



## The Jamaican Study<sup>1</sup>:

### Early childhood education can compensate for developmental delays, boost earnings and reduce inequality.

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*High-quality early childhood development programs in the United States, such as home visiting, Abecedarian and Perry Preschool, have demonstrated positive economic and social effects. A new follow-up study of a low-cost early childhood intervention conducted in Jamaica from 1986 through 1988 by researchers at the University of the West Indies demonstrates the effectiveness of home visiting programs, parent-child interactions and cognitive and social stimulation for infants and toddlers in closing the achievement gap and producing long-term economic gains. Extremely disadvantaged children treated in the Jamaican Study earned 25% more as adults than disadvantaged children who received no treatment—and they earned as much as their more advantaged peers. The results suggest that early interventions may be especially effective for disadvantaged children in developing countries, and reinforce the value of high-quality home visiting programs for disadvantaged children in the United States.*

#### The Jamaican Study

This study evaluates the long-term benefits of early psychosocial stimulation and nutritional supplements for extremely disadvantaged children. Growth-stunted children between the ages of 9 and 24 months participated in a 2-year randomized controlled trial. Stunted growth is a reliable indication of severe economic disadvantage in developing countries and is associated with malnutrition and poor cognitive development. Studies have shown that early developmental disadvantages persist into adult economic disadvantage. One hundred twenty-nine Jamaican children were randomly assigned to one of four groups: 1) psychosocial stimulation; 2) nutritional supplementation (1 kg milk-based formula per week); 3) both psychosocial stimulation and nutritional supplementation; and 4) a control group that did not receive treatment. The study also surveyed a comparison group of 84 non-stunted children who lived nearby. Groups 1 and 3 participated in a program very similar to home visiting programs in the United States. It consisted of two years of weekly one-hour sessions at home with trained community aides to develop child cognitive, language and psychosocial skills through

improved parent and child interaction. Study participants were interviewed 20 years later and evaluated on a number of economic indicators.

#### Early education is more powerful than nutrition supplements.

While stunted growth is largely due to a lack of nutrition, the nutrition intervention alone didn't affect later adult economic outcomes. The nutrition-only group showed no long-term effect on any measured outcome. And, there were no statistically significant differences in effects between the stimulation-only and stimulation-nutrition groups, although the group with both stimulation and nutrition had somewhat stronger outcomes. This is not to say that nutrition plays no role in physical development. The nutrition supplement for the child was often shared with the family, so it may not have been sufficient to produce better outcomes. Other studies have shown cognitive benefits from nutritional supplementation in the first 24 months. Findings in this study point to the importance of early learning and parental engagement in producing greater economic outcomes.

# The Heckman Equation



## Encouraging parental investment pays off.

In addition to improving direct parent-child interaction during the earliest years, it seems that the program promoted greater parental investments later in life that contributed to improved educational attainment and later adult earnings. Children left the program with higher levels of skills and parents may have realized that education provided greater returns than they previously thought. For example, by age 22, treated children had 0.6 more years of schooling than the control group, and full-time school enrollment was five times higher among treated children. The program may have improved children's skills to the point where families were encouraged to seek greater education and employment opportunities. Twenty-two percent of the families in the treatment group immigrated to countries with great opportunities for upward mobility, compared with only 12% of control group families.

## Early education produces better life outcomes at age 22.

Among treated children, early childhood education compensated for early developmental delays, narrowed the achievement gap and reduced inequality later in life. Treated children showed significant long-term improvements in cognition, psychosocial skills and schooling attainment as well as reduced participation in violent crime<sup>2</sup> and substantial gains in earnings that put them on par with peers who were not growth-stunted.

## Early education delivers substantially better economic outcomes.

Early childhood education increased earnings by 25%, enough for growth-stunted children to completely catch up to the earnings of the non-stunted comparison group. The control group remained far behind. In fact, average earnings from full-time jobs were 25% higher for the treatment group than for the control group. Ninety-eight percent of treated children had been employed at age 22, with 94% in full-time jobs.

<sup>1</sup> Gertler, Paul, James Heckman, Rodrigo Pinto, Arianna Zanolini, Christel Vermeersch, Susan Walker, Susan M. Chang, Sally Grantham-McGregor. "Labor market returns to an early childhood stimulation intervention in Jamaica." *Science* 344.6187 (2014): 998-1001.

<sup>2</sup> Walker, S. P., S. M. Chang, M. Vera-Hernández, and S. Grantham-McGregor. "Early childhood stimulation benefits adult competence and reduces violent behavior." *Pediatrics* 127(5) (2011): 849-857.

