Poverty is Not Just an Indicator: The Relationship Between Income, Poverty, and Child Well-Being

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ABSTRACT

In this article, we review the evidence on the effects of poverty and low income on children’s development and well-being. We argue that poverty is an important indicator of societal and child well-being, but that poverty is more than just an indicator. Poverty and low income are causally related to worse child development outcomes, particularly cognitive developmental and educational outcomes. Mechanisms through which poverty affects these outcomes include material hardship, family stress, parental and cognitive inputs, and the developmental context to which children are exposed. The timing, duration, and community context of poverty also appear to matter for children’s outcomes—with early experiences of poverty, longer durations of poverty, and higher concentrations of poverty in the community leading to worse child outcomes.

KEYWORDS: child development; income; poverty

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RATES OF CHILDHOOD poverty in the United States have remained very high over the past 40 years. According to the official poverty measure, approximately 1 in 5 children live in families with incomes below the federal poverty threshold ($23,834 for a family of 4 in 2014), and the child poverty rate has been near or above 20% (ranging between 16 and 23 percent) for most years since the end of the 1970s (Figure). Alternative poverty measures that incorporate improvements show more progress in reducing child poverty rates over time (see Wimer et al, in this issue of Academic Pediatrics), but by any measure contemporary child poverty rates remain troublingly high.

The childhood poverty rate is a vital indicator of children’s well-being. As a measure, the child poverty rate tells us how many children at a point in time are living in families with annual incomes or economic resources that are below a consistent threshold considered insufficient to meet basic needs. The child poverty rate is thus a key indicator of a society’s health and well-being. It contributes to our understanding of whether our economy is working well, if it is distributing the nation’s economic gains to its most vulnerable and dependent citizens, and if it is equipping the nation for the future by supporting the human capital formation of future workers.

The child poverty rate is also a moral standard of what a society is willing to allow children to experience by the accident of their births into particular circumstances, which in many cases, means suffering the deprivation of basic needs by which to grow and come of age, facing diminished opportunities for success, and limited chances for full participation in their society’s growth and development.

Child poverty measures are blunt and imperfect, and alone are insufficient to understand the true level of deprivation of children in the United States. However, the child poverty rate does provide a consistent marker that has been used to depict a widening picture of the nature and consequences of economic deprivation early in life over the past century. As such, it continues to provide an important tool for understanding how income and deprivation in childhood compromise children’s healthy development and opportunities to succeed later in life.

In this article we briefly review the research of the relationship between family poverty experienced during childhood and the well-being and outcomes for children, including into young adulthood. Next, we discuss 2 of the primary mechanisms that researchers have identified for how poverty affects children’s developmental outcomes, through the material hardships and constrained investments families are able to make and through parental stress and limitations on parenting capacities. Finally, we review the extent to which the effects of childhood poverty vary on the basis of its timing, duration, and concentration. We conclude with a brief summary of findings.
THE EFFECTS OF CHILDHOOD POVERTY ON CHILD WELL-BEING AND OUTCOMES

One of the reasons we care about the childhood poverty rate beyond its role as an indicator, is the strong link between family poverty experienced during childhood and the well-being and outcomes for children, including into young adulthood. Many studies over the past several decades have documented the significantly worse outcomes and conditions across various measures of child health, education, and behavior for children who live in poor families and their experience during childhood and into adulthood compared with nonpoor children. The child poverty rate, however, does not capture benefits distributed through the tax system, such as the Earned Income Tax Credit or Child Tax Credit. Nor does it capture in-kind benefits like housing assistance or food stamps. Both of these are substantial antipoverty programs that provide resources to low-income families with children.

In a 1997 article for the Future of Children, Jeanne Brooks-Gunn and Greg Duncan summarized the strength and consistency of associations between child poverty and a wide range of measures of children’s well-being. To provide a similar summary rooted in more contemporary data, we show how numerous developmental indicators vary between poor and nonpoor children (Table). Among health measures, childhood obesity was 40% more prevalent among poor families; asthma was 30% more common; and, children in poor families were 4 times more likely to be in fair or poor health. For education, grade repetition and dropping out of high school were approximately twice as likely among poor than nonpoor children. Children who were poor were nearly 9 times more likely to have very low food security and almost 7 times more likely to become a teenage mother. The size of many of these simple associations between childhood poverty and the wide range of measures of child well-being and longer-term outcomes are startlingly large, and consistent with the scale of differences for many of these indicators between poor and nonpoor children from 2 decades before.

As Table shows, it is well established that children from poor families do less well than children from higher-income families across a wide spectrum of health conditions, developmental and educational outcomes, material hardship levels, and other key outcomes from birth to early adulthood. This has led to a wealth of research on whether these relationships are causal. That is, is it the lack of income itself that leads to poor outcomes for children, or is it something else about poor children or their families that leads to poor outcomes, something that is merely correlated with lack of income. This “something else” could be anything that differs between poor and nonpoor families other than poverty: parenting skills, education, availability of time, genetics, etc. Although there remains some debate in the literature on this subject, the balance of the research supports the conclusion that income poverty is causally related to children’s developmental outcomes. In this section, we briefly review what we know about the relationships between income, poverty, and children’s developmental outcomes.

As with most research questions of this sort, early research focused on observational studies on the empirical relationships between income, poverty, and various developmental outcomes, controlling for other observed factors that might be associated with both. In general, these studies reported evidence in support of the idea that income might lead to improvements in child outcomes—evidence that was consistent with some later research that used more sophisticated techniques to move closer to causal claims, such as sibling models that compare siblings who experience different family incomes during their childhoods or fixed-effects models that harness change in income over time within families. Even these more analytically sophisticated studies have difficulty ruling out competing alternatives.

Clearer evidence comes from a set of natural experiments and experimental studies that have taken place in recent decades. An early study of the effects of the experimental negative income tax reported that the program had positive effects on children’s academic performance, at
least for younger children and especially for children in the poorest families.15,16 These interventions, however, changed employment and income of parents, so it is not possible to isolate the effects of income poverty itself from the results of these experiments, although it again is suggestive of such effects.17,18

Duncan et al17 review much of the literature of studies that purport to establish a causal effect of income on child outcomes. Almost all of these studies strongly suggest a causal effect of income on children’s outcomes, although often the effect sizes in such studies suggest that it would take substantial income boosts to provide a meaningful change in children’s outcomes. Dahl and Lochner,19 for instance, harness change generated by expansions in the Earned Income Tax Credit to show that increased income is associated with improved academic achievement. Milligan and Stabile20 use variation in Canada’s National Child Benefit’s generosity across Canadian provinces to show evidence for positive effects on math and vocabulary scores. An important set of studies in North Carolina that compared American Indian to non-American Indian families, wherein American Indian families began receiving an exogenous change in their incomes because of distribution of casino profits from a newly-opened casino in the region, found that this exogenous change led to improved educational outcomes, reduced crime, and fewer psychiatric and psychopathologies in childhood and adolescence.21-23 Duncan et al24 reported similar results by harnessing data from 16 welfare reform experiments, some of which improved income and others that changed employment outcomes only without improving incomes. Using random assignment as an instrument for income, they also reported positive effects of income on the academic achievement of young children.17

Taken together, the body of the evidence does suggest that improved income and reduced poverty can lead to meaningful improvements in children’s outcomes, particularly their academic and educational outcomes. How would improving family incomes and reducing family poverty lead to these improvements? We review this in the next section.

### Table. Selected Population-Based Indicators of Well-Being for Poor and Nonpoor Children in the United States

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Percentage of Poor Children (Unless Noted)</th>
<th>Percentage of Nonpoor Children (Unless Noted)</th>
<th>Ratio of Poor to Nonpoor Children</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical health conditions/outcomes (for children between 0 and 17 years and in year 2014 unless noted)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reported to be in excellent health</td>
<td>48.9</td>
<td>66.9</td>
<td>0.7</td>
</tr>
<tr>
<td>Reported to be in fair to poor health</td>
<td>3.2</td>
<td>0.8</td>
<td>4.0</td>
</tr>
<tr>
<td>Uninsured for health care</td>
<td>6.2</td>
<td>3.5</td>
<td>1.8</td>
</tr>
<tr>
<td>Currently has asthma</td>
<td>11.0</td>
<td>8.2</td>
<td>1.3</td>
</tr>
<tr>
<td>Obesity (ages 2–19 years; 2009–2012)</td>
<td>21.2</td>
<td>15.7</td>
<td>1.4</td>
</tr>
<tr>
<td>Made 1 or more emergency room visits in past 12 months</td>
<td>24.4</td>
<td>12.7</td>
<td>1.9</td>
</tr>
<tr>
<td>Missed 11 or more school days in past 12 months because of illness or injury (ages 5–17 years)</td>
<td>4.8</td>
<td>2.9</td>
<td>1.7</td>
</tr>
<tr>
<td>Developmental conditions/outcomes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning disability (ages 3–17 years)</td>
<td>10.1</td>
<td>5.3</td>
<td>1.9</td>
</tr>
<tr>
<td>Serious emotional or behavioral difficulty (ages 4–17 years; 2012)</td>
<td>7.8</td>
<td>4.5</td>
<td>1.7</td>
</tr>
<tr>
<td>Education conditions/outcomes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grade repetition (reported repeated a grade; ages 6–17 years)</td>
<td>18.0</td>
<td>7.8</td>
<td>2.3</td>
</tr>
<tr>
<td>Receiving special education or early intervention services</td>
<td>10.4</td>
<td>6.2</td>
<td>1.5</td>
</tr>
<tr>
<td>School-aged child with IEP (ages 6–17 years; 2012)</td>
<td>14.4</td>
<td>10.6</td>
<td>1.4</td>
</tr>
<tr>
<td>Attends unsafe school (reported child is never or sometimes safe at school)</td>
<td>15.1</td>
<td>5.3</td>
<td>2.8</td>
</tr>
<tr>
<td>High school dropout (percentage of 16- to 24-year-olds who were not in school or did not finish high school in 2013)</td>
<td>10.7</td>
<td>5.7</td>
<td>1.9</td>
</tr>
<tr>
<td>Food and nutrition conditions/outcomes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food-insecure children (report 3 or more food-insecure conditions among 18 questions used to assess food security among households with children)</td>
<td>25.0</td>
<td>6.0</td>
<td>4.2</td>
</tr>
<tr>
<td>Children with very low food security (report 8 or more food-insecure condition among 18 questions or report 5 or more food-insecure conditions specifically focused on children’s food security)</td>
<td>3.5</td>
<td>0.4</td>
<td>8.8</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Woman who had 1 or more teen, unmarried births†</td>
<td>27</td>
<td>4</td>
<td>6.8</td>
</tr>
<tr>
<td>Woman who had 1 or more unmarried births (before age 30 years)‡</td>
<td>42</td>
<td>10</td>
<td>4.2</td>
</tr>
<tr>
<td>Man, ever arrested (before age 30 years)‡‡</td>
<td>21</td>
<td>14</td>
<td>1.5</td>
</tr>
<tr>
<td>Annual earnings at age 30 years†‡</td>
<td>$30,500</td>
<td>$52,300</td>
<td>0.6</td>
</tr>
</tbody>
</table>

IEP indicates individualized education program.

*Children are divided into family income quartiles, with children in lowest quartile approximating children who are income-poor and other three quartiles non-poor children.

†Data from the Panel Study of Income Dynamics.11 Ratcliffe C, McKernan SM. Based on children born between 1967-1989; outcomes measured at ages 20. 2012.

‡Data from The Panel Study of Income Dynamics.11 Magnuson K, Ziol-Guest K. Based on 2122 children born between 1968 and 1978; outcomes measured at age 30.
**Mechanisms by Which Income Poverty Affects Child Outcomes**

If more income leads to improved developmental outcomes for children, why might that be the case? In this section, we describe some of the mechanisms by which poverty and low income might compromise children’s development, and alternatively, how improved family incomes and reduced poverty might improve children’s outcomes. Poverty directly reduces the resources available for day to day consumption, leading to increased levels of what researchers call “material hardships.” Such hardships can include inability to afford adequate and nutritious food (“food insecurity”), or inability to meet other basic needs, such as housing, medical care, or bills and utilities. Experiences of material hardship are substantially, although not perfectly, linked to family income and poverty. Experiences of material hardship have, in turn, been linked to worse child outcomes. In addition, income poverty is associated with lower parental capacity to invest in developmental inputs that contribute to children’s development and educational outcomes, including educational toys, books, and high-quality early care and education.

Poverty has also been found to compromise family processes conducive to healthy child development. Poverty and low-income adds to parental stress and the relational qualities that provide the context for rearing children. There is a long line of research in the so-called “family stress model” highlighting the associations between income loss, parental stress, and compromised marital and parental relationships. Low poverty-level incomes contribute to psychological distress for parents and reduce their capacity to engage in warm, responsive interactions with children that are key to stimulating children’s growth, development, and socioemotional security. Poverty and economic insecurity contribute to higher levels of maternal depression and other mental health challenges that affect parents’ responses to and interactions with children. Across childhood low family income has been linked to many relational qualities between parents and their children, including less secure attachment, less warmth, less attention, harsh discipline, and negative mood.

In addition to family processes and stress, poverty and low income have also been linked to a heightened experience of what some researchers label a “context of chaos.” Experiences of chaotic home lives and community conditions such as substandard housing, community violence, and neighborhood disorder have in turn been linked longitudinally to worse socioemotional outcomes for children and youth. Experiences of chaos and stress might lead to the impairment of children’s ability to adapt physiologically to their environment, hampering their long-term outcomes. For example, increased allostatic load in children in response to external stress might compromise healthy physiological and mental processes, and contribute to worse child outcomes. The processes by which poverty increases parental stress might be especially important in the earliest years when the home environment and parenting are primary forces shaping children’s biological, neurological, and psychosocial pathways. There has been an especially rapidly developing literature on how chronic stress in the first years of life negatively affects the functioning of children’s immune systems and the structure and function of the young brain.

**The Timing, Duration, and Concentration of Childhood Poverty Exacerbate the Effects on Child Outcomes**

Poverty is a common experience among American children, but one that varies in its timing, duration, and concentration. More than one-third of all children experience poverty for at least 1 year during childhood; more than 60% of children never experience poverty. Children who experience at least 1 year of poverty, on average, have worse outcomes than children who are never poor, suggesting that childhood poverty is a deleterious experience for many children who experience it. Yet, the consequences of poverty can be much worse still on a range of outcomes for children who experience poverty for at least 1 year or persistently over the course of childhood, and those who experience it as a concentrated, common experience in very disadvantaged communities. Poverty also varies in its intensity, with some families falling much further below the poverty line than others. Although this also can be important for children’s development, and outcomes are worse for children who experience extreme poverty, it is beyond the scope of this article.

**Poverty at Birth and in Early Childhood**

Not only are poverty rates for children higher in the United States than for working-age adults or the elderly, as we saw in the Figure, but among children, poverty rates are their highest in the earliest years of childhood. In 2013, 5.4 million children (22%) younger than age 6 years lived in poverty, and 40% of all children younger than 6 years experience early childhood poverty lasting at least 1 year. Being born into poverty strongly predicts future childhood and adult poverty. Early childhood is a period when children are especially vulnerable to the negative effects of their families’ poverty and limited resources. A large body of developmental and neuroscience research shows the important and lasting effects of early environments to building early cognitive and socioemotional capacities and the rapid pace of the brain’s development during the first 3 years of life. Poverty in these early years might promote contexts that evoke stress, which might then negatively affect the structure and function of the young brain.

Early childhood poverty has been reported to be most strongly associated with negative cognitive development and educational outcomes. Children living in poverty as infants and toddlers are approximately 30% less likely to
complete high school than those who first experience poverty later in childhood. Other studies have similarly reported that poverty in early childhood (between birth and age 5 years) has a significantly greater effect on children’s years of schooling and other education outcomes than the effect of poverty later in childhood, but did not report differences for some other longer-term outcomes—including teen childbearing and whether boys had been arrested by young adulthood—on the basis of the timing of poverty experienced earlier in childhood. None of this is to suggest that poverty experienced later in childhood is inconsequential for long-term outcomes, but simply that early childhood has been reported to be a period in which children are particularly vulnerable to the deleterious effects of scarce resources.

**Effect of Chronic Versus Short-Term Poverty**

Poverty over longer periods makes it more difficult to buffer against the levels of material hardships and psychological stress, making persistent poverty more strongly predictive of children’s later well-being than shorter bouts of poverty. For many who experience poverty in childhood, poverty lasts only a relatively short duration, but for some, poverty persists for significant lengths of time across childhood, and this is especially true of children who are in poor families at the time of their birth and during early childhood. Caroline Ratcliffe and Signe-Mary McKernan found that among a nationally representative sample of children born over the course of more than 20 years, half of those who were born into poor families spent most of their childhood in poverty. In contrast, of children who are not born into poor families, only 4% (or 1 in 25) go on to be persistently poor in childhood, and nearly 90% of those who were not poor during their early childhood years never experienced poverty in middle childhood or in their adolescent years. Experiencing persistent poverty is even more common among children of color. African American children, who have 3 times the poverty rate of white children overall, are even more likely to be persistently poor than other racial and ethnic groups. Although approximately one-third of white newborns who are born into poor families go on to be persistently poor across childhood, this is true for approximately two-thirds of black newborns. Among African American children who are not in poor families at the time of birth, more than 15% have nevertheless gone on to become persistently poor across childhood; for white children who are not poor at birth, just 1% become persistently poor.

In a recent study, children who were persistently poor were much more likely than those who were never poor or poor for shorter periods to not graduate from high school, earn significantly lower earnings as adults, to be poor as adults, and to report being in poorer health as adults. In addition, boys who experienced persistent poverty were more likely to have been arrested by young adulthood, and girls who experienced persistent poverty were much more likely to have had teen nonmarital births and nonmarital births as adults. This is consistent with the relationship between persistence of poverty during childhood with worse adolescent and adult outcomes reported in previous studies. The greater the duration of childhood poverty the greater is the likelihood of all of these negative outcomes. Although precise estimates of causal effects are difficult to glean from such studies, the bulk of the evidence suggests that more persistent poverty is worse for children than less persistent poverty.

**Effect of Concentrated and Neighborhood Poverty**

In addition to the timing and persistence of childhood poverty, children are also affected by the level of poverty in their community, particularly those who live in areas of high poverty. Magnuson reported on recent analyses showing that child outcomes vary a lot according to neighborhood poverty levels in addition to family poverty. Across a range of early childhood outcomes—reading and math skills at kindergarten entry, reported poor health—children in areas with higher levels of neighborhood poverty have worse outcomes, and this is particularly true for children who are in poor families, but also true for children in nonpoor families. This is consistent with much previous research that reported living in severely disadvantaged communities might be an exacerbating factor that contributes to worse child outcomes than family poverty alone. Recent studies further suggest that neighborhood poverty can lead to a range of worse outcomes for children as they move into adulthood and even into future generations, and that several aspects of the community—low-quality schools, high levels of joblessness, social isolation, lack of positive peer influences, low efficacy on the part of neighbors—might contribute to these outcomes.

**Conclusion**

Poverty statistics are important indicators of the health of the economy and the level of children’s well-being. However, poverty is more than just an indicator. As we have argued herein, poverty and low income appear to be causally related to poor child outcomes, particularly cognitive and educational outcomes. Poverty and low income likely exert their effects through material hardships, family stress, and reduced parental cognitive input and spending. And it is not just poverty per se that matters, but it is timing, duration, and concentration in the community context. Although there have been important advances by social scientists in improving our understanding of the dimensions, mechanisms, and potentially causal relationships related to childhood poverty, there is potentially much more to be learned. There is an ongoing need for rigorous and innovative research, and academic pediatricians in particular can inform the field about the biological effects of poverty, and the potential approaches to address the effects of poverty through medical practice. Reducing child poverty through public policy would contribute to
meaningful improvements in children’s health, development, and well-being.

REFERENCES


