

Effects of poverty and health on children’s cognitive development

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It is increasingly clear that poverty and health have a reciprocal relationship, with each affecting the other, and with the two working together to contribute to inequality by socioeconomic status. Health and poverty both vary over time, and each simultaneously obscures, mediates, and moderates the effects of the other. It is difficult to disentangle these intertwined effects, and most research to date has focused only on the effects of health on poverty or the reverse. In the work described in this article, Dohoon Lee and I examine how the reciprocal relationship between poverty and child health during early childhood affects estimates of each circumstance on children’s cognitive development, and assess how these effects vary with age and across racial and ethnic groups.¹

Inequality begins early

As has been discussed in earlier articles, there is a strong association between childhood adversity and inequality later in life. The possibility that the transmission of social inequality begins quite early is receiving increasing attention by both scholars and policymakers. There has also been a shift in how we think about the transmission of social inequality from a fairly static perspective—linking one generation of adults to income or occupational status among the next generation of adults—to a more dynamic perspective. This new perspective acknowledges that sensitive periods of human development structure children’s progression through various social institutions, and eventually determine attainment in adulthood. Socioeconomic inequalities in children’s health and skill development are present before children enter the school years and play an important role in shaping longer-term prospects for education and socioeconomic attainment.

Poverty and child health

Childhood health is particularly revealing because it is closely intertwined with both biological and social processes, and is strongly influenced by socioeconomic background. Health, independent of socioeconomic circumstances, affects both opportunities for upward mobility in the short-term such as skills acquisition and achievement, and risks of downward mobility in the long-term such as job loss and declining

income. This evidence leads us to conclude that health is not merely a proxy for socioeconomic status, but is instead an important determinant of human capital development that operates through both social and biological mechanisms. In researching poverty and health, our hypotheses, and tests of those hypotheses, should not set up the effects of the two factors to be mutually exclusive.

Effects on child cognitive development

Most research on health and inequality looks at longer-term effects among adults. We focus on children not only because childhood is a sensitive period for skill development, but also because child health affects family well-being, not just individual outcomes. In particular, we focus on cognitive development because it is strongly affected by both poverty and child health.

Using data from the Fragile Families and Child Wellbeing Study, we show the effects of poverty and child health on child cognitive skills in Table 1. We find that both poverty and poor health have statistically significant negative effects on children’s cognitive skills, but controlling for factors that do not change over time, such as demographic characteristics and socioeconomic status at birth, greatly decreases effect sizes. Using marginal structural models, we also estimated effects that account for time-varying confounding from variables such as family structure, parental employment, number of children, and the reciprocal effects of poverty and child health over time. That is, for poverty estimates, we controlled for child health over time, while for health estimates, we controlled for poverty over time. This approach did not greatly change the estimates of either poverty or poor health on cognitive skills.

As Figure 1 shows, we found different patterns for the effects of poverty and poor health on cognitive skills by age of the child. At age 3, there was little evidence of differences in cognitive development by either poverty or health status.

	No Control Variables	Controlling for Variables that Do Not Change Over Time
Poverty	-0.207	-0.052
Poor Health	-0.065	-0.030

Note: Control variables include: social, economic, demographic characteristics at birth; and maternal, paternal, and child characteristics.

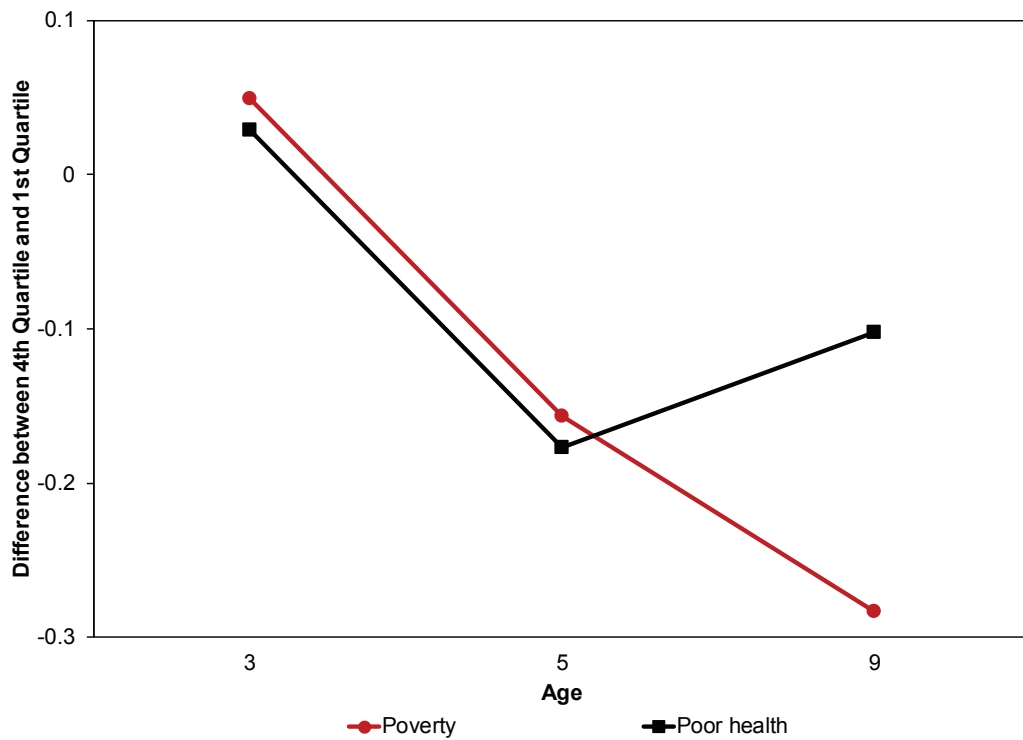


Figure 1. Effects of poverty and poor health on cognitive skills by age.

Notes: Skills differences are calculated between those at the 4th and 1st quartiles of poverty, and those at the 4th and 1st quartiles of poor health. The farther away from zero, the greater the difference.

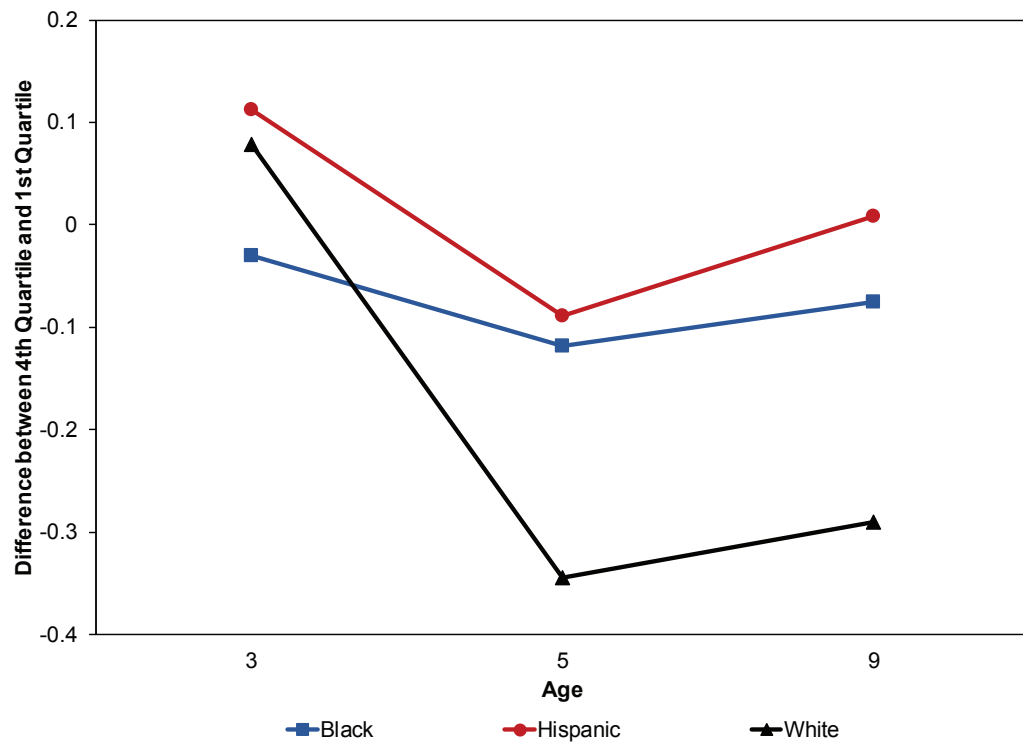


Figure 2. The effects of poor health on cognitive skills by race and ethnicity.

Notes: Skills differences are calculated between those at the 4th and 1st quartiles of poor health. The farther away from zero, the greater the difference.

That is, for example, we found little difference in cognitive skills between children from the wealthiest and poorest families. By age 5, at the start of formal schooling, however, there were significant differences in cognitive skills by both poverty and health status. However, the effects of poverty accumulate, strengthening by age 9, while the effects of health appear to level off after age 5.

While we find little variation by race or ethnicity in the effects of poverty on cognitive skills, as Figure 2 shows, the negative effects of poor health are largely driven by the effects on white children, rather than on black or Hispanic children. This finding is consistent with findings from other studies.² In work I did on the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC), I found that among all eligible children, white children were the least likely to be in families receiving WIC benefits.³ This finding, combined with the results from the study described here, suggests that in some cases, populations who may benefit most from interventions are the least likely to receive assistance.

Implications

These results confirm that poverty and poor health work simultaneously to shape children’s cognitive development. Our findings are consistent with the idea that poverty is a “fundamental cause” of children’s cognitive development, that appears quite early in life. In addition, our findings also suggest that health investments are a key part of the antipoverty safety net, given their effects on development independent of the effects of poverty.■

¹D. Lee and M. I. Jackson, “The Simultaneous Effects of Poverty and Child Health on Children’s Cognitive Development,” *Demography* (Forthcoming).

²See, for example, M. I. Jackson, “Understanding Links between Adolescent Health and Educational Attainment,” *Demography* 46, No. 4 (2009): 671–694.

³M. Jackson and G. Schwartz, “Is WIC Reaching Those in Need? Children’s Participation in Nutritional Policy during the Great Recession,” IRP Discussion Paper No. 1423-14, Institute for Research on Poverty: Madison, WI, 2014.