



April 2014: Poverty's Effects on Child Development

Background

Children who grow up in poverty are likely to have different experiences and environments, including lower access to health and education resources, than children from higher income families. That knowledge was at the heart of the creation of the Head Start program, along with the belief that stable, nurturing environments and rich developmental and educational experiences would provide a window of opportunity for children to flourish regardless of their families' economic status.

Over the nearly fifty years since Head Start began, we've learned much more about how children's development is influenced by their environments, including by the circumstances of poverty. All of what we've learned reinforces that early intervention, strong families, and nurturing environments can help children develop resilience and be better prepared for success in school and in life. As you'll see in this Research Blast, caregiving contributes to brain development, which supports learning, and when caregiving is weak Head Start and programs like it can still help children catch up to their peers. If children reach school age without that opportunity and without having their risk factors addressed, they are far more likely to find themselves among the children struggling in school. The resources and articles below lay out just a few of the many, many studies over the past several decades that are relevant to the development of Early Head Start and Head Start children, but they give us both a glimpse into how experiences shape development and a reminder of the important work of programs across the country.

Resources

[Closing the 'Word Gap' Between Rich and Poor](#)

from NPR

In 1995, Hart and Risley documented that children in low-income families hear far fewer words than peers in high-income families. Listen to this story as NPR discusses research and advancements made about the 'word gap' over the past two decades.

[The Youngest Americans: A Statistical Portrait of of Infants and Toddlers in the United States](#)

by David Murphey, Mae Cooper, and Nicole Forry for ChildTrends

This comprehensive report on the state of infants and toddlers in the United States emphasizes how this group of young Americans are the most diverse in our nation's history and face many obstacles due to low opportunity for their families. Policy points to focus on are included.

[diversitydatakids.org](#)

created by the Heller School for Social Policy and Management

This interactive website allows you to compare and analyze data and generate maps on child well-being across the United states based on many factors, including Head Start access, race, ethnicity, family income, and more.

Research

[The effects of poverty on childhood brain development: the mediating effect of caregiving and stressful life events](#)

by Joan Luby, Andy Belden, Kelly Botteron, Natasha Marrus, Michael Harms, Casey Babb, Tomoyuki Nishino, and Deanna Barch for JAMA Pediatrics

From the early days of Head Start the program was based on the idea that children in poverty tended to struggle in school, but only in recent years has neuroscience given us the tools to understand how experience shapes children's brains and leads to different outcomes. In this study of 145 children from the Preschool Depression Study, MRIs were used to explore how poverty affected the total volume of gray and white matter in children's brains, as well as the sizes of two key brain regions involved in emotional regulation, memory, and learning called the amygdala and hippocampus. The study then looked at what factors experienced by children in poverty affected their brain development.

Children whose families were in poverty had measurably smaller hippocampi and amygdalas and less white and gray matter in their brains; these children were also more likely to have lower caregiver support and more stressful life events during the course of the study. However, whether caregiving was supportive or hostile made a difference in the size of the hippocampus, the brain region key for memory and learning. Stressful life experience also made a difference in this part of the brain. Overall, the authors come to a conclusion that emphasizes the importance of Early Head Start and Head Start: caregiving is an ideal target for intervention for vulnerable children, and providing high-quality early childhood caregiving both in programs and by supporting parents can protect children from some of the effects of poverty and enable their healthy development.

Do the Effects of Head Start Vary by Parental Preacademic Stimulation?

by Elizabeth Miller, George Farkas, Deborah Lowe Vandell and Greg Duncan for Child Development

As the study above shows, more than poverty it's particular *experiences* of poverty that can hinder children's development. Understanding this at the level of brain cells is important, but in this analysis of some family data collected as part of the Head Start Impact Study researchers from the University of California, Irvine uncover how the Head Start intervention has different effects based on children's different experiences. The authors compared children's early math, early literacy, and vocabulary scores after a year of Head Start to children not in the program based on how much parental stimulation they got at home through reading, writing, singing, and other activities.

Interestingly, different skills showed different patterns. For early math, children who got low support at home showed a much larger gain in skills over the course of a year than children with middle or high support, though more supported children still scored higher at the end of the year. For early literacy, children with a middle amount of support showed the most growth. For vocabulary, there were similar effects for low and middle level children and no effects for children with high stimulation at home. Overall, two key themes emerge. First, while the vast majority of the children in the study are likely income-eligible, Head Start has the greatest effect on children whose poverty is compounded by low to middle levels of parent stimulation at home; this reinforces programs' work to find the most vulnerable children among those eligible. Second, children with high parent stimulation scored consistently higher than children with low parent stimulation, which emphasizes how important programs' work to strengthen families' parenting skills can potentially be.

Can Intensive Early Childhood Intervention Programs Eliminate Income-Based Cognitive and Achievement Gaps?

by Greg Duncan and Aaron Sojourner for the Journal of Human Resources

Those in the Head Start field, including many of the program's supporters, agree that a high-quality early childhood education is a crucial investment in helping at-risk children succeed in life. This study examined if an intensive early childhood intervention program could eliminate income-based cognitive and achievement gaps. Children in the study received an Abecedarian-type intervention from birth until age three, including full-working-day child care with game-based educational activities and an emphasis on language development.

The authors used data from the Infant Health and Development Program (IHDP), which included a subset of 985 children in eight different facilities across the country who were at risk of low cognitive development because of low-birth weight. The study found that the cognitive growth of low-income children was greater than the cognitive growth experienced for high-income children after receiving program services. They estimated that by age three, either an Abecedarian-type universal or targeted program would eliminate the income-based gaps in IQ, with a further projection that one-third to three-quarters of the gaps in age eight IQ and achievement would be eliminated.

The closest federal program to the IHDP design is Early Head Start, which also offers home visits and center-based care for children up to age three, though Early Head Start models vary in their settings, hours, and curriculum and have lower funding rates per child. This study calls attention to the rewards that can be reaped from investing in early intervention.

[An Investigation of the Relations Between School Concentrations of Student Risk Factors and Student Educational Well-Being](#)

by John W. Fantuzzo, Whitney A. LeBoeuf, and Heather L. Rouse for Educational Researcher

Much research has shown that children who are at-risk tend to score lower in achievement. In this study, Fantuzzo and his colleagues look at how having more students with more risk factors in a school is related to the school's achievement and attendance rates. The study focused on an entire cohort of third graders in the School District of Philadelphia and looked at risk factors that included birth risks, teen mother, low maternal education, homelessness, maltreatment, and lead exposure.

Among the results, the study found that attending a school with a ten percent higher concentration of students whose mothers did not have a high school degree was associated with lower reading and mathematics achievement and lower attendance rates for the school. The biggest risk to overall school achievement was low maternal education. This study highlights how a high concentration of risk factors can destabilize the well-being of an entire school community. Since Head Start and Early Head Start programs are dedicated in ensuring that all vulnerable children and families have what they need to succeed - in part by directly increasing maternal education, finding housing for homeless families, and addressing child welfare needs - this study calls attention to how Head Start and Early Head Start are part of the fabric of a healthy community.

Discussion Questions

1. What risk factors are most prevalent in your community? Are they related to poverty or to other community needs?
2. Take a look at your state on diversitydatakids.org. What does it reflect about poverty in your state and access to services like Head Start compared to the rest of the country?
3. Given the role that caregiving plays in children's healthy brain development and therefore in children's ability to learn, how do you train staff and support parents with nurturing caregiving practices?

Do you know of other recent research that may be of interest to the Head Start field? Do you have other questions, comments or concerns? E-mail Emmalie Dropkin (edropkin@nhsa.org).