Rathbun and West 2004; Zill and West 2001.

<sup>20</sup> Downey, von Hippel, and Broh 2004; Rathbun and West 2004; West, Denton, and Reaney 2001.

<sup>21</sup> These questions were not asked in the fall.

<sup>22</sup> These questions were not asked in the fall.

<sup>23</sup> See Hulsey et al. 2010 for the mean spring 2007 scores for all children across measures, regardless of language of assessment, child performance, or availability of valid scores in fall 2006.

<sup>24</sup> We are unable to provide information on changes in the skills of children who changed their language of assessment between the fall and spring, as these children receive different assessment measures at each wave.

<sup>25</sup> All children, regardless of home language or performance on the Pre-LAS, received the English receptive vocabulary measure, the PPVT-4. The TVIP is the Spanish language version of the PPVT-4 and was used with children whose primary home language was Spanish, regardless of performance on the Pre-LAS. Thus, children whose parents spoke Spanish to them at home received the receptive

vocabulary component of the battery in English (PPVT-4) as well as in Spanish (TVIP).

<sup>26</sup> The English assessment used the Woodcock-Johnson III subtests and the Spanish assessment used the Bateria III Woodcock-Muñoz subtests.

<sup>27</sup> For the purposes of the direct assessment, home language was based on information provided on parent consent forms.

<sup>28</sup> Some children were administered the cognitive assessments in Spanish (or not at all) in fall 2006 and then in English in spring 2007. Similarly, some children were unable to achieve a basal on the PPVT-4 in the fall but were able to by the spring. Data in this section reflect the performance of children assessed in English in both fall 2006 and spring 2007. In addition, mean scores are only reported for those with valid scores at both occasions (for example, those who established a basal on the PPVT-4 at both waves). See Hulsey et al. 2010 for the mean scores for all children assessed in spring 2007, regardless of language of assessment, child performance, or availability of valid scores in the fall. In this set of tables, children's mean spring 2007 scores are slightly lower (for example, 1 to 2 standard score points lower). Variability in children's scores is comparable for both sets of scores.

<sup>29</sup> Cross-cohort comparisons only include children in FACES 2003 and 2006, because in earlier cohorts, 3-year-old children were not assessed in all areas. In addition, Woodcock-Johnson scores in FACES 2000 were drawn from the Woodcock-Johnson Psycho-Educational Battery-Revised edition (W-J R). Woodcock-Johnson scores in FACES 2003 were drawn from a hybrid version of the W-J R and the Woodcock-Johnson Psycho-Educational Battery-Third edition (W-J III). This allows for estimation of children's scores based on either the norms for the W-J R or W-J III. FACES 2006 used the W-J III.

<sup>30</sup> All analyses of the W-J III scores are based on original calculations using the FACES 2003 data.

<sup>31</sup> PPVT scores in FACES 2003 were drawn from the Peabody Picture Vocabulary Test-Third edition (PPVT-III). FACES 2006 used the PPVT-4.

<sup>32</sup> Measures of criterion-referenced performance include raw and W- or IRT-based

scores. W scores allow for measurement of change or growth in performance on the same scale over time. Like raw scores, W scores are an indicator of absolute rather than relative performance. W scores are available for the WJ-III and PPVT-4. Story and Print Concepts scores are scaled to reflect the number of items answered correctly. ECLS-B math items are also scaled to reflect the number of items answered correctly or the percentage of children demonstrating mastery of skills or skill sets.

<sup>33</sup> This score is a proficiency probability score and indicates the probability that a child would have passed the proficiency level. It can be interpreted as the percentage of the population who have "mastered" this skill or skill set (for example,  $.30 \times 100 = 30$  percent of Head Start children are able to demonstrate these skills at the start of the program year). These scores can take on any value from zero to one.

<sup>34</sup> The ECLS-B preschool wave was intended to assess children in the fall, when most children would be about 48 through 57 months of age. However, the age at time of testing in the ECLS-B preschool wave ranged from approximately 3 years, 8 months to 5 years, 5 months (Chernoff et al. 2007). On average the FACES children in the fall 2006 round were assessed earlier in the program year than the ECLS-B sample, and their ages ranged from approximately 2 years, 7 months to 5 years, 8 months. Conversely, FACES children in the spring 2007 round were assessed later, with ages ranging from 3 years, 3 months to 6 years, 3 months.

<sup>35</sup> Number of family risks is based on three family characteristics: whether the child resides in a single parent household, whether the household income is below the poverty threshold, and whether the mother has less than a high school diploma.

<sup>36</sup> See Hulseley et al. 2010 for tables that provide comparative scores for children assessed in English at both waves, Spanish at both waves, and who moved from fall to spring from a Spanish assessment to an English assessment.

<sup>37</sup> Although scores on the W-M III subtests were scaled to be comparable with the W-J III, early items on the Letter-Word Identification subtests suggest differences in the demands required of children. Specifically, children who are administered the W-M III are required to provide verbal responses earlier in the

assessment than those administered the W-J III, suggesting less "warm up" time and greater demands of these children.

<sup>38</sup> Similar declines in hyperactive behavior were not found in FACES 2003.

<sup>39</sup> Reported problem behavior and hyperactive scores in FACES 2006 were constructed using different items from those reported in prior cohorts.

<sup>40</sup> Significant fall-spring declines were found in teacher-rated withdrawn behavior in FACES 2003.

<sup>41</sup> Body Mass Index (BMI) is the ratio of an individual's weight to height and can be used as an indicator of overweight and obese status. Calculation of BMI is specific to gender and age.

<sup>42</sup> The Centers for Disease Control and Prevention (CDC) sets the criterion of *overweight* as being when the child's BMI score is from the 85th to 94th percentile for their age and gender, and of *obese* as being when the child's BMI is at or above the 95th percentile. In previous FACES reports, the two categories have been labeled as *at risk of overweight* and *overweight*, respectively.

<sup>43</sup> Classrooms observations were completed by trained observers. Observers were trained and certified after meeting reliability standards showing proficiency to administer each instrument. Reliability was defined as being within 1 point of the gold standard on the scale or dimension score at least 80 percent of the time. Observers not meeting 80 percent reliability were given a provisional pass and the opportunity to test their reliability in the field with a gold standard group leader. Thirty-six of the 37 interviewer/gold standard pairs were in agreement at least 80 percent of the time on the ECERS-R, and 89 percent of the interviewer/gold standard scores were within one point of each other on the on the CLASS. To minimize observer drift, up to two quality assurance visits (that is, paired observations) were conducted during the field period. If there was a discrepancy between observer and gold standard, we used the gold standard score.

<sup>44</sup> Concept Development refers to teachers' use of instructional discussions and activities to promote higher-order thinking in contrast to rote instruction. Quality of Feedback refers to the degree to which the teacher provides feedback that expands learning and understanding and encourages participation. Language Modeling

refers to the quality and amount of teachers' use of language-stimulating and language-facilitation techniques.

<sup>45</sup> ECERS-R subscale scores reported in this section reflect the specification of subscales that have been reported in earlier cohorts of FACES. In some instances, these specifications do not match those of the publishers.

<sup>46</sup> Although an alternative specification for classroom quality, these scores allow us to compare with other recent studies of classroom quality that have reported scores for the short form of the ECERS-R (for example, the National Center for Early Development and Learning [NCELD] Study of Prekindergarten).

<sup>47</sup> Reported scores for FACES 2000 and 2003 are unweighted, while those for FACES 2006 are weighted. All analyses are based on original calculations using the FACES 2000, 2003, and 2006 data.

<sup>48</sup> Although the CLASS Instructional Support domain was piloted in FACES 2003, it was used as part of the observation protocol for the first time in FACES 2006. The measure was added to provide information on the quality of the instructional environment. Comparative data with earlier cohorts is not available.

<sup>49</sup> In spring 2008, the classroom observation protocol was changed in order to study the feasibility of training, certification, field administration, and quality assurance procedures on the full CLASS in a large sample of programs. All three domains from the CLASS were assessed, while the ECERS-R and Arnett were not used. A sample of 147 classes attended by FACES 2006 children (4-year-olds attending a second year of Head Start) was observed. The spring observation sample was not designed to support national estimates of Head Start classrooms. Instead, the goal was to learn as much as possible about what is required to prepare for and conduct the full CLASS in Head Start classrooms. Preliminary analyses of these data suggest higher average scores on the CLASS Instructional Support domain when used with the full scale in spring 2008 as compared to when used in isolation in spring 2007.

<sup>50</sup> Correlation coefficients (b) and effect sizes (ES) are presented for significant findings. The effect size reported in this section shows the standardized mean difference in the dependent variable between two groups for a binary

independent variable, or the standardized association between a continuous independent variable and the dependent variable (that is, one standard deviation change in the independent variable is related to some percentage of a standard deviation change in the dependent variable).

<sup>51</sup> The analyses are weighted at the child, classroom, and program levels in the HLM models. The child-level data are weighted to represent all children entering Head Start for the first time in fall 2006 and who were still enrolled in the program in spring 2007. The classroom-level data are weighted to represent all classrooms that were serving these children in spring 2007. The program-level data are weighted to represent all programs that were providing direct services to these children in spring 2007, excluding MSHS programs, AI/AN programs, and other exclusions listed in note 1.

<sup>52</sup> Children whose teachers had a BA were not significantly different in progress than those whose teachers had high school or less education,

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