



Access to High Quality Early Care and Education: Readiness and Opportunity Gaps in America

CEELO & NIEER POLICY REPORT

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Contents

List of Figures 2

Introduction 5

Achievement (school readiness) gaps at Kindergarten Entry in 2010 5

Care arrangements for children at age 2 10

Center-based education and care and its quality for children aged 4 16

Trends in public support of pre-K for children aged 3 and 4 24

Conclusions 26

ENDNOTES..... 28

References 29

List of Figures

Figure 1. Reading and Math Achievement at K-Entry by Income, 2010 6

Figure 2. Achievement Gaps at K-Entry for Children above and below 200% FPL, 2010 7

Figure 3. Achievement Gaps at K-Entry by Parental Education, 2010 8

Figure 4. Achievement Gaps at K-Entry by Ethnicity, 2010 9

Figure 5. Achievement Gaps at K-Entry by Language, 2010 9

Figure 6. Abilities of Children Entering Kindergarten by Gender, 2010..... 10

Figure 7. Care Arrangements at Age 2 by Type 11

Figure 8. Age 2 Care Arrangements by Type and Income..... 12

Figure 9. Age 2 Care Arrangements by Type for Families Above and Below 185% FPL 12

Figure 10. Age 2 Care Arrangements by Type and Race 13

Figure 11. Age 2 Care Arrangements by Type and Mother's Education 14

Figure 12. Age 2 Care Arrangements by Type and Home Language..... 14

Figure 13. Age 2 Care Arrangements by Type and Region..... 15

Figure 14. Center Enrollment and Quality (ECERS>5) by Income at Age 4, 2005 17

Figure 15. Center Enrollment and Quality by Low- and Higher-Income, 2005..... 17

Figure 16. Center Enrollment and Quality by Parental Education at Age 4, 2005..... 18

Figure 17. Center Enrollment and Quality by Race at Age 4, 2005..... 19

Figure 18. Center Enrollment and Quality by Region at Age 4, 2005 19

Figure 19. Center Enrollment and Quality by Locale at Age 4, 2005 20

Figure 20. Center Enrollment and Quality by Gender at Age 4, 2005 20

Figure 21. Levels of Center Quality by Income at Age 4, 2005 21

Figure 22. Levels of Center Quality by Low- and Higher-Income at Age 4, 2005 21

Figure 23. Levels of Center Quality by Race at Age 4, 2005 22

Figure 24. Levels of Center Quality by Gender at Age 4, 2005 23

Figure 25. Levels of Center Quality by Region at Age 4, 2005 23

Figure 26. Trends in Center-Based Enrollment at Ages 3 and 4 24

Figure 27. State Spending on Pre-K (Inflation Adjusted 2001-2002 to 2011-2012) 25

Figure 28. Spending Per Child by Source (Inflation-adjusted 2001-2002 to 2011-2012) 26

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Introduction

A substantial body of research establishes that high quality preschool education can enhance cognitive and social development with long-term benefits for later success in school, the economy, and society more broadly.ⁱ Such programs have been found to have particularly large benefits for children who are economically disadvantaged. Such children are found to have fallen behind their more advantaged peers in language and other abilities essential to school success prior to age 3, and the achievement gaps that receive so much attention on exams at 3rd grade and beyond are largely evident at kindergarten entry.ⁱⁱ Therefore, access to quality preschool education is one way in which greater equality of opportunity can be extended to children from minority and low-income families.

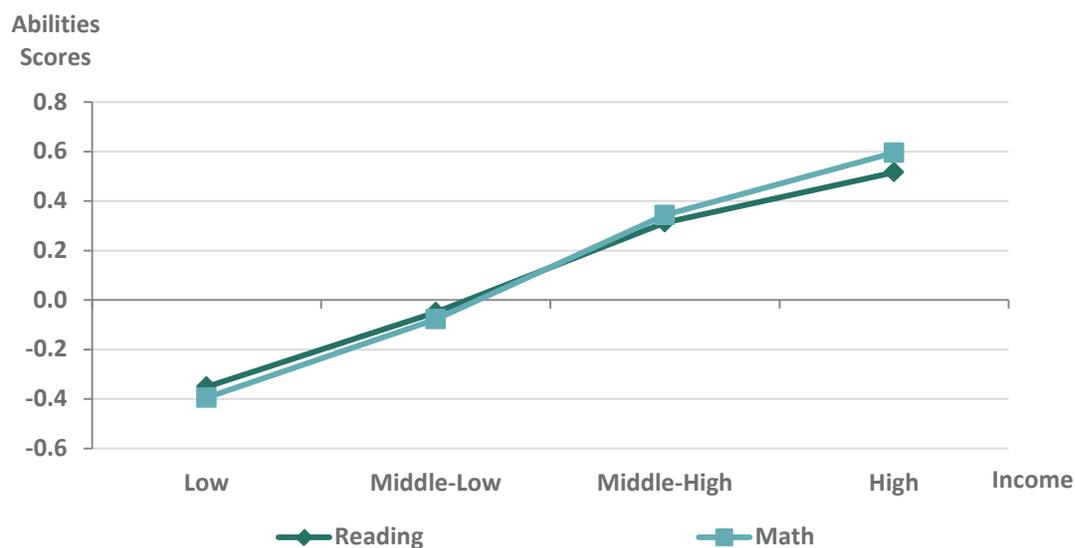
Unfortunately, our research on access to preschool in the United States finds that access--especially access to quality--is highly unequal despite the extent to which public policy at federal and state levels targets disadvantaged children. In part, this is because targeted programs too often are not high quality. Also, targeting is not as effective in reaching disadvantaged populations as policymakers naively assume. In addition, disparate and uneven state policies exacerbate inequalities. Inequality of opportunity for good early education is a particular concern for African American, Hispanic, and non-English-speaking children.

This brief is organized into four main sections. The first describes the “readiness gaps” at kindergarten entry as of 2010. The remaining sections examine the extent to which there are “opportunity gaps” in the early care and education services that may be associated with those readiness gaps. We begin with the care arrangements at age 2 and then examine early care and education arrangements for children aged 3 and 4. Finally, we turn to state pre-K policy and its impacts on enrollment, quality standards, and funding for children ages 3 and 4. The information presented is based on analyses of three main sources of data: the State of the Preschool seriesⁱⁱⁱ, the Early Childhood Longitudinal Study- Kindergarten Cohort 2010/11 (ECLS-K)^{iv} and the Early Childhood Longitudinal Study-Birth Cohort 2001 (ECLS-B).^v

Achievement (school readiness) gaps at Kindergarten Entry in 2010

We describe the school readiness abilities of children at kindergarten entry and important differences or *gaps* between groups at this critical stage in life with data from the Early Childhood Longitudinal Study Kindergarten Cohort of 2010-11 (ECLS-K).^{vi} We investigate Kindergarten entry gaps in the fall of 2010 in both reading and math. Figure 1 presents reading and math readiness by income quartiles (low= bottom 25%, middle-low=26th to 50th percentile, middle-high=51st to 75th percentile, and high=top 25% by income). To compare children to their peers, we use standardized test scores where the mean is zero and the standard deviation (SD) equals 1.

Figure 1. Reading and Math Achievement at K-Entry by Income, 2010



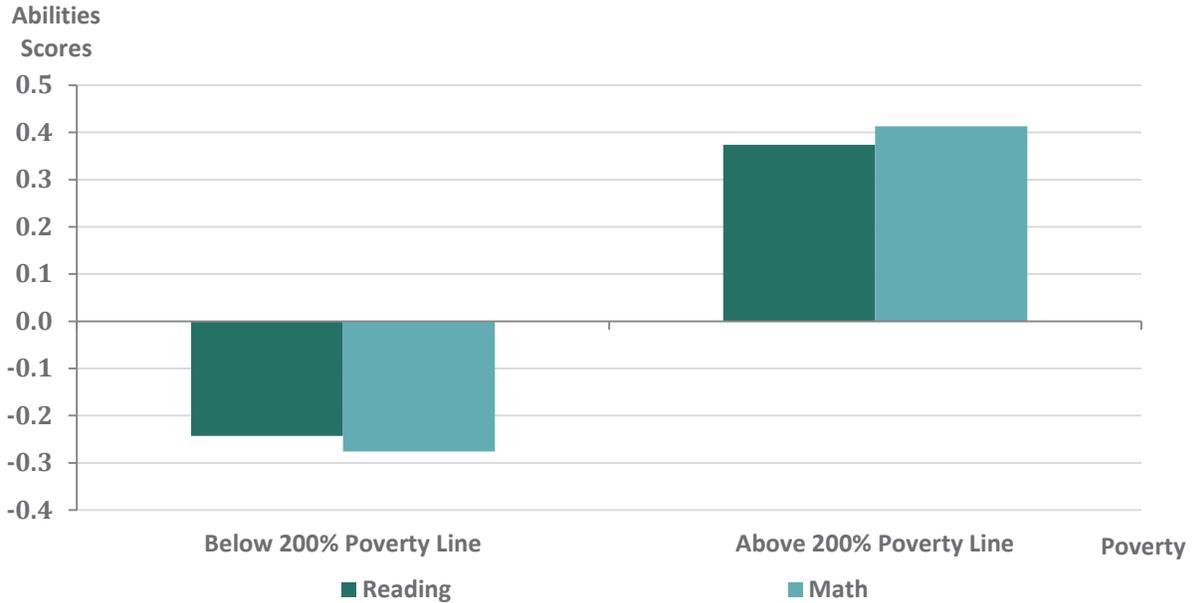
As can be seen in Figure 1, there is a continuous increase in scores across the full range of family income. The slope is slightly steeper for math than for reading, meaning that low-income children are somewhat farther behind the average and high-income children somewhat farther ahead of the average in math than in reading. However, in both math and reading readiness, children in the bottom income quartile are about .4 SD below the mean, while children in the top income quartile are about .4 SD above the mean. When we compare these gaps to earlier data, it is remarkable how little the gaps have changed since the last time academic readiness was measured for a national sample at kindergarten entry in 1998.^{vii}

With respect to income, the readiness gap is clearly best described as a continuous gradient that spans the entire distribution. This suggests that most American children, not just those in poverty, are not being fully prepared for academic success consistent with their potential. Figure 1 also makes it clear that the gap between the bottom and top income quartiles is quite large, nearly a full SD. This is equivalent to a difference of 20 months in age for a child entering kindergarten. Note, distribution of scores by income is adversely skewed so that the entire bottom half of the income distribution falls somewhat below the mean score. The drop in readiness between the top income quartile and the second quartile from the bottom (below median income but above poverty) is quite large.

Another way to look at the relationship between readiness and income is to compare children below and above 200 percent of the federal poverty line (FPL). Recent federal policy proposals to expand access to quality preschool education have used this cut-off for income eligibility. Nearly half of American children under 5 are in families below 200 percent of poverty. Figure 2 presents kindergarten readiness gaps in reading and math for children below and above 200 percent of FPL. The gap between these groups is .6 to .7 SD, with the larger difference in math. While most often attention has been

focused on the readiness gap associated with poverty, it is clear that the readiness gap for the much larger group of children below 200 percent of FPL is also quite serious.

Figure 2. Achievement Gaps at K-Entry for Children above and below 200% FPL, 2010



Income is not the only family background characteristic associated with an achievement or readiness gap at kindergarten entry. We also examined disparities in kindergarten readiness by level of parental education. The readiness gaps associated with parent education are shown in Figure 3 below. Children of parents with less than a college degree, but with some education or training beyond a high school diploma, score only slightly below the mean. Those whose parents dropped out of high school enter kindergarten .60-.65 SD below the mean (and almost 1 SD below children of college-educated parents). Children of parents with a high school degree also underperform, entering kindergarten almost .30 SD below the mean and with a gap of about .70 SD relative to children with college-educated parents. As the income advantage associated with a college degree has steadily increased over the years, it appears that the advantages college-educated parents can provide to their children in terms of readiness have increased.^{viii} As most young children do not have parents with a college degree, it is unfortunate that all other children begin school with scores below the mean. As with income, these gaps by education indicate considerable inequality at the starting line for formal education with little prospect for improvement, as income and education will continue to confer advantages on those children who enter kindergarten ahead.

Figure 3. Achievement Gaps at K-Entry by Parental Education, 2010

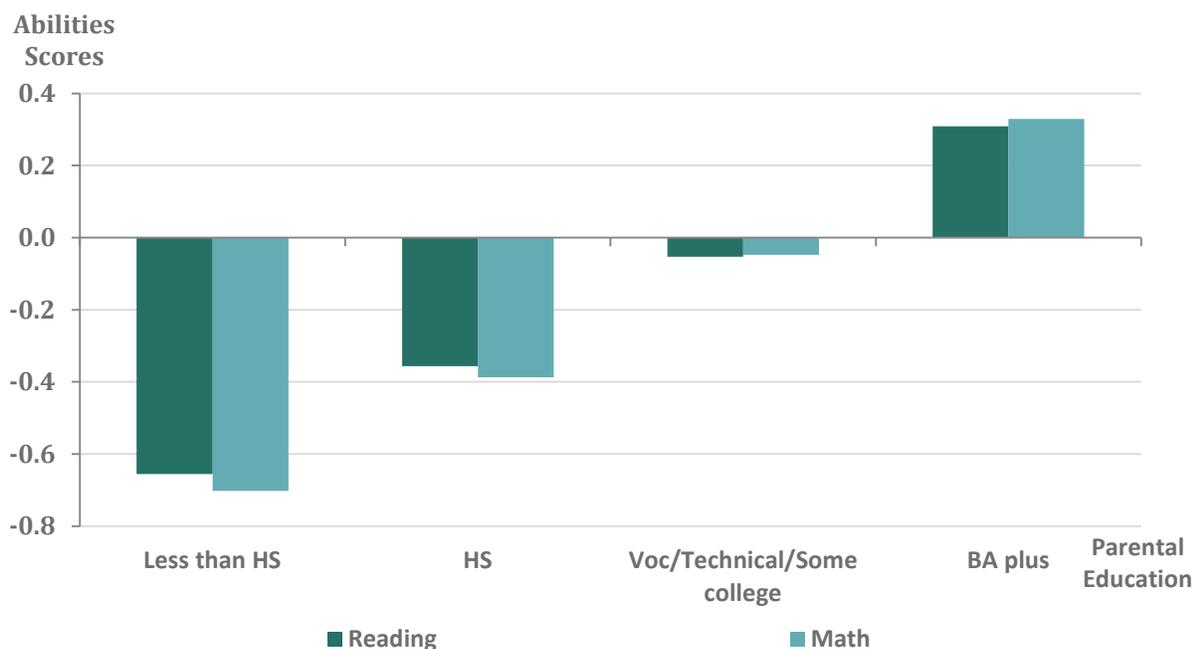


Figure 4, provides another view of inequality, by presenting reading and math readiness gaps at kindergarten entry for children of various ethnic backgrounds. As has been previously observed^{ix}, White non-Hispanic and, to an even greater extent, Asian children, start kindergarten with greater skills in reading and math than children of other ethnicities. African-American children enter kindergarten with a gap of .14 SD in reading and .31 SD in math below the mean; compared to their White peers at kindergarten entry they are .32 SD behind in reading and .55 SD behind in math. Note that the readiness gap is much worse for African- American children in math than in reading. Hispanic children start kindergarten even further behind on average, scoring below the mean by .37 SD in reading and .42 SD in math; compared to their White non-Hispanic peers they are behind .55 SD in reading and .66 SD in math. Pacific Islander and, to an even greater extent Native American, children also have substantial readiness gaps at kindergarten entry, though for these groups the gaps are larger in reading than in math. Differences in reading and math gaps by ethnic group have implications for early childhood programs. Head Start, for example, should seek to strengthen math education in programs serving a high percentage of African-American children, always keeping in mind the needs of each individual child, of course.

Figure 4. Achievement Gaps at K-Entry by Ethnicity, 2010

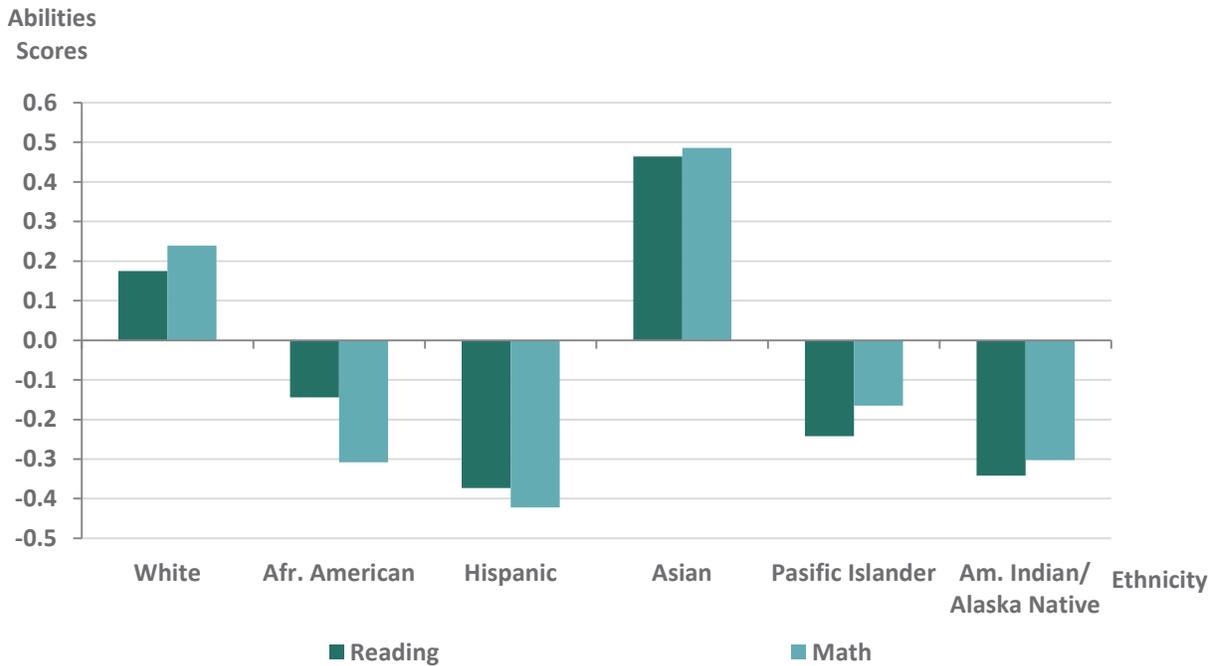
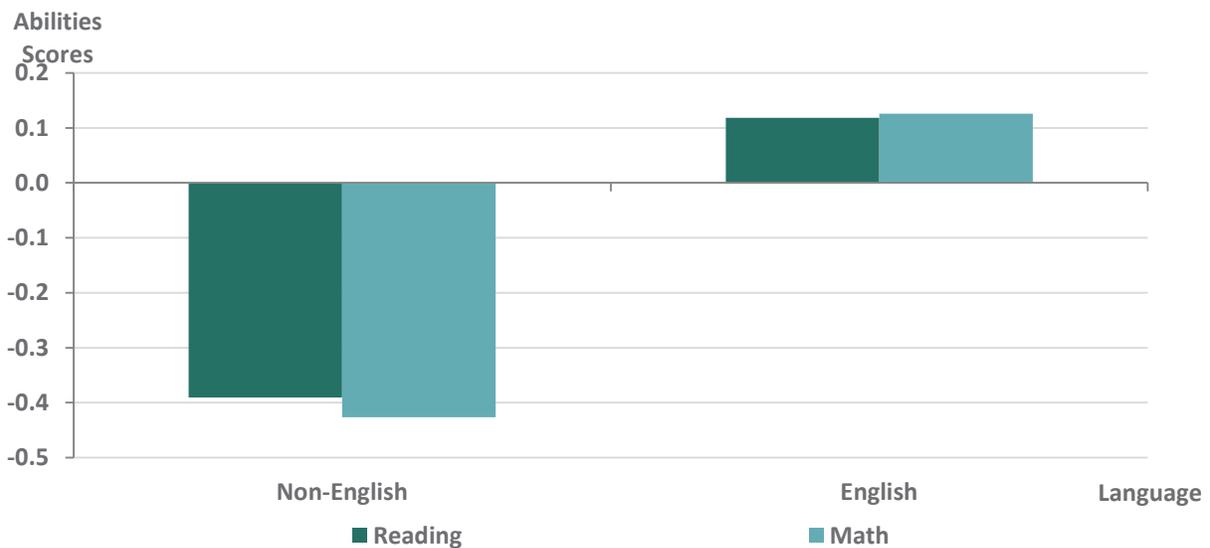


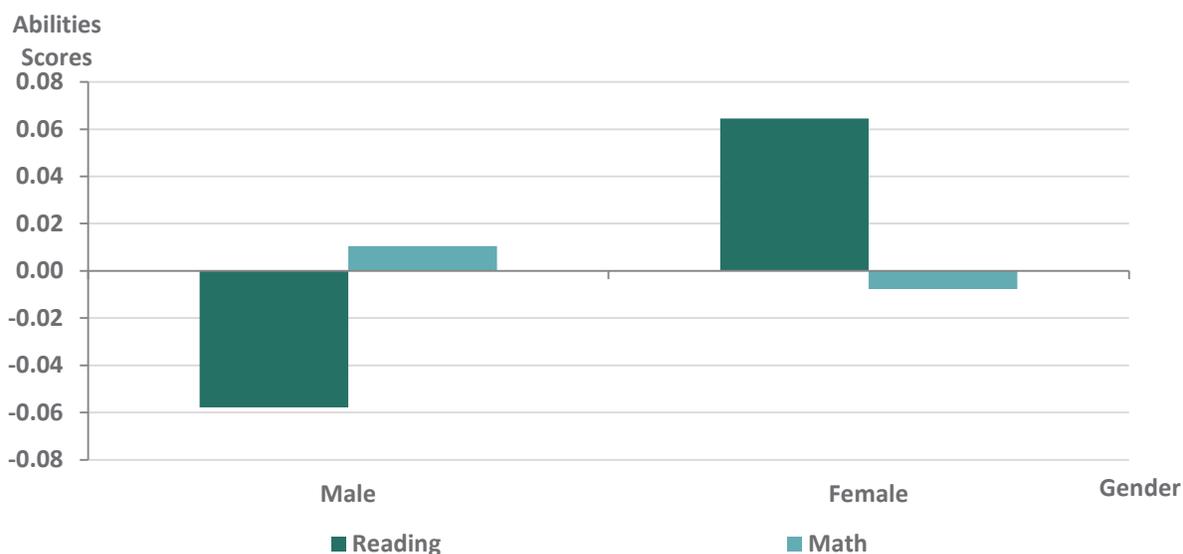
Figure 5 presents reading and math kindergarten entry gaps between children from non-English and English speaking homes. Non-English speakers perform about half a standard deviation below English speaking children in reading and math, with the readiness gap somewhat larger in math. This gap is slightly less than the overall Hispanic gap, but quite significant regardless.

Figure 5. Achievement Gaps at K-Entry by Language, 2010



Finally, we also examined kindergarten entry gaps by gender. As shown in Figure 6, these are relatively small, amounting to about .12 SD in reading in favor of girls, with a negligible difference in math.

Figure 6. Abilities of Children Entering Kindergarten by Gender, 2010



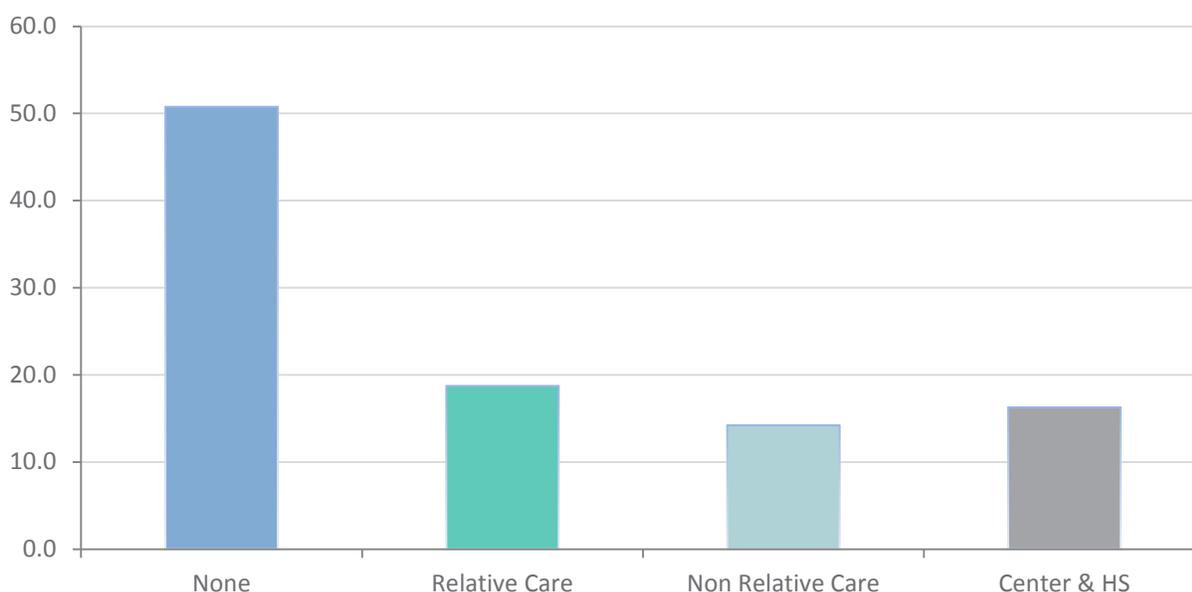
In sum, based on a recent survey of children at kindergarten entry (the ECLS-K 2010/2011) we find substantial disparities in children’s achievement, or academic readiness, in reading and math associated with family income, parental education, ethnicity, and language. These gaps are large, pervasive, and have changed little since the 1998 national survey. That gaps are largest in math, and are particularly large for some groups, such as African-American children, is especially troubling in light of research suggesting that readiness in math is a stronger predictor of later school success than is reading readiness.^x

Care arrangements for children at age 2

The gaps in cognitive abilities discussed above begin to become evident even in the first two years of life. Although this has much to do with experiences in the home, some children enter nonparental care at a very young age. Such arrangements have the potential to reduce the extent of these early gaps.^{xi} However, there are also concerns that the poor quality of the care arrangements many families access for their infants and toddlers may act to increased gaps.^{xii} To characterize the nonparental care and education arrangements of infants and toddlers, we rely on data from the Early Childhood Longitudinal Birth Cohort (ECLS-B) study for a national sample of two-year-olds in 2003.^{xiii}

The ECLS-B provides representative data for the United States on the use of both home-based (whether relative or non-relative) and center-based services including Early Head Start. Just about half (51 percent) of 2-year-olds were not in any type of regular nonparental care in 2003. As neither public policy nor maternal employment has changed much in the intervening years, we expect that the situation is much the same today. If anything, the Great Recession seems likely to have reduced participation of children under age 3 in nonparental care. As shown in Figure 7, those children in care at age 2 in 2003 were most often in homes, with 19 percent in relative care and 14 percent non-relative home care. The remaining 16 percent were in center-based programs including Early Head Start. Early Head Start has received substantial increases in funding since 2003, but still served only 176,000 children birth to age 3 in 2012 (1 percent of the population). Clearly, relatively few 2-year-olds (and even fewer younger children) are in center-based care.

Figure 7. Care Arrangements at Age 2 by Type

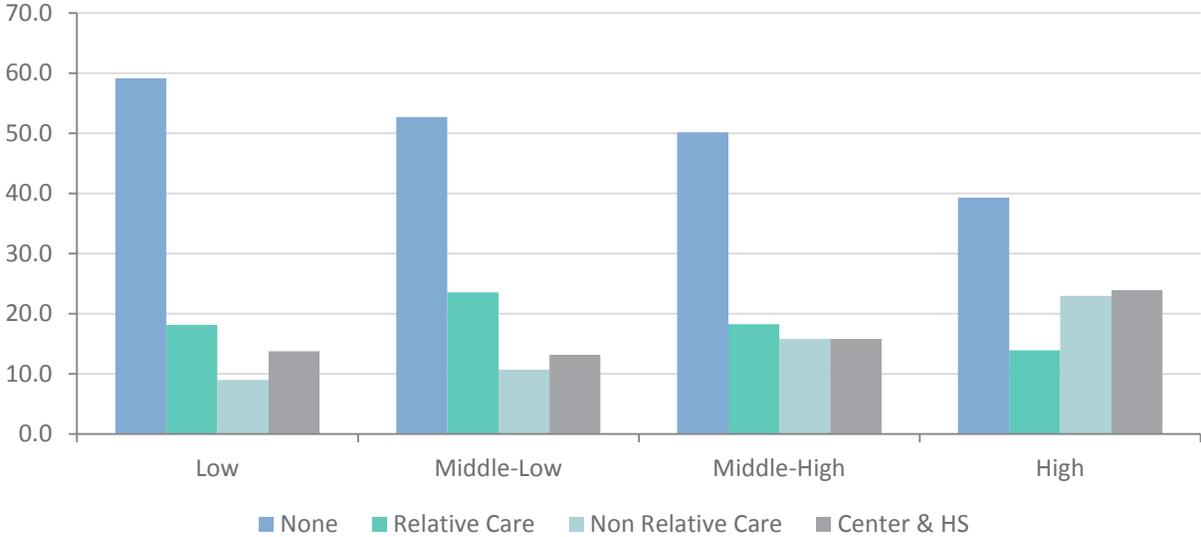


The available data on the quality of infant-toddler care indicates that it is often of low and mediocre quality and rarely of high quality.^{xiv} Family home care tends to be of particularly low quality, especially for children from low-income families. Thus, it is especially unfortunate that most of the infants and toddlers in nonparental care are in these homes.

Figure 8 presents care arrangements at age 2 by family income. Participation in any nonparental care increases with income as does the use of center-based care, which rises sharply for the highest income quartile. This indicates that opportunities for improvement in cognitive abilities afforded by participation in infant-toddler care are most often accessed by the highest income families. There is some suggestion in the data, that Early Head Start and other public supports may increase center-based

care for children in the lowest income quartile. However, this is very small. Only 14 percent of those in the bottom quartile are in center-based care compared to 24 percent in the top income quartile.

Figure 8. Age 2 Care Arrangements by Type and Income



Similarly, Figure 9 displays care arrangements in relation to 185 percent of the poverty line. Clearly, children from lower income families are far less likely to be in nonparental care and center-based care in particular.

Figure 9. Age 2 Care Arrangements by Type for Families Above and Below 185% FPL

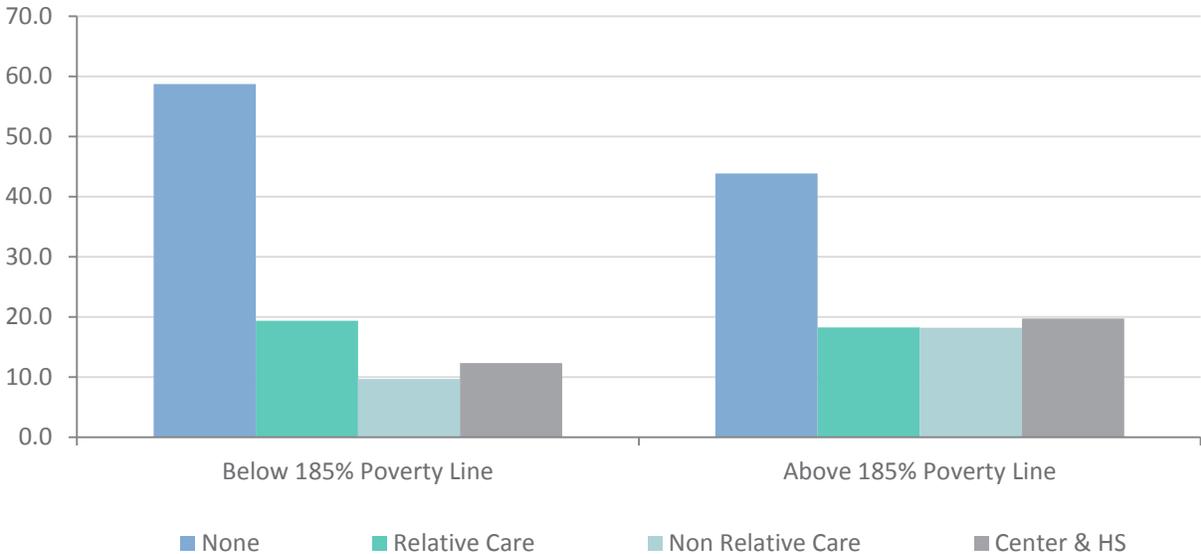
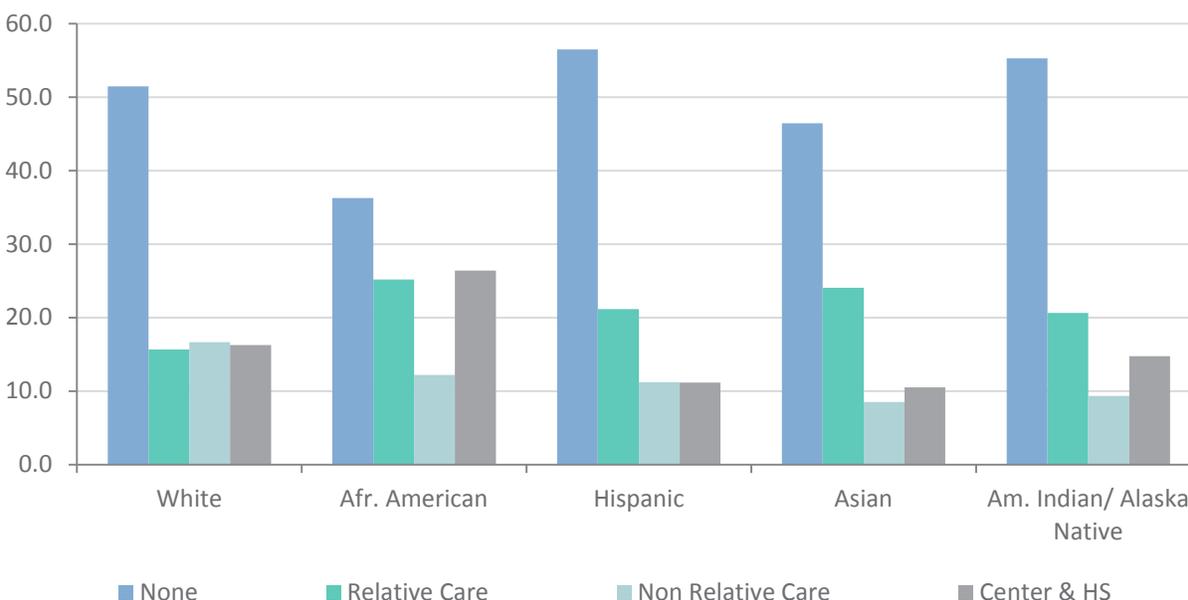


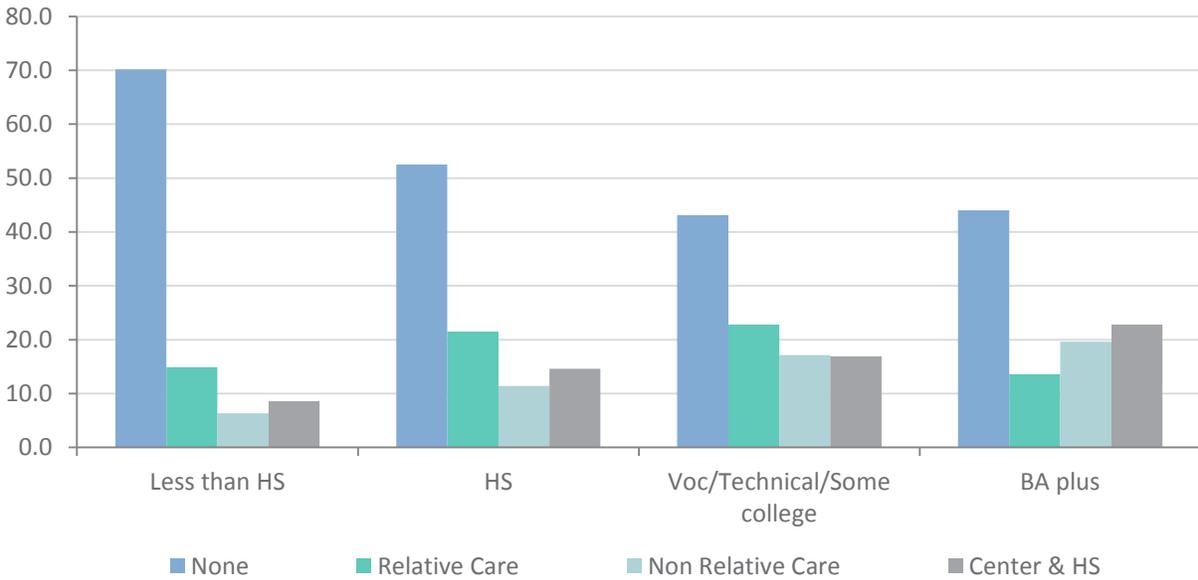
Figure 10 displays care arrangements at age 2 by ethnicity. African American children are much more likely to be in care outside their homes, with more than 60 percent in nonparental care, and have an especially high rate of center-based care (26 percent) compared to other groups. Hispanic and American Indian/Alaskan children are somewhat less likely to be enrolled in nonparental care compared to other groups. At age 2, Hispanic children display enrollment rates of 11 percent in both non-relative and center-based care, while American Indian/Alaskan children evidence enrollment rates of 9 and 15 percent, correspondingly. Most Asian children are in regular nonparental care at age 2, but most of this is relative care.

Figure 10. Age 2 Care Arrangements by Type and Race



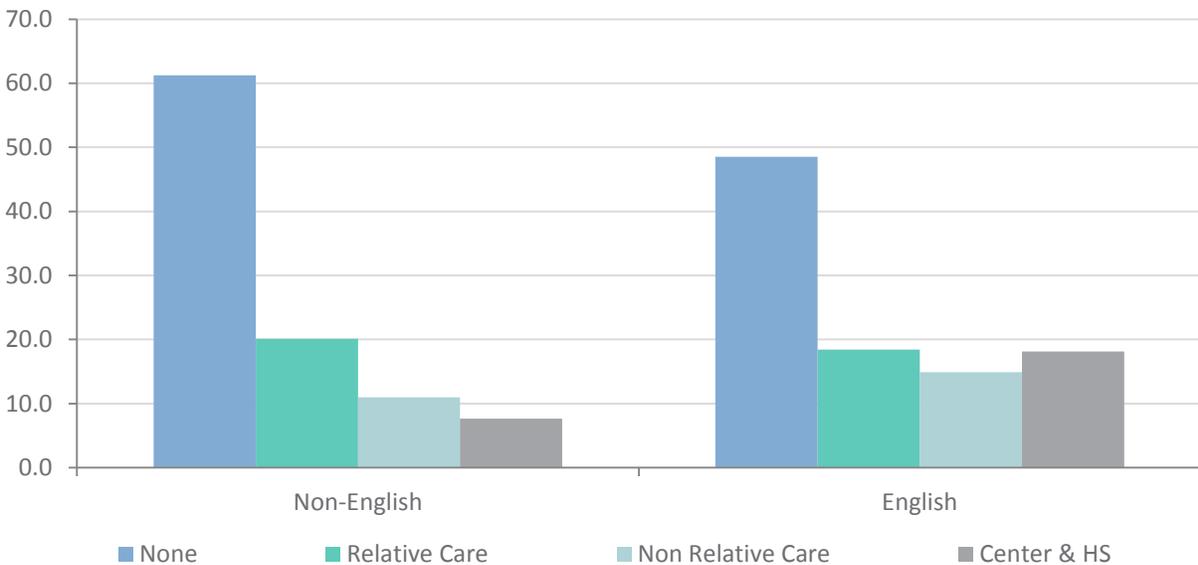
Nonparental care is highest for children whose parents have some education beyond high school and lowest for the children of high school dropouts as show in Figure 11. While 30 percent of children of high school drop-out mothers are in nonparental care, this rises to 47 percent for children of high school graduates, and 56 percent for children of mothers with higher degrees. Use of center-based care rises steadily with parental education, going from 9 percent of children of mothers without a high school degree to 23 percent of children with a bachelors or higher degree.

Figure 11. Age 2 Care Arrangements by Type and Mother's Education



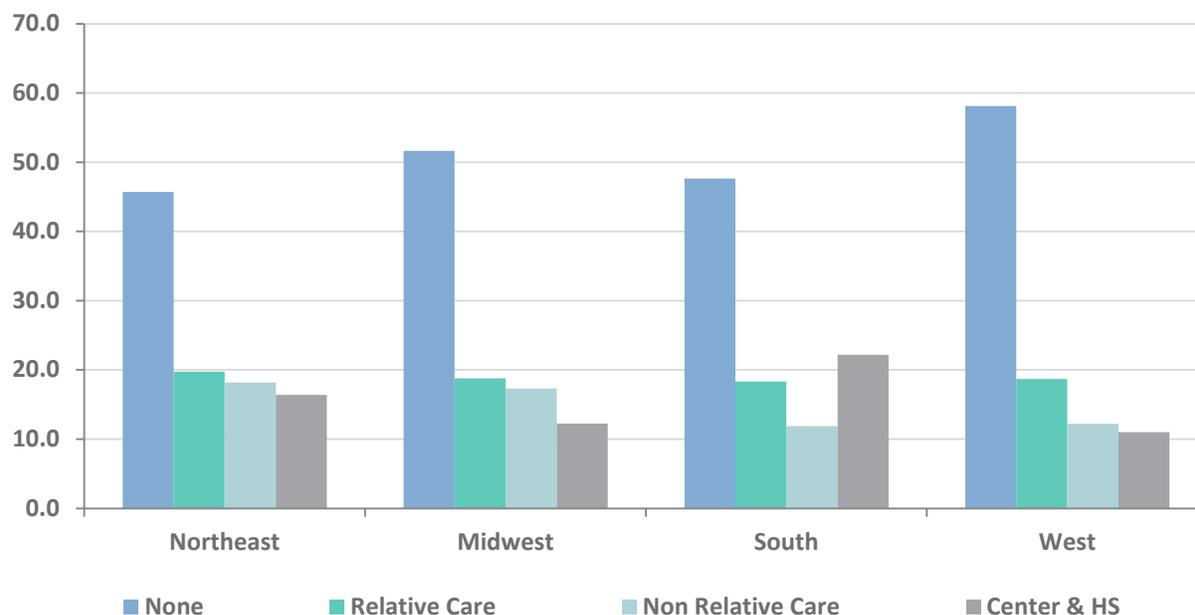
Differentiating care arrangements by language (Figure 12) shows quite different patterns by home language. Children from non-English-speaking homes are more likely to receive only home care from their parents at age 2 (61 percent v. 49 percent). Similarly, they are less likely to be enrolled in non-relative care (11 versus 15 percent) and much less likely to be enrolled in center-based care (8 versus 18 percent). Clearly, children whose home language is not English are less likely than other infants and toddlers to be in the kinds of care settings that would increase their exposure to English.

Figure 12. Age 2 Care Arrangements by Type and Home Language



Lastly, Figure 13 displays differences in care arrangements by region. There are clear differences by region with participation of infants and toddlers in nonparental care highest in the Northeast (54%), followed by the South (52%) then the Midwest (48%), and with the lowest rate of 42 percent in the West. Patterns of center-based care are considerably different, with 16 percent of infants and toddlers in the Northeast, 12 percent in the Midwest, 22 percent in the South, and 11 percent in the West enrolled in center-based care.

Figure 13. Age 2 Care Arrangements by Type and Region



Despite the use of a variety of alternatives including relative and nonrelative care, participation of 2-year olds in nonparental care remains at less than half and varies considerably by family background and region of the country. Children from families with lower income and less education are least likely to be in out-of-home care, particularly center-based care. However, despite tending to be disadvantaged by income and parental education levels, African-American children have relatively high rates of participation in nonparental care and, especially, center-based care.

Overall, it is difficult to determine the extent to which nonparental infant-toddler care increases or decreases the school readiness gap. Very little of this early care is high quality.^{xv} Therefore disparities in access are unlikely to make much difference. However, if higher quality programs were provided through Early Head Start and other means, then increased access to such high quality care could have positive effects for low-income and minority children. African-American children, in particular, might benefit, given their relatively high propensity to participate in center-based programs.

Center-based education and care and its quality for children aged 4

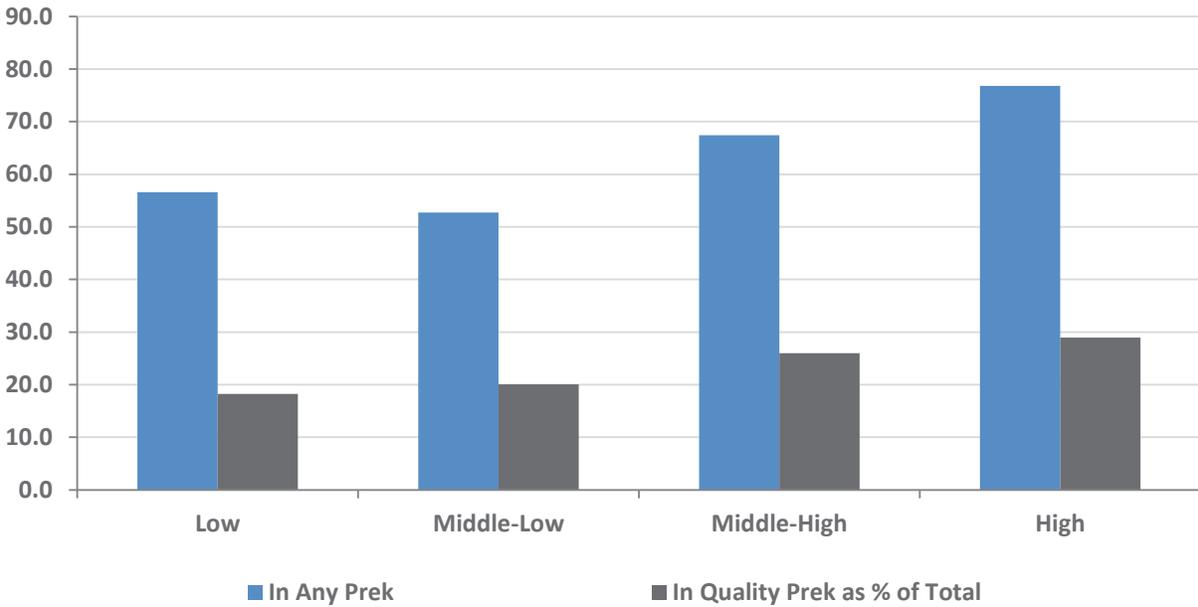
For older preschoolers, we can analyze nationally representative data not just on enrollment, but also on quality. This allows us to examine opportunity gaps not just with respect to any type of center-based program, but also with respect to the quality of those programs. By age 4, 80 percent of children are in regular nonparental care, with slightly higher than average rates for White, African-American, and Asian children, and a somewhat lower rate for Hispanic children. The vast majority of this nonparental care is in centers (about 60 percent) with the rest in relative and nonrelative family home care (about 20 percent), except for Pacific Islander children, of whom 45 percent are in relative care.

In the figures below we present estimates of the percentage of children in any center-based preschool program, which we will call “pre-K” and in good pre-K programs. Good is defined here as scoring above a 5 (which is considered “good” or better) on the Early Childhood Environment Rating Scale-Revised (ECERS-R).¹ Calculations on access rates are based on the ECLS-B dataset, at age 4 (2005). Overall, about a third of pre-K classrooms observed were good, while in contrast only about 10 percent of home-based care was rated good on a similar scale. At the other end, only about 10 percent of pre-K was rated as low quality, while over 40 percent of home care for 4-year-olds was rated as low. This is one of the reasons we focus on access to good pre-K; the other is because the evidence for positive effects of preschool education on school readiness is almost all from center-based programs.^{xvi}

Figure 14 presents the percentage of children enrolled in pre-K, and the percentage of children enrolled in good pre-K at age 4, by income levels. Differences by income are quite large, with 57 percent of low-income children enrolled in contrast to 77 percent of high-income children enrolled. In contrast, such differences are not as stark when looking at the percentage of children enrolled in high quality pre-K, because this is so rare for any children. Only 18 percent of low-income children and 29 percent of high income children are enrolled in good pre-K.

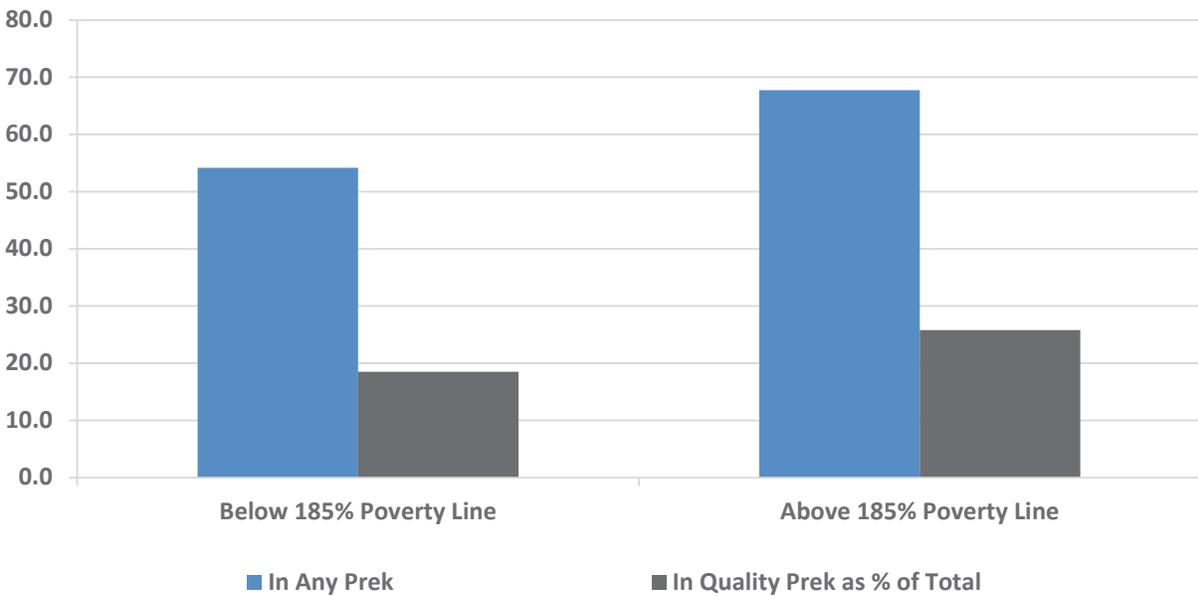
¹ The Early Childhood Environmental Rating Scale-Revised (ECERS-R) is an observation and rating instrument for preschool classrooms serving children aged three to five. Its intended use is to measure classroom quality in preschool classrooms for the purpose of self-assessment, program improvement, program evaluation, and program monitoring (Harms, Cryer & Clifford, 2005). ECERS-R ratings vary within a scale of 1 to 7, with ratings below 3 describing note to minimal quality, ratings below 5 describing medium quality, and ratings above 5 describing good to excellent quality.

Figure 14. Center Enrollment and Quality (ECERS>5) by Income at Age 4, 2005



Similarly to Figure 14, Figure 15 reports enrollments for children below and above 185 percent FPL.² Lower income children are enrolled at a rate 13.6 percentage points below higher income children; yet lower income children are enrolled in quality pre-K at only 7.3 percentage points less than higher income children.

Figure 15. Center Enrollment and Quality by Low- and Higher-Income, 2005



² We were not able to generate estimates using a 200 percent poverty line reference given restrictions in the data.

Similar information is presented in Figure 16 by parental education level. Enrollment rates increase with parental education. Children with parents that have dropped out of high school and less likely to be enrolled in any pre-K (47 percent), relative to children of parents with a high school degree (57 percent), a vocational degree or certificate (61 percent) or more so, a college degree (75 percent). In contrast, we observe that there is little difference in access to good pre-K except for children of parents with a college degree. Thirty-two percent of children from college graduates are enrolled in quality services.

Figure 16. Center Enrollment and Quality by Parental Education at Age 4, 2005

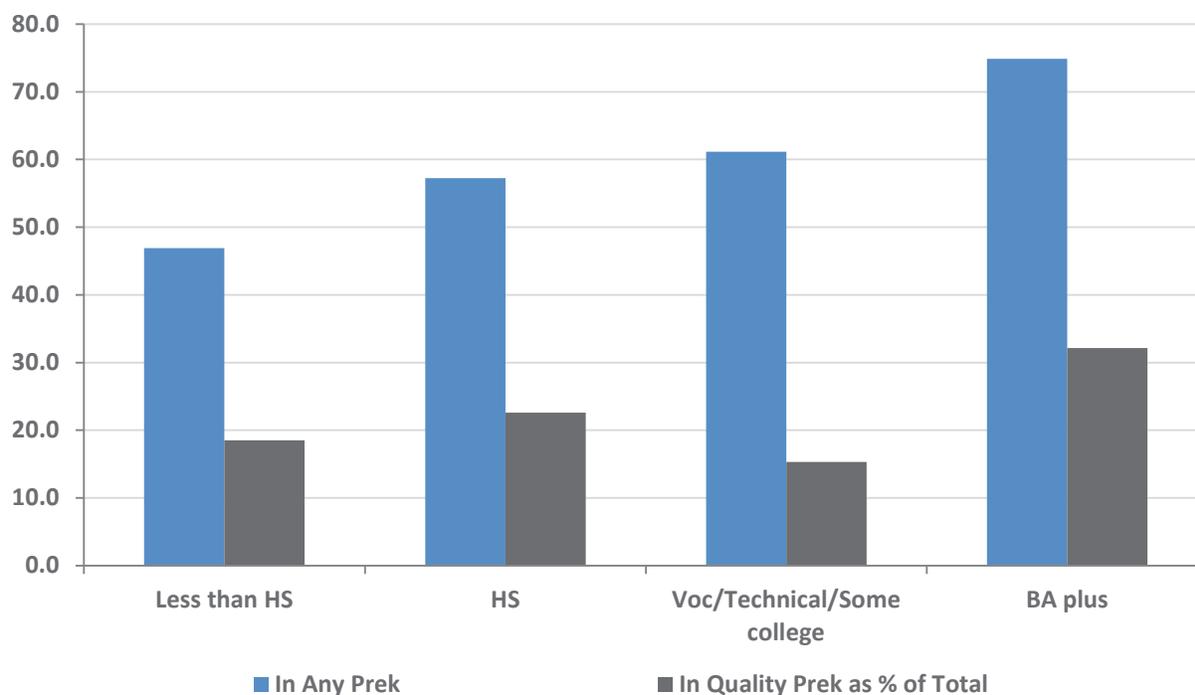


Figure 17 presents access to any pre-K and to good pre-K by ethnicity. Regardless of ethnic group, children have similar rates of access to high quality services. Despite the relatively high rates of pre-k attendance by African American children, so few of the programs they access are of good quality that they are no more likely enrolled to be in good programs than other children. Due to small sample size, estimates cannot be reported on good pre-K separately for American Indian children. As there is little difference in participation rates and quality by home language, we do not present those estimates graphically.

Much larger differences are found when we examine enrollment and quality by region in Figure 18. The Northeast has higher enrollment rates and nearly twice as much good pre-K compared to the other regions. In the Northeast, 73 percent of children attend pre-K and 37 (just over half) attend good pre-K. In the other regions, only about 20 percent of children are enrolled in quality services, with overall enrollment rates in any pre-K varying from 54 percent in the Midwest and West to 65 percent in the South. We can only speculate that higher standards for pre-k and child care quality in the Northeast contribute to this stark difference.

Figure 17. Center Enrollment and Quality by Race at Age 4, 2005

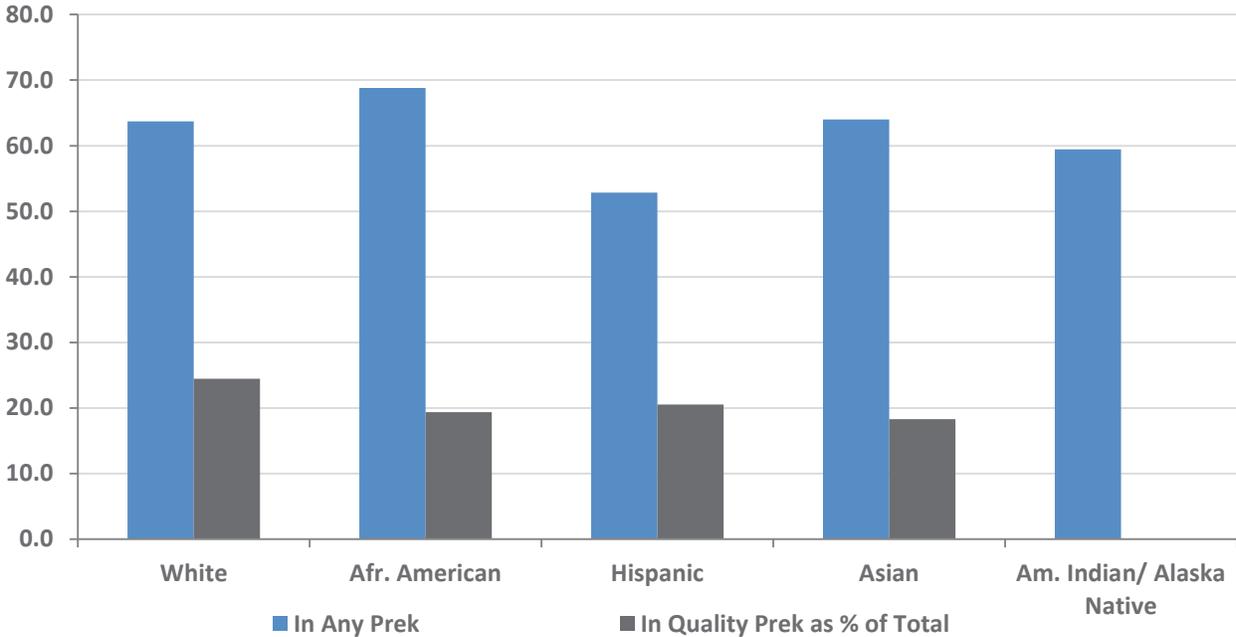
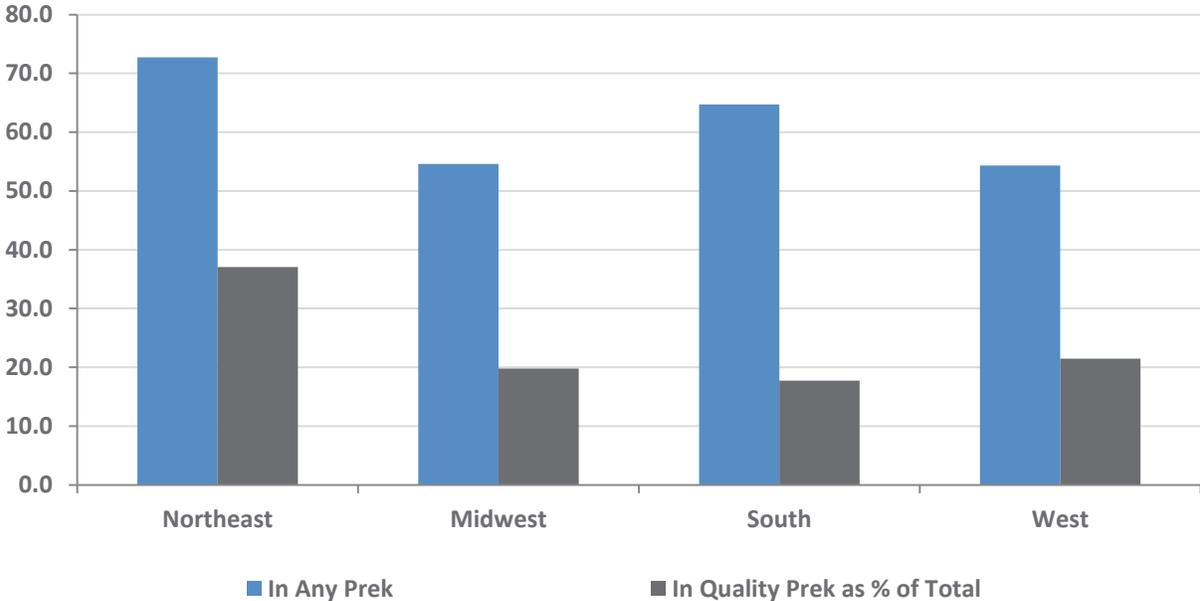
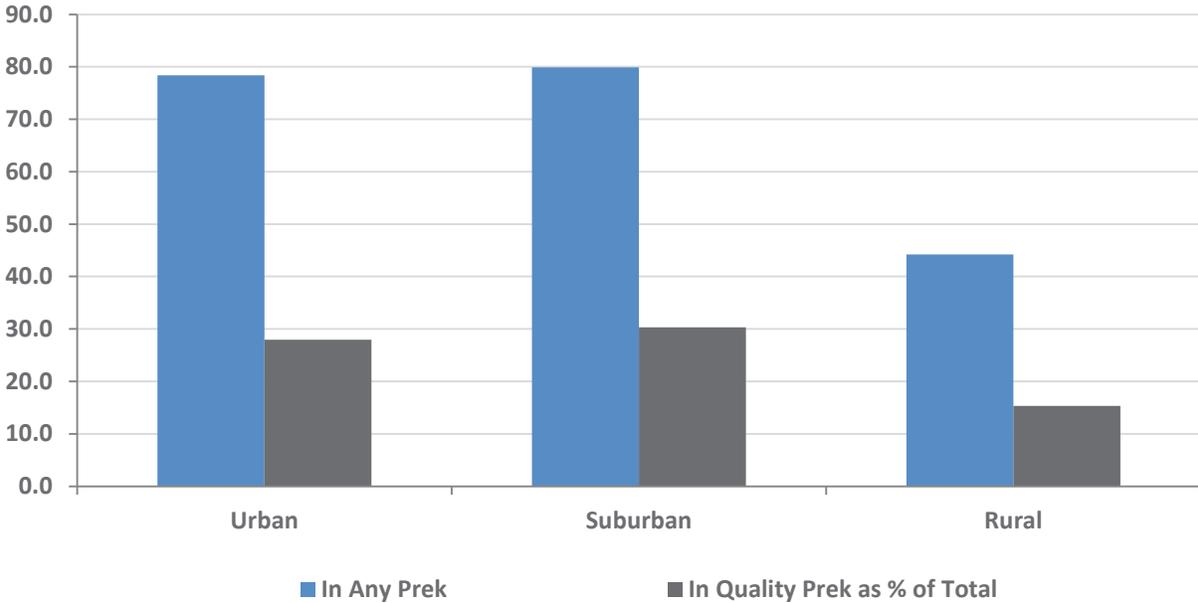


Figure 18. Center Enrollment and Quality by Region at Age 4, 2005



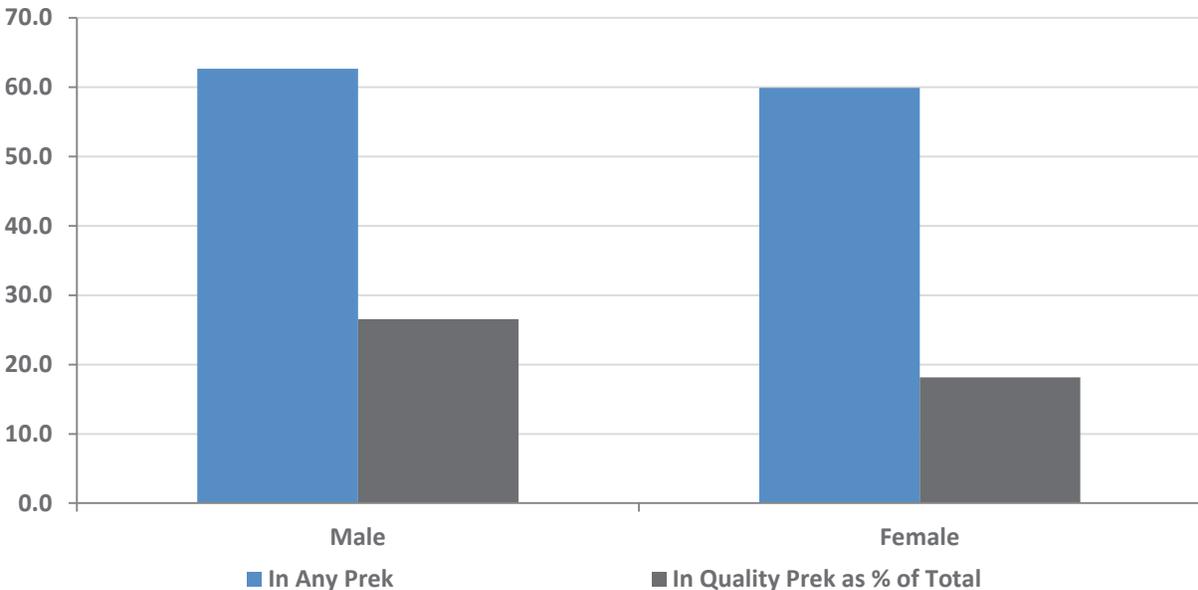
Urban versus rural differences are shown in Figure 19. About 79 percent of children in urban and suburban areas have access to pre-K services, while only 44 percent of children in rural areas participate. About 30 percent of children in urban and suburban areas attend good pre-K, while only 15 percent of children in rural areas do so. This is a striking difference.

Figure 19. Center Enrollment and Quality by Locale at Age 4, 2005



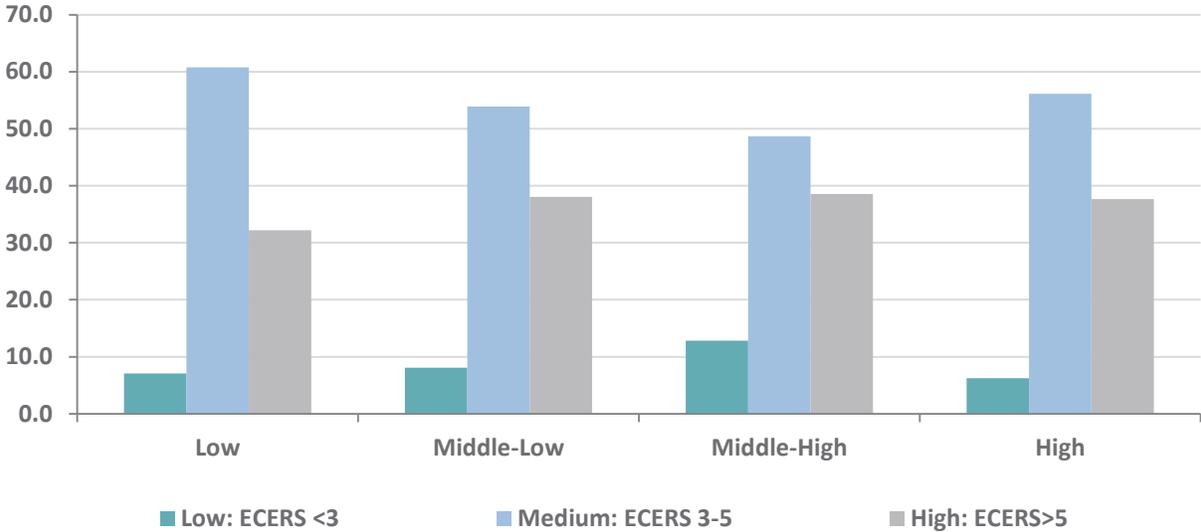
With respect to gender (Figure 20) we find an unexpected difference. While there is no real difference in pre-K participation (about 60 percent for either group), boys are much more likely to have been in good pre-K. Among boys, 27 percent were in good classrooms, compared to just 18 percent of girls. To our knowledge, such a difference has not been previously reported.

Figure 20. Center Enrollment and Quality by Gender at Age 4, 2005



In the next group of figures, we examine quality from a somewhat different perspective, looking at variation only among those who attend pre-K, but examining three levels of quality (low, medium, and high). As Figure 21 indicates, pre-K attending children in the lowest income quartile are somewhat less likely to attend good programs while those from the upper-middle income quartile are somewhat more likely to attend low quality programs.

Figure 21. Levels of Center Quality by Income at Age 4, 2005



We look at quality of pre-K divided between high and low income categories split at 185 percent of the poverty line in Figure 22. Pre-K attending children in families below 185 percent FPL are more likely to be enrolled in medium-quality level services and less likely to be enrolled in either low or high quality services. Part of this could be at least partly explained by access to Head Start.

Figure 22. Levels of Center Quality by Low- and Higher-Income at Age 4, 2005

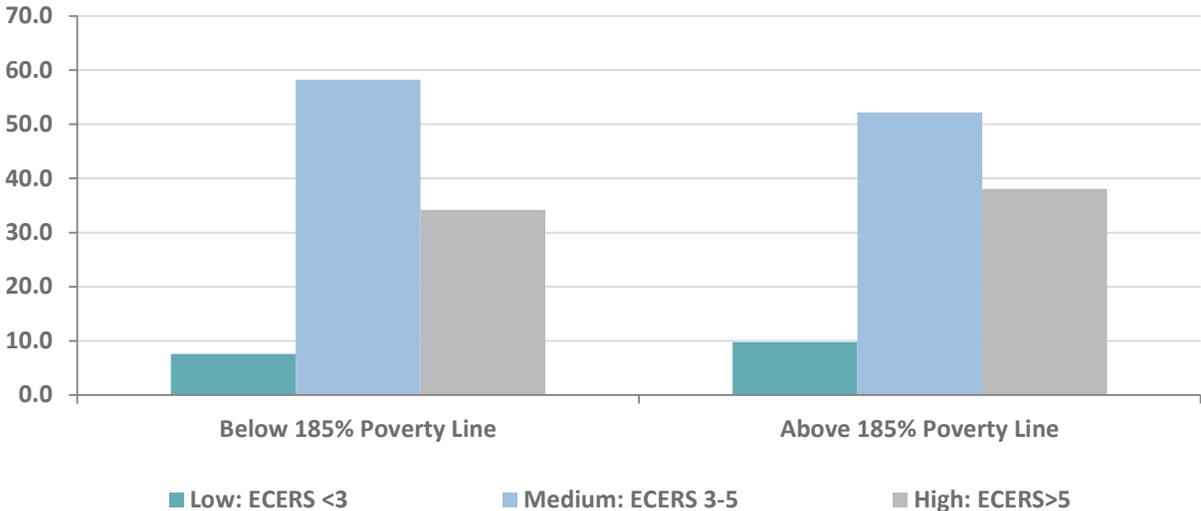
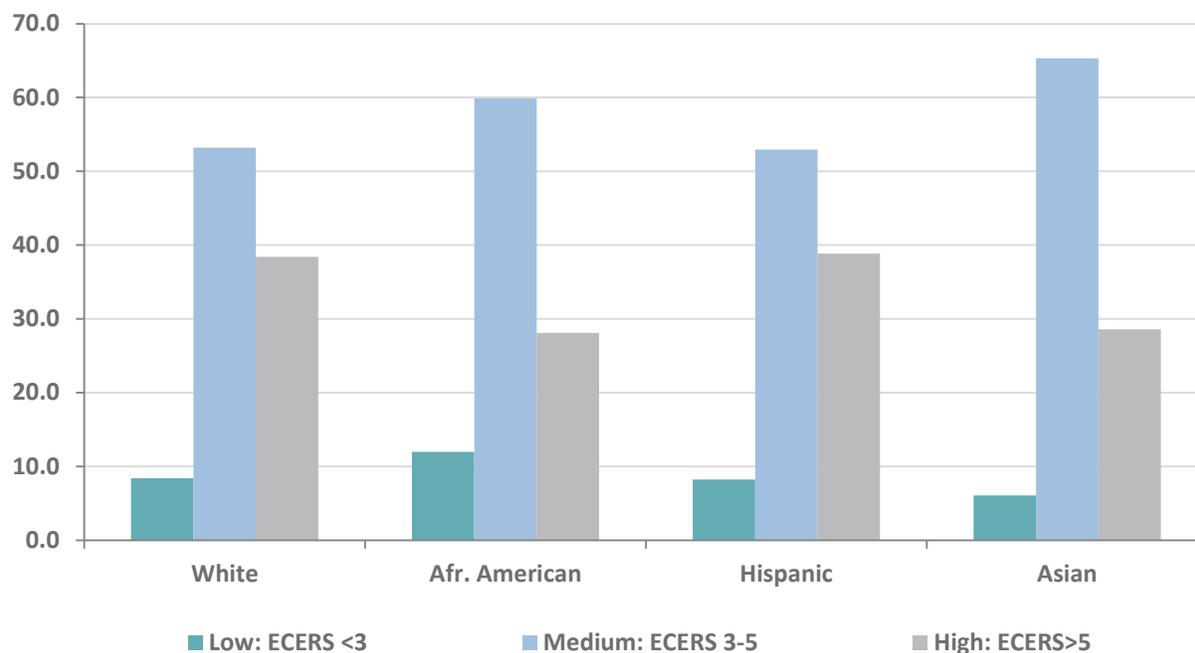


Figure 23 presents access to low, medium, and high quality services by ethnicity. African American pre-K attendees are more likely to be enrolled in low quality services (12 percent) than any other group, while Asians are less likely to be so (6 percent). Hispanics and Whites are similarly enrolled in high quality services (38 percent), while Asian and African American pre-K attendees are less likely to be in good pre-K (28 percent). We do not present results graphically, but there are only very small differences in quality among pre-k attendees by home language.

Figure 23. Levels of Center Quality by Race at Age 4, 2005



Across gender, Figure 24 shows that boys who attend pre-K are less likely to be in low quality services (6 percent versus 12 percent), and much more likely to be in high quality services (42 versus 30 percent). Gender differences in quality are surprising, as they have not been reported previously.

Figure 24. Levels of Center Quality by Gender at Age 4, 2005

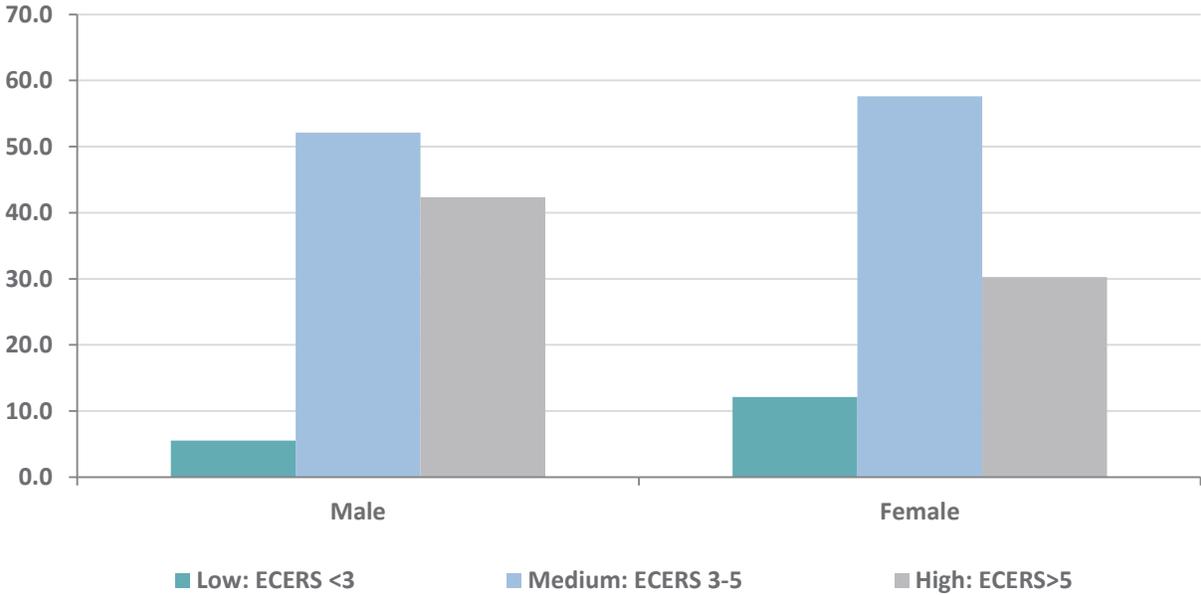
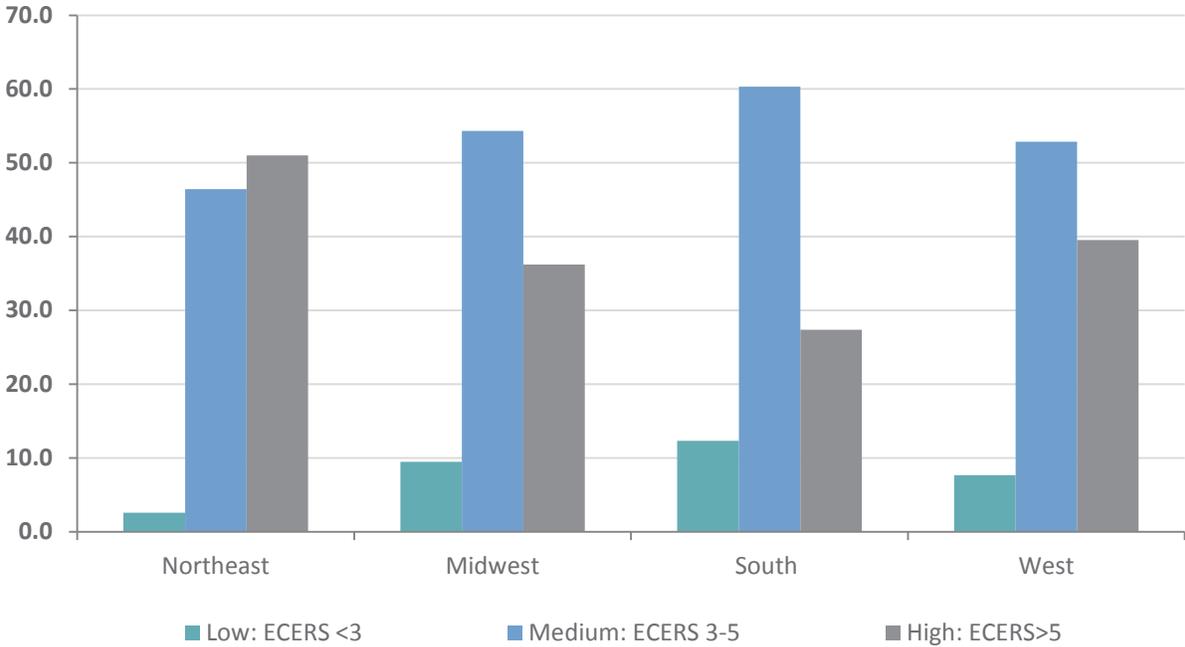


Figure 25 depicts variation in pre-K quality by region. In the Northeast, most pre-K is high quality (51 percent), almost none is low quality (3 percent). In contrast, the South displays the highest percentage of low quality services (12 percent), and the lowest percentage of high quality services (37 percent). The Midwest and West are similar with respect to quality levels, with about 8-9 percent of their pre-K low quality, and 36-40 percent high quality.

Figure 25. Levels of Center Quality by Region at Age 4, 2005

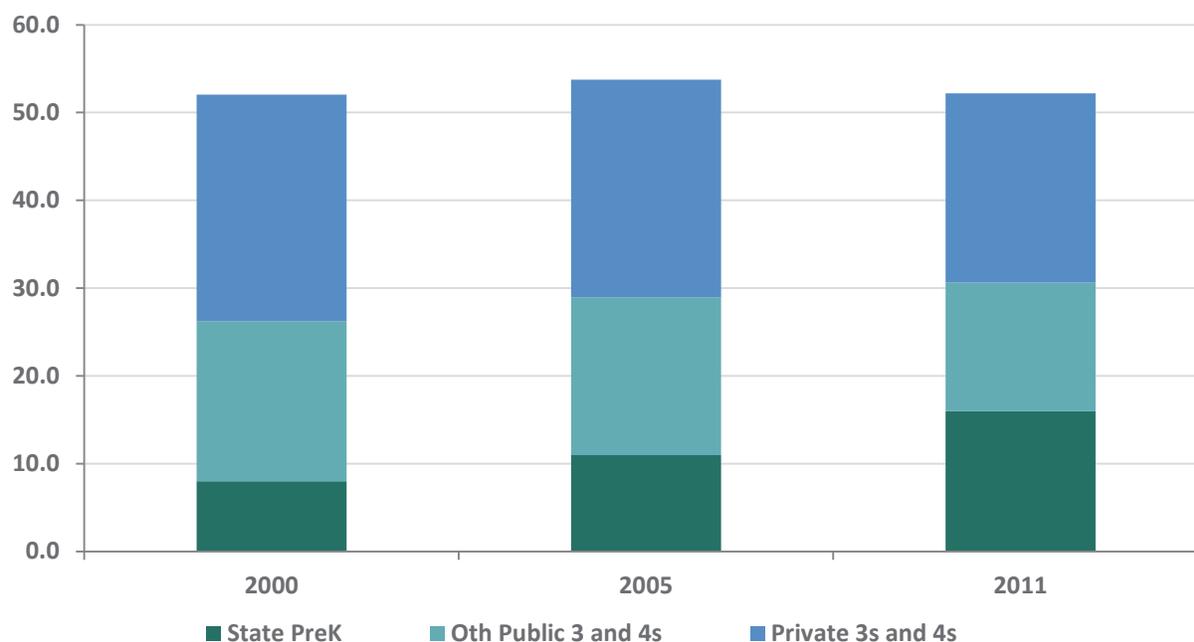


In sum, access to center-based care, and even more so, access to good pre-K, is unequal, and not always as might be naively expected. However, access to good pre-K is quite low for all children, regardless of background. Perhaps the most remarkable difference is the much higher level of quality experienced by children in the Northeast compared to other regions. The most surprising result, as we indicated earlier, is difference in quality experienced by boys and girls.

Trends in public support of pre-K for children aged 3 and 4

As a nation, we have experienced no real growth in overall preschool enrollment in the last decade (Figure 26). Unlike many other highly developed countries, where preschool children have universal access to such services^{xvii}, the U.S. has stagnated and serves only about half of its preschool children in classrooms. In the 2000 to 2011 period, while overall enrollment did not change, the composition of those programs did change modestly as the share of enrollment in public programs increased about 4 percent. With no changes in Head Start provision as a percentage of the population, this means that this trend has been driven by increased State pre-K enrollments (28 percent of children in 2011), and a consequent reduction in the percent of 4 year olds served by private programs not participating in public pre-K. As it is common for private providers to participate in public pre-K, this suggests that the funding source changed much more than the location or auspice of the program. Ideally, this increase in state preschool services has translated into a modest increase in quality. Unfortunately, we have no nationally representative study of pre-K quality since 2005.

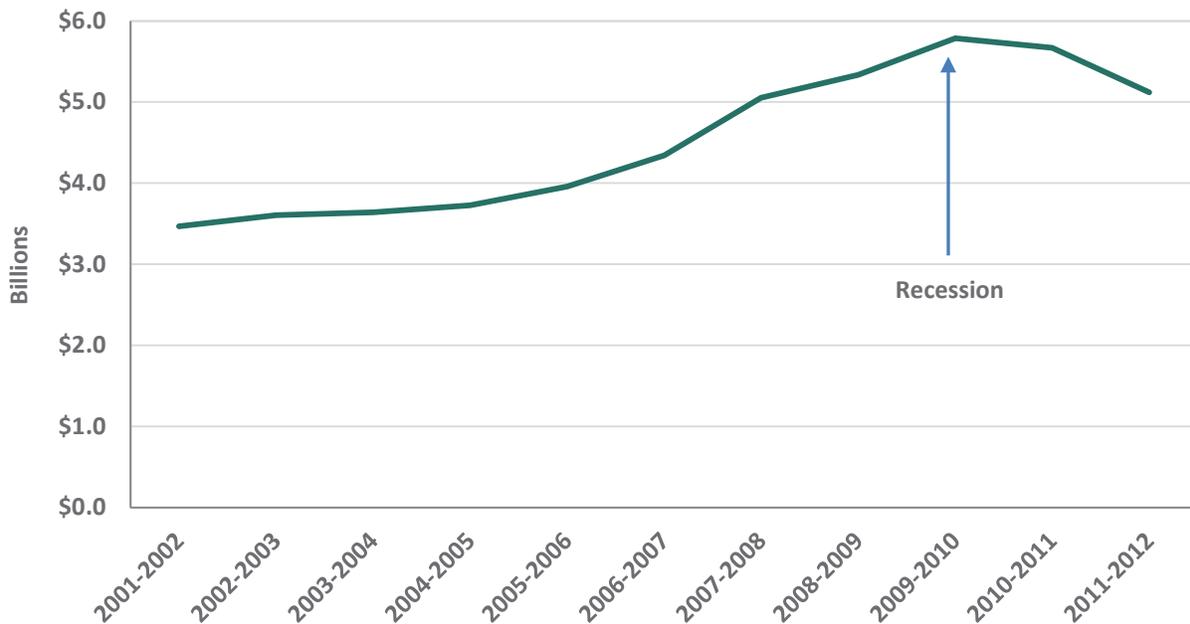
Figure 26. Trends in Center-Based Enrollment at Ages 3 and 4³



³ Source: Calculations based on Barnett & Carolan (2013)

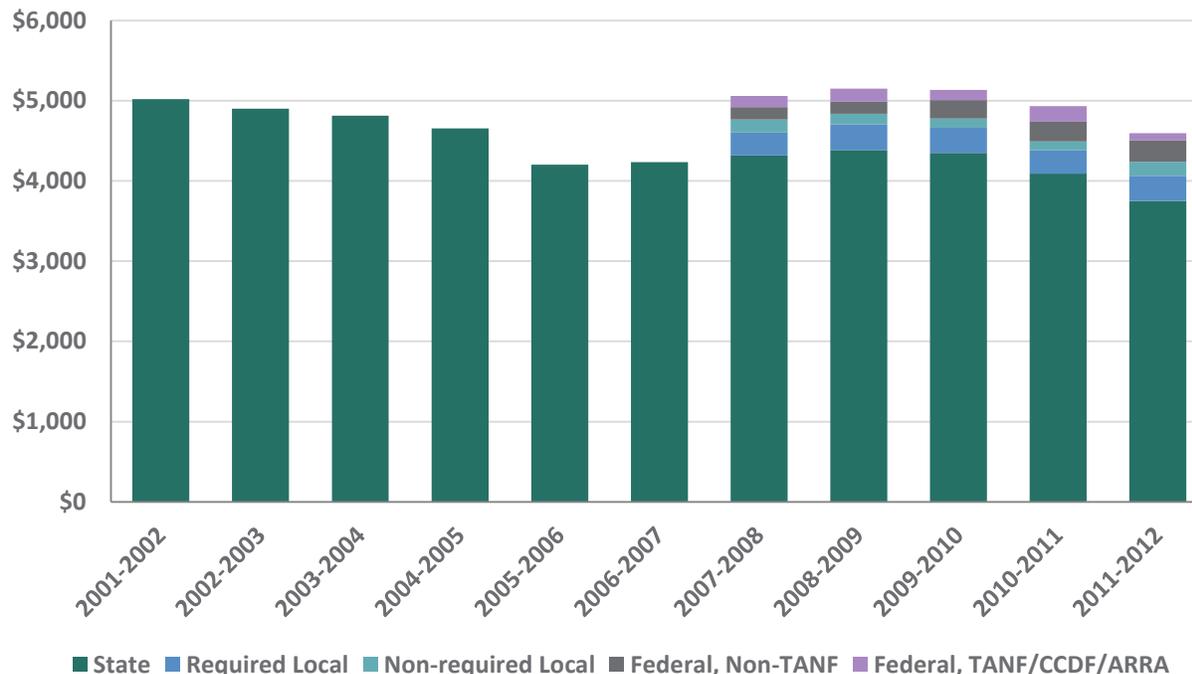
Figure 27 shows trends in State pre-K spending since 2001. State Spending on Pre-K increased over the last decade, but dipped after the Great Recession. In 2001-02, State pre-K spending amounted to \$3.47 billion and this had increased to \$5.12 billion by 2011-2012.

Figure 27. State Spending on Pre-K (Inflation Adjusted 2001-2002 to 2011-2012)⁴



Average state spending per child in state pre-K (Figure 28) has not shown the same pattern as total spending. Instead we observe a general downward trend. Over the first half of the last decade, per-child spending adjusted for inflation fell by close to \$1,000 per child per year. However, it started to rise mid-decade, before the recession, after which it declined again. Average annual spending per child was \$4,151 in 2011-12. States do not have complete data on funding from other sources (particularly local school funding). However, they tend to have information on federal funds. NIEER estimates that ARRA (American Recovery and Reinvestment Act) funds contributed about \$127 million in 2010-2011.^{xviii} The decline in funding per child over the long run and during the recession creates a concern that quality cannot be adequately supported.

⁴ Source: Barnett & Carolan (2013)

Figure 28. Spending Per Child by Source (Inflation-adjusted 2001-2002 to 2011-2012)⁵

Overall, the picture we obtain of public pre-K including state funded pre-K indicates that if there had been any positive trend over the decade, it would be an increase in quality due to the growth of state-funded programs. However, declining real dollar financial support per child enrolled raises questions about just how much state-funded pre-K might have been able to raise quality.

Conclusions

Kindergarten entry studies indicate that there are substantial inequalities in school readiness, and these have changed little over the last decade. Children in the lowest income quintile begin kindergarten with academic skills 20 months behind those of children in the top income quintile. Limited and unequal access to early care and education during the first five years of life contribute to these inequalities in readiness. Public investments in Early Head Start, quality of subsidy care, Head Start, and state-funded pre-K do reduce inequalities in early care and education opportunities. However, these public investments simply are not large enough to produce full equality of early opportunity by income and ethnicity. The remaining inequalities in access likely contribute to the large inequalities in reading and math readiness we observe by income, education, ethnicity, and language background. Overall, gaps were larger in math than in reading.

These inequalities are long standing, and there has been little improvement over the last decade in access to quality pre-K and other programs. The only large-scale improvement observed is an increase in

⁵ Source: Calculations based on Barnett & Carolan (2013)

state pre-K, which might have produced very small overall increases in access to quality for disadvantaged children. Unfortunately, the impact of state pre-K expansion on access to quality has been limited, because states have reduced rather than increased their funding per child as state pre-K enrollment has expanded; with less funding per child they have less capacity to support program quality.

Early care and education services remain far from universal even in the year before kindergarten, and vary across various subpopulation groups. Good pre-K is rare across all groups, and, to the extent that it is available, still tends to increase rather than offset inequalities in readiness because of inequalities in access to good programs. Inequality of opportunity appears to be an issue across the entire birth-to-5 age span, as indicated by data for children at age 2 as well as age 4. At age 4, where access is highest and best supported by governments, there remain strong differences by location, including region, and rural children have especially limited access. There is a surprising difference in quality to the disadvantage of girls that should be further investigated. However, overall, the strongest conclusion is the need to greatly increase quality for all children.

In sum, major inequalities in early learning and development remain common, and unequal early opportunities contribute to these inequalities. These inequalities are not just of concern for children in poverty or for minority children, but for the vast majority of American children. Major policy changes are needed, to broadly increase access to high quality of early childhood services. Policy makers at local, state, and federal levels need to be aware of the extent of both opportunity and readiness gaps across the full spectrum of the population, and not just for the most disadvantaged, when making decisions about early care and education standards and funding.

ENDNOTES

- ⁱ Barnett, 2008; 2011; Yoshikawa et al, 2014
- ⁱⁱ Barnett & Lamy, 2013
- ⁱⁱⁱ Barnett & Carolan, 2013
- ^{iv} U.S. Department of Education, 2011
- ^v U.S. Department of Education, 2009
- ^{vi} U.S. Department of Education, 2011
- ^{vii} Lee & Burkham, 2002; Nores, 2006
- ^{viii} Duncan & Murnane, 2011
- ^{ix} Nores, 2006
- ^x Duncan et al., 2007
- ^{xi} Barnett, 2008, 2011; Barnett & Lamy, 2013; Herbst, 2013
- ^{xii} Barnett & Lamy, 2013; Herbst & Tekin, 2010
- ^{xiii} U.S. Department of Education, 2009
- ^{xiv} NICHD, 1996; 2000
- ^{xv} NICHD 1996, 2000
- ^{xvi} Barnett, 2008
- ^{xvii} OECD, 2006
- ^{xviii} Barnett, Carolan, Fitzgerald & Squires, 2011

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