

The Early Childhood Longitudinal Study, Kindergarten  
Class of 2022-23 (ECLS-K:2023) Preschool Children's  
Parents Focus Groups

**Attachments 2 D**

**Protocol Materials – ECLS Reports**

OMB #1850-0803 v.246

Submitted by  
National Center for Education Statistics  
U.S. Department of Education

February 2019



# Primary Early Care and Education Arrangements and Achievement at Kindergarten Entry

# EXECUTIVE SUMMARY

Young children experience various types of early care and education environments the year before they enter kindergarten. Some children attend center-based arrangements such as preschools, childcare centers, or Head Start programs, while others are cared for in relatives' or nonrelatives' homes or are normally cared for only by their parents (Denton and Germino Hausken 2000; Snyder and Dillow 2016). Prior research indicates that children's participation rates in specific types of primary care arrangements and their knowledge and skills at kindergarten entry differ in relation to certain characteristics of children and their families, including age at kindergarten entry, race/ethnicity, primary home language, and mother's educational attainment (Denton and Germino Hausken 2000; Mulligan, Hastedt, and McCarroll 2012). Earlier research also finds evidence of positive associations between participation in early care and education (ECE) arrangements and academic skills around the time that children begin kindergarten (Bradley and Vandell 2007; Denton Flanagan and McPhee 2009; Magnuson et al. 2004; NICHD Early Child Care Research Network 2002).

This Statistical Analysis Report builds upon prior work by using the most recently available data to explore relationships between children's primary care and education arrangements the year before kindergarten and their academic skills and learning behaviors at kindergarten entry, after accounting for child and family background characteristics. In the report, ECE arrangements are classified into five groups: (1) center-based care (including day care centers, Head Start programs, preschools, prekindergartens, and other early childhood programs), (2) home-based relative care, (3) home-based nonrelative care, (4) multiple arrangements (i.e., children who spent an equal amount of time in each of two or more types of arrangements), and (5) no ECE arrangement on a regular basis (i.e., children who had no regularly scheduled care arrangement and mainly received care only from their parents). Information for this report comes from the nationally representative National Household Education Surveys Program (NHES) and the Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011) data collections.

Data from the NHES cross-sectional sample survey are used to describe trends in participation in ECE arrangements that children experience prior to kindergarten entry. The NHES Early Childhood Program Participation (ECPP) surveys gather information on children's participation in ECE programs and the characteristics of these arrangements. Parents reported information on their child's participation in different types of ECE arrangements in 1995, 2001, 2005, and 2012. This report compares estimates of 4- and 5-year-old children's primary ECE arrangements prior to kindergarten entry in 1995 and 2012. Estimates are presented overall and by children's race/ethnicity, their family's poverty status, and their mother's educational attainment.

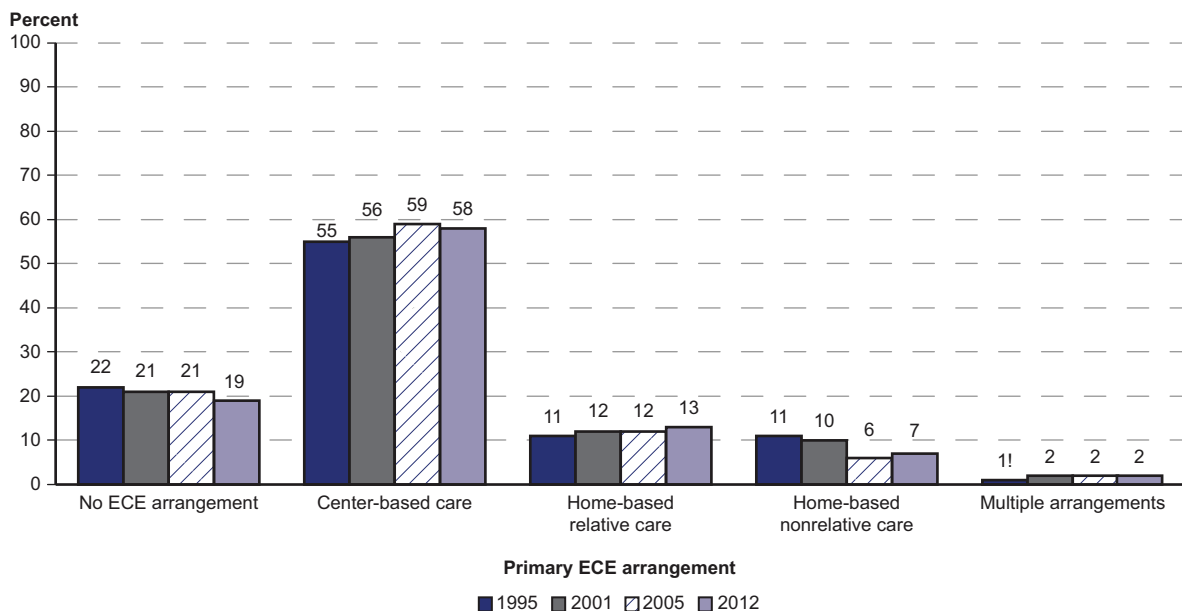
Data from the ECLS-K:2011 longitudinal sample survey are used to explore relationships between primary ECE arrangements the year before kindergarten and academic skills and learning behaviors at kindergarten entry. The ECLS-K:2011 collects detailed information on the school achievement and experiences of students from the 2010–11 kindergarten school year through the spring of 2016, when most of them are expected to be in fifth grade. In the fall of 2010 and spring of 2011, parents reported information on child and family characteristics and their child's participation in ECE settings the year before kindergarten; children were assessed in reading, mathematics, and cognitive flexibility; and kindergarten teachers reported on children's approaches to learning. The report describes the distribution of primary ECE arrangements that first-time kindergartners attended in the year before entering kindergarten in the fall of 2010,

including differences in primary ECE arrangements by characteristics of children and their families. The report also describes differences in first-time kindergartners' academic knowledge, skills, and learning behaviors at kindergarten entry relative to their primary ECE arrangement, after accounting for children's sex, age at kindergarten entry, race/ethnicity, family type, primary home language, and socioeconomic status (SES).

All comparisons of estimates were tested for statistical significance using Student's *t* test and ordinary least squares (OLS) regression, and all differences cited are statistically significant at the  $p < .05$  level. No adjustments were made for multiple comparisons.

## ***Did participation in different types of primary ECE arrangements for children ages 4 and 5 years old who were not yet enrolled in kindergarten in 2012 change compared with 1995?***

**Figure A. Percentage distribution of children ages 4 and 5 years old who were not yet enrolled in kindergarten, by primary early care and education (ECE) arrangement: Selected years, 1995 through 2012**



! Interpret data with caution. The coefficient of variation (CV) for this estimate is between 30 and 50 percent.

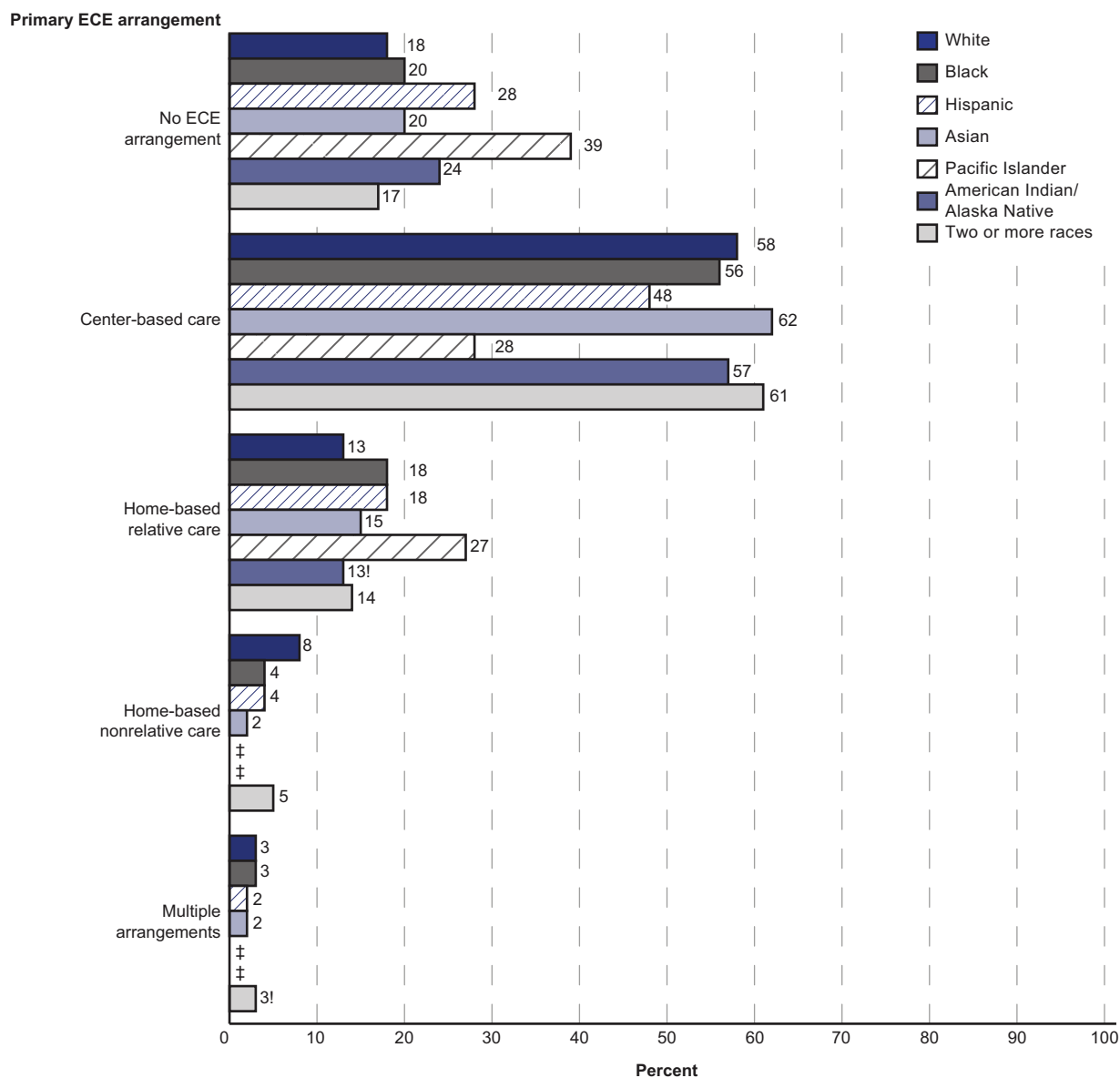
NOTE: A child's "primary arrangement" was defined as the regular nonparental care arrangement or early childhood education program in which the child spent the most time per week. "No ECE arrangement" refers to children who did not attend any ECE arrangement on a regular basis. Center-based arrangements include day care centers, Head Start programs, preschools, prekindergartens, and other early childhood arrangements. "Multiple arrangements" refers to children who spent an equal amount of time in each of two or more types of arrangements. Detail may not sum to totals because of rounding.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Program Participation Survey of the National Household Education Surveys Program (ECP-P-NHES:1995, 2001, 2005, and 2012).

Based on information from the NHES, the overall percentage of children ages 4 and 5 years old who attended center-based care as their primary ECE arrangement before kindergarten entry was higher in 2012 than in 1995 (58 vs. 55 percent), while the percentage of children who primarily received home-based nonrelative care as their primary ECE arrangement was lower in 2012 than in 1995 (7 vs. 11 percent, figure A and table A-1). The overall percentages of children receiving home-based relative care as their primary ECE arrangement (13 percent) and those with no ECE arrangement on a regular basis (19 percent) in 2012 were not measurably different from the percentages in 1995.

## Did participation in different types of primary ECE arrangements for fall 2010 first-time kindergartners in the year before entering kindergarten vary by child and family characteristics?

Figure B. Percentage distribution of first-time kindergartners, by primary type of early care and education (ECE) arrangement prior to kindergarten entry and child's race/ethnicity: Fall 2010



! Interpret data with caution. The coefficient of variation (CV) for this estimate is between 30 and 50 percent.

‡ Reporting standards not met (too few cases for a reliable estimate).

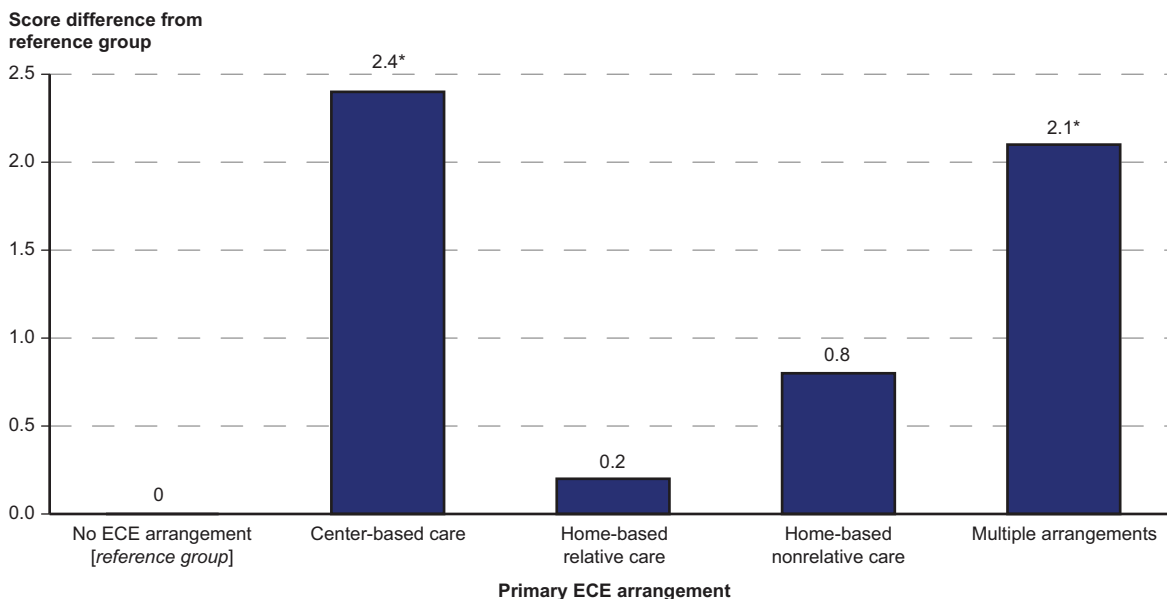
NOTE: Estimates weighted by W1\_2P0. Estimates pertain to a sample of children who were enrolled in kindergarten for the first time in the 2010–11 school year. Primary type of child care arrangement refers to the type of nonparental care in which the child spent the most hours. "No ECE arrangement" refers to children who did not attend any ECE arrangement on a regular basis. Center-based arrangements include day care centers, Head Start programs, preschools, prekindergartens, and other early childhood arrangements. "Multiple arrangements" refers to children who spent an equal amount of time in each of two or more types of arrangements. Race categories exclude persons of Hispanic ethnicity. Detail may not sum to totals because of rounding and survey item nonresponse. SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), Kindergarten–First Grade Restricted-Use Data File.

Based on information from the ECLS-K:2011, the percentages of fall 2010 first-time kindergartners with various primary ECE arrangements the year before kindergarten differed by race/ethnicity, SES, family type, and primary home language (figures B and 4, and table A-2). For instance, the percentages of first-time kindergartners who received center-based care as their primary ECE arrangement the year before kindergarten were lower for Hispanics (48 percent) and Pacific Islanders (28 percent) than for Whites (58 percent), Blacks (56 percent), Asians (62 percent), American Indians/Alaska Natives (57 percent), and kindergartners of Two or more races (61 percent). In addition, about 36 percent of kindergartners from households that spoke a language other than English as their primary language had no ECE arrangement on a regular basis the year before kindergarten, compared with 18 percent of kindergartners whose primary home language was English.

### ***Were differences in first-time kindergartners' academic skills and learning behaviors in the fall of kindergarten related to their primary ECE arrangement the year before kindergarten, after accounting for characteristics of kindergartners and their families?***

Using information from the ECLS-K:2011, academic skills and learning behavior scores of fall 2010 first-time kindergartners at kindergarten entry were compared with respect to students' primary ECE arrangements the year before kindergarten. In general, after accounting for characteristics of kindergartners and their families, academic skill and learning behavior scores were lower for those who did not attend any ECE arrangement on a regular basis and for those who primarily attended home-based relative care than for those who primarily attended center-based care and those who attended multiple ECE arrangements for equal amounts of time.

**Figure C. Adjusted fall kindergarten reading score difference, by primary early care and education (ECE) arrangement prior to kindergarten entry: Fall 2010**



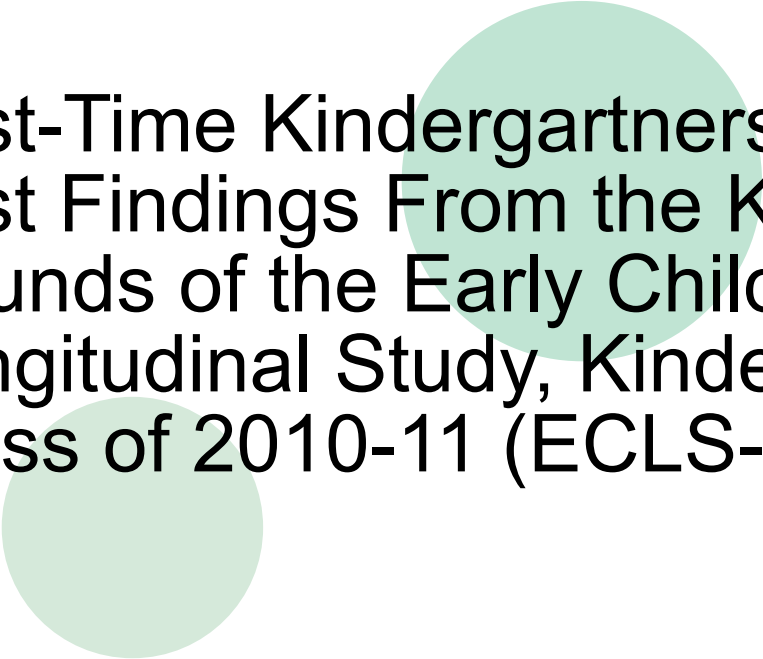
\*  $p < 0.05$ .

NOTE: The reading score reflects performance on questions measuring basic skills (print familiarity, letter recognition, beginning and ending sounds, rhyming words, and word recognition), vocabulary knowledge, and reading comprehension (including locate/recall questions, integrate/interpret questions, and critique/evaluate questions about text the children were asked to read). Actual scores for all kindergartners range from 6 to 83. Primary ECE arrangement refers to the type of nonparental care in which the child spent the most hours. "No ECE arrangement" refers to children who did not attend any ECE arrangement on a regular basis. Center-based arrangements include day care centers, Head Start programs, preschools, prekindergartens, and other early childhood arrangements. "Multiple arrangements" refers to children who spent an equal amount of time in each of two or more arrangements. Estimates weighted by W1\_2P0. Estimates pertain to a sample of children who were enrolled in kindergarten for the first time in the 2010–11 school year.

SOURCE: U.S. Department of Education, National Center for Education Statistics, Early Childhood Longitudinal Study, Kindergarten Class of 2010–11 (ECLS-K:2011), Kindergarten–First Grade Restricted-Use Data File.

After accounting for children's sex, age at kindergarten entry, race/ethnicity, family type, primary home language, and SES, the following findings were observed:

- Fall kindergarten reading scores were lower, on average, for children who had no regular ECE arrangements the year before kindergarten and for those whose primary ECE arrangements were home-based relative care or nonrelative care than for children whose primary ECE arrangements were center-based care or multiple care arrangements for equal amounts of time (figure C, tables 1, A-4, and A-5).
- Fall kindergarten mathematics scores were lower, on average, for children who had no regular ECE arrangements the year before kindergarten than for children who attended any type of ECE arrangement (figure 6, table 1). In addition, children who were primarily in home-based relative care also scored lower in mathematics than children who were primarily in home-based nonrelative care, center-based care, or multiple care arrangements for equal amounts of time (table A-4).
- Fall kindergarten cognitive flexibility scores were lower, on average, for children who had no regular ECE arrangements the year before kindergarten and for those whose primary arrangements were home-based relative care than for children who primarily attended center-based care (figure 7, tables 1 and A-4). In addition, children who had no regular ECE arrangements also scored lower in cognitive flexibility than children who were primarily in multiple care arrangements for equal amounts of time. To measure cognitive flexibility, a component of executive functioning, children were administered the Dimensional Change Card Sort (DCCS), in which they were asked to sort a series of cards into one of two trays according to different rules (e.g., by color, by shape).
- Fall kindergarten approaches to learning ratings were lower, on average, for children who had no regular ECE arrangements the year before kindergarten than for those who were primarily in home-based nonrelative care, center-based care, or multiple care arrangements for equal amounts of time (figure 8, table 1). For the approaches to learning measure, teachers reported on how students rated in seven areas: attentiveness, task persistence, eagerness to learn, learning independence, flexibility, organization, and ability to follow classroom rules, with higher scores indicating that a child exhibits positive learning behaviors more often.



# First-Time Kindergartners in 2010-11: First Findings From the Kindergarten Rounds of the Early Childhood Longitudinal Study, Kindergarten Class of 2010-11 (ECLS-K:2011)



## Selected Findings

---

### **Demographic Characteristics of First-Time Kindergartners in 2010-11 (table 1)**

- Most of the 3.5 million first-time kindergarten students in the cohort were born prior to September 2005 (7 percent of the cohort was born in September 2005 or later), meaning that most of these kindergartners were 5 years of age or older at the start of the school year.
- Fifty-three percent of these first-time kindergartners were White, 24 percent were Hispanic, 13 percent were Black, 4 percent were Asian, 4 percent were two or more races, 1 percent were American Indian or Alaska Native, and less than 0.5 percent were Native Hawaiian or other Pacific Islander.
- Students living in households with incomes below the federal poverty level made up 25 percent of these first-time kindergartners. Thirty-eight percent had parents whose highest level of education was a bachelor's degree or higher, and 76 percent started kindergarten living in a two-parent household. Eighty-four percent of first-time kindergartners lived in a home with English as the primary language.

### **Early Reading and Math Skills and Knowledge of First-Time Kindergartners at Kindergarten Entry (table 2)**

- On average, the group of first-time kindergarten students born from January 2004 through August 2004 scored higher on the math assessment than all other age groups; they also scored higher on average on the reading assessment than did all but one of the other age groups (the group born from September through December 2004). In addition, the two groups of first-time kindergartners born from September 2004 through April 2005 (those born September-December 2004, and those born January-April 2005) both scored higher in reading and math than did kindergartners in any of the three groups born in May 2005 or later (those born May-August 2005, those born September-December 2005, and those born after December 2005).
- Asian first-time kindergartners had higher reading and math scores than first-time kindergartners of other race/ethnicities. White first-time kindergartners had higher reading and math scores than Black, Hispanic, Native Hawaiian/Pacific Islander, and American Indian/Alaska Native students. Black students scored higher than Hispanic students on the reading assessment. Students of two or more races scored higher than Black, Hispanic, and American Indian/Alaska Native students on both assessments and higher than Native Hawaiian/Pacific Islander students on the reading assessment. Native Hawaiian/Pacific Islanders had higher math scores than Hispanics.
- Scores on reading and math were lowest for first-time kindergartners in households with incomes below the federal poverty level and highest for those in households with incomes at or above 200 percent of the federal poverty level.
- For both reading and math, assessment scores increased with parental education level.
- Students in households with two parents had higher reading and math scores than those in households of different structures.
- First-time kindergartners with a primary home language of English scored higher in reading and math than those coming from homes with a primary home language other than English.
- First-time kindergartners attending private school had higher reading and math scores than those attending public school.

**Body Mass Index (BMI) of First-Time Kindergartners at Kindergarten Entry (table 3)**

- Asian students in kindergarten for the first time had a lower BMI than children of other race/ethnicities except for Whites. White kindergartners had a lower BMI than kindergartners of Hispanic, Native Hawaiian/Pacific Islander, and American Indian/Alaska Native origins.
- First-time kindergartners in households with an income below the federal poverty level had a higher BMI than those in households with an income of 200 percent or above.
- Kindergartners with parents whose highest level of education is a Bachelor's degree or higher had a lower BMI than those whose parents' highest level of education is a high school diploma/equivalent or lower.