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The Effects of Maternal Depression on Early Childhood Development and Implications for Economic Mobility

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Contents

Part 1: The Problem	2
1.1 Poverty increases the risk of maternal depression	2
1.2 Maternal depression can weaken attachment	4
1.4 Weaker attachment can damage child development	5
1.4 Slower development can damage child outcomes	9
1.5 Worse child outcomes can increase the risk of future poverty	11
Part 2: Possible Solutions.....	13
2.1 Reduce poverty	13
2.2 Reduce the impact of poverty on depression among caregivers	15
2.3 Reduce the impact of caregiver depression on early child development	16
2.4 Reduce the impact of weaker early child development on later outcomes	20
Conclusion.....	21

Rates of upward economic mobility in the U.S. are too low: on this there is little disagreement from any political quarter. Only half of those born in 1980 will surpass their parents in terms of economic fortunes, compared to 90 percent of those born in 1940.¹ There are huge differences in life outcomes for children born to parents on different rungs of the socioeconomic ladder.

The resources available to families are usually viewed through an economic lens, most obviously in terms of income and wealth. To use economic language, poor families are credit-constrained. Somewhat more broadly, resources may be seen to include access to educational institutions, especially those of good quality, or to other services including health care.

But relationships are resources, too. At a community level, relationships are the building blocks for networks, connections, and trust, loosely described as social capital. Within families, strong and positive relationships create an environment within which children and adolescents can develop skills, confidence, and aspirations.

For a very young child, the relationship with a primary caregiver, most often though not exclusively a mother, lays an important psychological foundation for later flourishing. Successful attachment and bonding in the first two years of life predicts healthy later development on a range of fronts, from mental health to educational skills. When bonding and attachment prove difficult, child development is affected. Recent advances in brain science allow this impact to be shown more clearly and more definitively.

One of the biggest risk factors for successful bonding and attachment is poor mental health on the part of the primary caregiver. In particular, a parent who is depressed finds it more difficult to engage, connect, and bond with a baby or toddler. Given that mothers remain most likely to be the primary caregiver, maternal depression can therefore be an important risk factor for early child development. About 10 to 20 percent of mothers will be depressed at some time during their lives, and one in eleven infants will experience their mothers' perinatal depression.² Mothers who are poor are more likely to suffer from depression, and maternal depression seems to have a bigger impact on early child development in low-income families than more affluent ones.

So: poverty increases the risk of depression, which can weaken attachment and therefore slow early child development. A weaker developmental start increases the risk of poor educational outcomes, which in turn heightens the risk of future poverty. And so the cycle turns.

We argue in Part 1 of this paper that maternal depression is an under-acknowledged factor in the intergenerational transmission of poverty, and lack of economic mobility. Specifically, we show that:

- I. Poverty increases the risk of maternal depression;
- II. Maternal depression can weaken attachment;
- III. Weaker attachment can impair child development;
- IV. Slower development can damage child outcomes; and
- V. Worse child outcomes can increase the risk of future poverty.

Since our focus here is on the role of the mental health of caregivers in the very early years, we spend more time on these particular links in the chain. The other links—for instance, between child and adult outcomes—are treated only briefly, with pointers to the broader literature.

In Part 2 we draw out some policy approaches to breaking the cycle at each point. This is an area where a “two-generation” approach may pay dividends. Specifically, we suggest policies to:

- I. Reduce poverty;
- II. Reduce the impact of poverty on depression among caregivers;
- III. Reduce the impact of caregiver depression on early child development; and
- IV. Reduce the impact of weaker early child development on later outcomes.

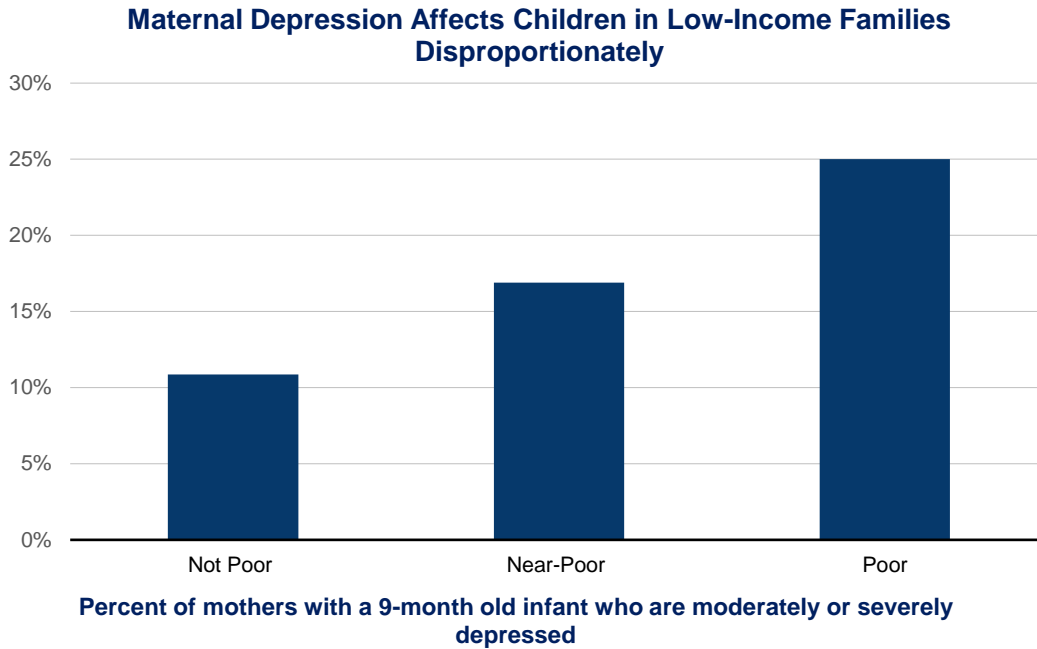
Again, our primary focus in this paper is on depression (2.2) and early development (2.3). The sections on poverty reduction and later interventions are largely illustrative.

Part 1: The Problem

1.1 Poverty increases the risk of maternal depression

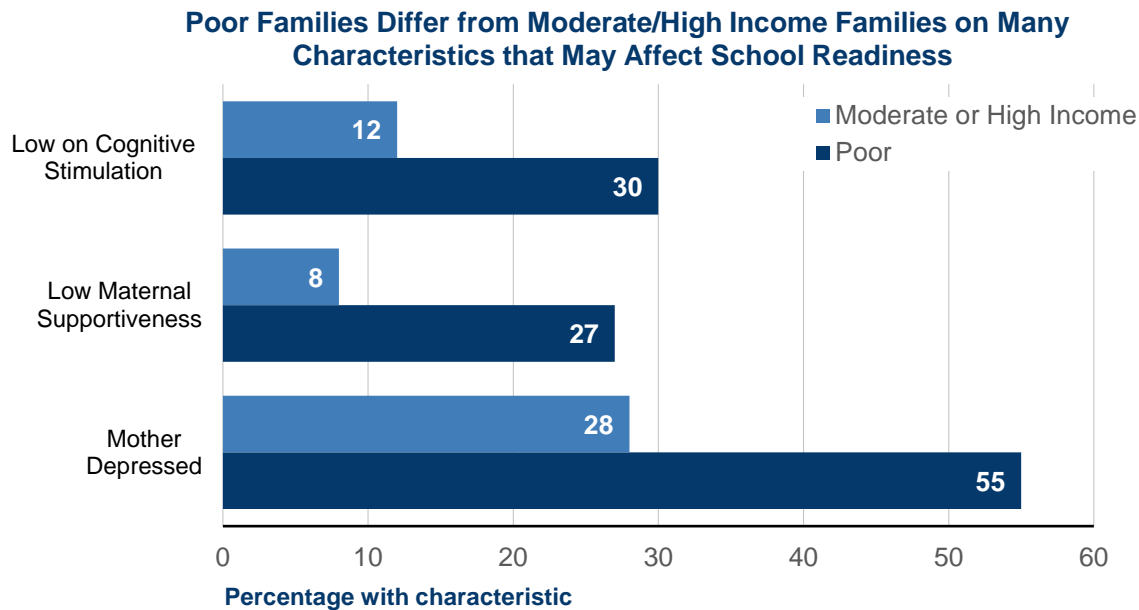
The financial hardship of poverty often coexists with unemployment, food insecurity, poor-quality or unstable housing, dangerous neighborhoods, partner conflict, and other stressors that can be damaging to mental health. The stress related to poverty can increase the “cognitive load,” according to work by Sendhil Mullainathan and others.³

Among mothers, depression is the most likely mental health problem to be associated with poverty.⁴ Poor mothers are much more likely to be depressed than more affluent ones (28 versus 17 percent, respectively), according to Liaw and Brooks-Gunn (1994).⁵ Other research indicates that depressive symptoms are four times more common among poor mothers than middle-income mothers.⁶ Figure 1 below shows that 25 percent of mothers in households below the federal poverty threshold experience moderate-to-severe levels of depression.⁷ Figure 2 confirms the relationship between poverty, maternal depression, maternal supportiveness, and cognitive stimulation.⁸ Maternal depression may exacerbate maternal supportiveness and cognitive stimulation among poor mothers.



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Figure 1. Source: Center on the Developing Child at Harvard University (2009).



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Figure 2. Source and Notes: Brookings tabulations of data from the Early Childhood Longitudinal Study-Birth Cohort (ECLS-B). Poor at birth is defined as household income less than 100 percent of poverty and moderate or high income is defined as household income at or above 185 percent of poverty. Prevalence of characteristics among near-poor children (incomes 100-185 percent) is not shown but always lies between the two other groups for all characteristics shown in the figure.

Of course, the relationship between poverty and mental health is likely to run both ways, in terms of causation. Depression makes it harder to secure and maintain a job, for example.⁹ Noonan et al. (2014) find that maternal depression during the first year of life “increases the likelihood that children and households experience any food insecurity” by between 50 and 80 percent by the time the child is two.¹⁰ They also find that maternal depression increases the likelihood of reliance on a variety of means-tested government programs, including SNAP, Medicaid, and TANF.

Poverty can be a cause of depression not only at an individual or family level, but also at the neighborhood level.¹¹ The depressive effect of poverty is a particularly salient issue in terms of the family learning environment because there are so many parents in poverty. Almost one in five children lived in households below the official poverty line in 2017, and the poverty rate varied from 41 percent of children in single-mother families to only 8 percent of those in married-couple families. There are large race gaps here, too. While 11 percent of non-Hispanic white children are in a poor household, the rate is 25 percent for Hispanic children and 29 percent for non-Hispanic black children.¹²

The concentration of poverty among single parents means that their children face multiple risks: not only poverty and related dimensions of disadvantage, but also the environmental stresses associated with living in poverty, which in turn put their mothers at greater risk for developing depression.

1.2 Maternal depression can weaken attachment

While there is a strong link between poverty and maternal depression, it is important to note that depression afflicts mothers of all economic backgrounds and family types. An estimated one in ten children experience a depressed mother in a given year,¹³ and between 10 and 20 percent of new mothers experience lasting depression after delivery.¹⁴

Mothers may experience depression during pregnancy (prenatal depression), as well as within the first few months after a child is born (postpartum depression), both of which may affect children’s development. During pregnancy, depressed mothers produce stress chemicals that might reduce fetal growth, increase the risk of premature labor, and increase risk of autoimmune health problems after birth. Additionally, living with a depressed mother affects a child’s stress response system, increasing a child’s risk of producing higher and more fluctuating levels of stress chemicals and increasing the risk of hypertension.¹⁵ Further, maternal depression greatly influences the quality of mother-infant interactions and attachment which, as discussed above, greatly impact children’s healthy development.

While maternal depression varies in its chronicity and scope, it is generally characterized by sadness, irritability, anxiety, loss of energy, loss of interest in caring for oneself and others, as well as a host of other symptoms that affect the ways that mothers interact with their young children and influence children’s experiences and physiological development.¹⁶ Depression can raise stress hormones to toxic levels and, alongside other symptoms of depression, make it more difficult for parents to be sensitive and responsive to their young children’s signals, as well as depriving them of the energy, focus, and patience necessary to having quality interactions and relationships with their children.¹⁷

Lyons-Ruth et al. (1986), for example, find that depressed mothers are more likely to exhibit hostile and intrusive behavior to their young children, and that increased levels of maternal depression are associated with poorer mental health and motor development among infants.¹⁸

Other researchers have considered the negative impacts of maternal depression on children's attachment specifically, which is likely related to the association between depression and poor-quality mother-infant interactions.¹⁹ Beeber, Perreira, and Schwartz (2008) note, "Depressive symptoms further impair mothering by slowing the mother's response or by provoking intrusive responses that do not match the infant's or toddler's cues."²⁰

Murray et al. (1996) similarly find that depressed mothers tend to be less sensitively attuned to their infants and exhibit more negative interactions with their children than mothers who are mentally well.²¹ These weaker mother-infant interactions among depressed mothers predicted poorer cognitive outcomes among children at 18 months. A wealth of other research supports the idea that the incidence and severity of maternal depression influences the quality of mother-infant interactions with adverse consequences for children's development.²²

As the Center on the Developing Child, an interdisciplinary working group focusing on early childhood development based at Harvard University, explained:

"When caregivers are sensitive and responsive to a young child's signals, they provide an environment rich in serve and return experiences, like a good game of tennis or Ping-Pong. However, if depression interferes with the caregiver's ability to regularly provide such experiences, these connections in the child's brain may not form as they should. The difference between a child who grows up in a responsive environment and one who does not can be the difference between the development of strong or weak brain architecture, which serves as a foundation for the learning, behavior, and health that follow."²³

Given the relationship between poverty and depression, and between depression and parenting, it is not surprising that income gaps can be seen in key parenting behaviors. Isaacs (2012) reports, for example, that mothers in poor families are more than three times as likely to receive low scores on a maternal supportiveness index (see Figure 2). This index included measures of parental sensitivity, parental regard, and parental cognitive stimulation.²⁴ Given the interactions between depressive symptoms and the provision of maternal support and care, these findings reinforce the point that children raised in poverty are likely to suffer from relational as well as material disadvantages.

1.4 Weaker attachment can damage child development

Attachment, sensitivity and responsiveness provide the foundation for child development, including brain development. Depression can be a key barrier here, as Petterson and Albers (2001) show using three separate indicators of children's development. The first assessed overall development using 16 items listed in the Denver Developmental Screening Test (DDST), the second contained seven items associated with cognitive development, while

the third considered seven items related to motor skill development.²⁵ The children of depressed mothers suffered on all three measures, with the largest impacts on cognitive development. They also considered specifically how *chronic* depression influences these outcomes, and found that the “difference in cognitive scores between children of chronically depressed and never depressed mothers” was 0.47 standard deviations for girls and 0.36 standard deviations for boys.²⁶ In general, as might be expected, long-term maternal depression has a bigger impact on child development than short-term experiences with depression, implying that both the severity and chronicity of depression are important factors in early child development.

As the Center on the Developing Child at Harvard University summarizes the research literature:

“In the face of major clinical depression, the drive, energy, and enjoyment needed to build and maintain positive family relationships recedes. Especially when combined with other, related adversities, deep depression is debilitating, making it difficult for mothers to effectively carry out requisite caregiving tasks and responsibilities and to build and maintain nurturing relationships with their children. This may explain why, when raised by a chronically depressed mother, children perform lower, on average, on cognitive, emotional, and behavioral assessments than children of nondepressed caregivers, and they are at risk for later mental health problems, social adjustment difficulties, and difficulties in school. Such patterns may also forecast difficulties in adult life across a variety of important domains, including employment and health.”²⁷

While these parent-child interactions are consequential throughout childhood, a child’s developmental trajectory is particularly sensitive to the quality of relationships and interpersonal interactions experienced during a child’s very early years, between about 0-2 years old.

Most of the research on parent-child interactions focuses on the relationships between mothers and their very young children, as mothers tend to spend more time directly interacting with and caring for their children. But it is important to note that father-infant interactions also affect children’s development in substantive and unique ways.²⁸ Regardless of the identity of the main caregiver, healthy cognitive and behavioral development is promoted in the context of a close and dependable relationship.²⁹ Without at least one such relationship, development can be disrupted in ways that put a child at risk for maladaptive behaviors throughout his or her life.³⁰ Growing up in emotionally nurturing environments is beneficial to both cognitive and socioemotional (non-cognitive) skill development,³¹ and extensive empirical evidence suggests that the quality of the caregiver-infant relationship heavily influences future outcomes.³²

The relationship between mother-infant interactions and children’s development is complex and expands numerous disciplines of research, but neuroscience has been particularly influential in guiding our understanding of how these interactions directly influence the architecture of the developing brain. Parenting, the quality of caregiving, or the incidence of adverse or stressful life events influence developmental outcomes through measurable changes to brain structure and neural circuitry.³³

The human brain develops rapidly during the first few years of life—an infant’s brain reaches 80 percent of its adult size by the age of two³⁴—and thus there is good reason to believe that the quality of parent-child interactions experienced during these years could substantially alter a child’s developmental trajectory. Just as high-quality interactions benefit children’s development, so low-quality interactions or stress impede development. A longitudinal study documented by Sroufe et al. (2005) found that children who are unable to form secure attachments, usually in response to poor-quality parent-child interactions, are at higher risk for developmental disorders and psychopathy.³⁵

Further, insecure attachment is an intergenerational issue. Strikingly, Sroufe et al. find parallels between how mothers interact with their children at 24 months and how these children interact with their own 24-month-old children, around 20 years later.

The quality of interactions between mothers and their infants can influence children’s development through a number of mechanisms. Attachment theory suggests that infants are biologically driven to seek proximity to and comfort from a primary caregiver when distressed or fearful because this promotes survival. From these daily exchanges, infants begin to develop an expectation for the behavior of their caregiver.³⁶ Starting at six months of age, infants calibrate interactions with their caregiver accordingly to increase the odds that their needs will be met.³⁷ The attachment relationship that develops provides a cognitive framework, or “internal working model,” through which children understand themselves and their relationships with others.³⁸ A secure attachment forms when the caregiver consistently responds appropriately to what the child needs, ensuring the infant learns to explore his or her environment with confidence and to confront challenges effectively because he or she knows that the caregiver will be accessible and helpful. Insecure attachment results from insensitive or inconsistent care,³⁹ such as consistently low-quality or inconsistent parent-child interactions that are more common among mothers experiencing depression and other mental health issues related to stress. Figure 3 below shows the results from a study by Matte-Gagne et al. As the authors write, “the significant relation between attachment and child initial performance on three tasks measuring different EF [executive functioning] skills appears to suggest that secure attachment relationships may promote young children’s global executive competence.”⁴⁰

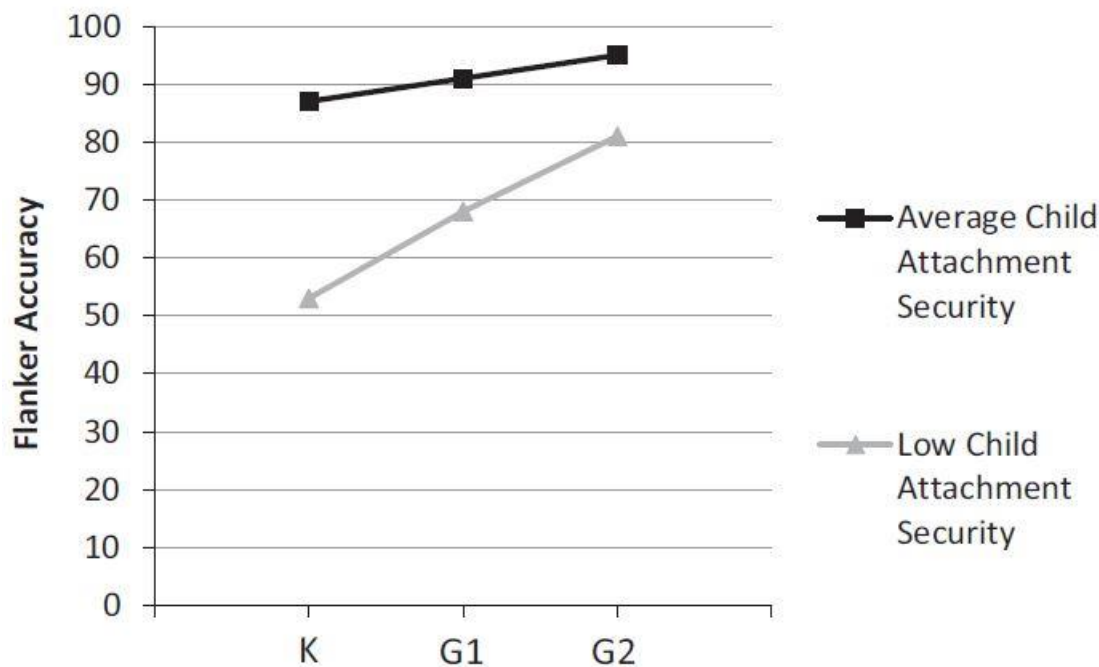


Figure 3. Source: Matte-Gagne, Celia; Bernier, Annie; Sirois, Marie-Soleil; Lalonde, Gabrielle; Hertz, Sarah, *Child Development*, 2018. “Relation between child attachment security and growth in performance on the Flanker task. Figure illustrates the estimates derived from Tobit growth models for a child having an attachment security score one standard deviation below the mean (low), and within one standard deviation of the mean (average). K = kindergarten; G1 = Grade 1; G2 = Grade 2.”

A large body of research regarding the relationship between caregiver-infant interactions and brain development has focused on circumstances of extreme neglect and abuse.⁴¹ De Bellis and Kuchibhatla (2006) found that infants who experienced abuse and neglect and later developed post-traumatic stress disorder had smaller cerebellar and cerebral volumes correlating with earlier onsets and increased durations of abuse.⁴² Romanian orphanage studies, which have proven particularly influential in this line of research, have shown that extreme relational deprivation and adversity during infancy impedes healthy brain development.⁴³ However, a relatively smaller subset of empirical work considers less extreme variation in parenting quality and how these subtler variations affect the developing brain. A study by Hane and Fox (2006) for example found that infants receiving very low-quality maternal caregiving behavior were more likely to show right frontal asymmetry,⁴⁴ which is reflective of a disposition toward anxiety and negative affect.⁴⁵

One recent study by Bernier, Bell, and Calkins (2016) considered how variations in the quality of mother-infant interactions affected infants' brain development.⁴⁶ The results indicated that higher-quality interactions (measured based on a coding scheme assessing maternal sensitivity, intrusiveness, positive affect, and physical stimulation) predicted higher frontal resting electroencephalography (EEG) power and increases in power among infants involved in the study. The authors suggest that, while causality cannot be inferred, the results imply that parenting quality has a reliable but potentially modest relationship with childhood brain development.

Taken together, these studies reinforce the message that early parenting behavior critically shapes infants' development, including brain development. While certain behaviors are transmitted genetically, others are transferred epigenetically, through the daily interactions that parents have with their infants.⁴⁷ Consistent and quality caregiving relationships provide a cognitive framework that fosters a child's healthy development. However, when parent-child relationships suffer and attachment is weak, children's development can suffer.

The relationship between depression, attachment, and development can be observed in families of all types—though as we have seen, poverty is a major risk factor for depression in the first place. But there is evidence that depression has an even bigger impact in poor households. Petterson and Albers (2001) find that the deleterious effect that maternal depression has on children's cognitive development may be, to a certain extent, mitigated by positive influences of affluence.⁴⁸ That is, holding mothers' income or education constant, maternal depression appears to have a bigger impact on the outcomes of children in poor families.

The authors hypothesize that the greater resources of more affluent families might help to buffer the effects of maternal depression. For example, higher-income families might be able to afford substitute childcare, while low-income single mothers cannot afford supplemental caregivers. Other research supports the idea that the effects of maternal depression on children's development might be further exacerbated by the negative effects of poverty, or at least mitigated by the positive influences of affluence. Stein et al. (2008) consider variations in maternal depression and maternal caregiving in the first year of a child's life and its impact on children's language development, and find that while poor-quality caregiving predicted lower language outcomes across socioeconomic groups, the effects of depression on caregiving were stronger in less-advantaged families.⁴⁹

Improving the prospects of children born to disadvantaged circumstances thus requires acknowledging the mutually reinforcing influences of poverty and maternal depression on children's development. As Beeber, Perreira, and Schwartz (2008) describe, “Depressive symptoms interfere with the provision of the strong maternal support needed to counter the hardships of poverty, thus placing infants and toddlers at risk for delayed language, social, and emotional development.”⁵⁰

1.4 Slower development can damage child outcomes

Without a strong developmental start in the very early months and years of life, it is harder to acquire skills later. Of course, nothing is set in stone. Early development does not automatically determine later development. But it clearly and causally influences it. As Heckman and Masterov (2007) explain, “Skill begets skill; learning begets learning. Early disadvantage, if left untreated, leads to academic and social difficulties in later years. Advantages accumulate; so do disadvantages.”⁵¹

If children raised in poor families are also deprived developmentally thanks to weaker caregiver-child relationships, they may lack some social and emotional skills necessary to overcome the tangible and well-documented barriers of growing up in poverty. It is difficult to disentangle the causal influences of poverty and parenting quality on children's economic mobility, though in earlier work (Reeves and Howard, 2013) we estimated that closing the "parenting gap" by raising the quality of parenting among low-income parents to those of affluent parents would result in a 9% increase in high school graduation rates among their children.⁵²

Children living in poverty, regardless of their parents' mental health status, are already at greater risk for delayed social, emotional, and cognitive development that can influence their later achievement.⁵³ But just as poor-quality caregiving can exacerbate these developmental delays, so high-quality caregiving can mitigate the negative impacts of poverty on children's neurological development.⁵⁴ That is, the relational quality of parent-child interactions can either diminish or enhance children's developmental progress, conditional on their family income.

But if developmental deficits persist into adulthood, they may suppress adult incomes and other economic outcomes.⁵⁵ Indeed, cognitive deficiencies do frequently persist throughout life. As Heckman (2008) writes, "A substantial body of research shows that earnings, employment, labor force experience, college attendance, teenage pregnancy, participation in risky activities, compliance with health protocols and participation in crime are strongly affected by cognitive and noncognitive abilities."⁵⁶

Isaacs (2012) finds that children who are exposed to maternal depression or low levels of maternal support are less likely to be school ready at age five than those who do not experience these emotional deprivations. Controlling for a host of confounding factors, she finds that the incidence of maternal depression reduces the likelihood of a child being school ready by 5 percentage points. Children whose mothers score low in supportiveness during parent-child interactions are also 10 percentage points less likely to be ready for school on her measure (See figure 4 below).⁵⁷

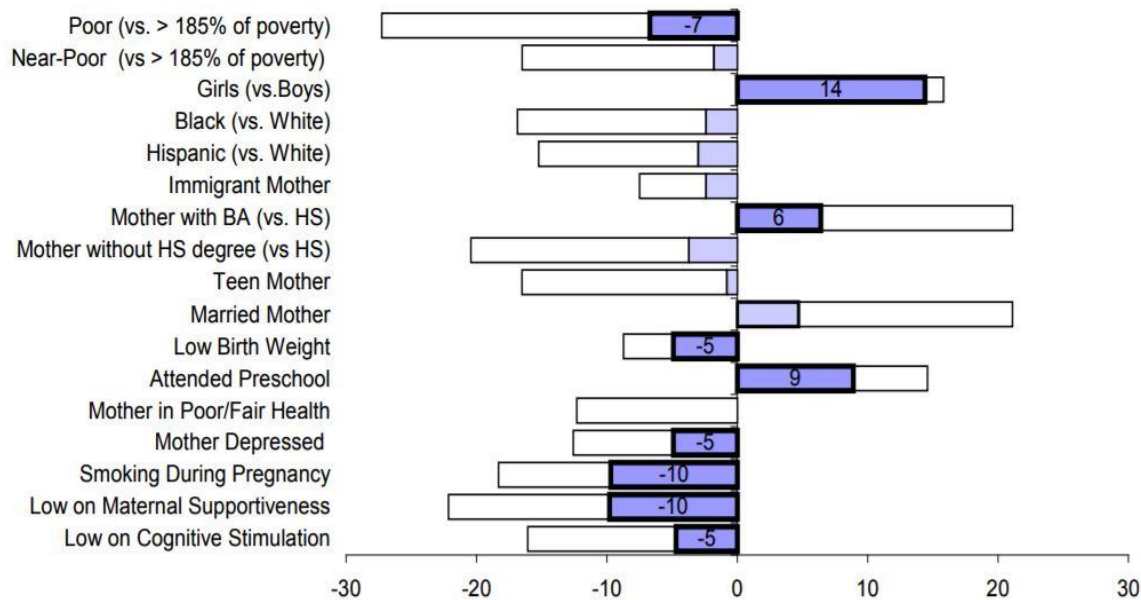
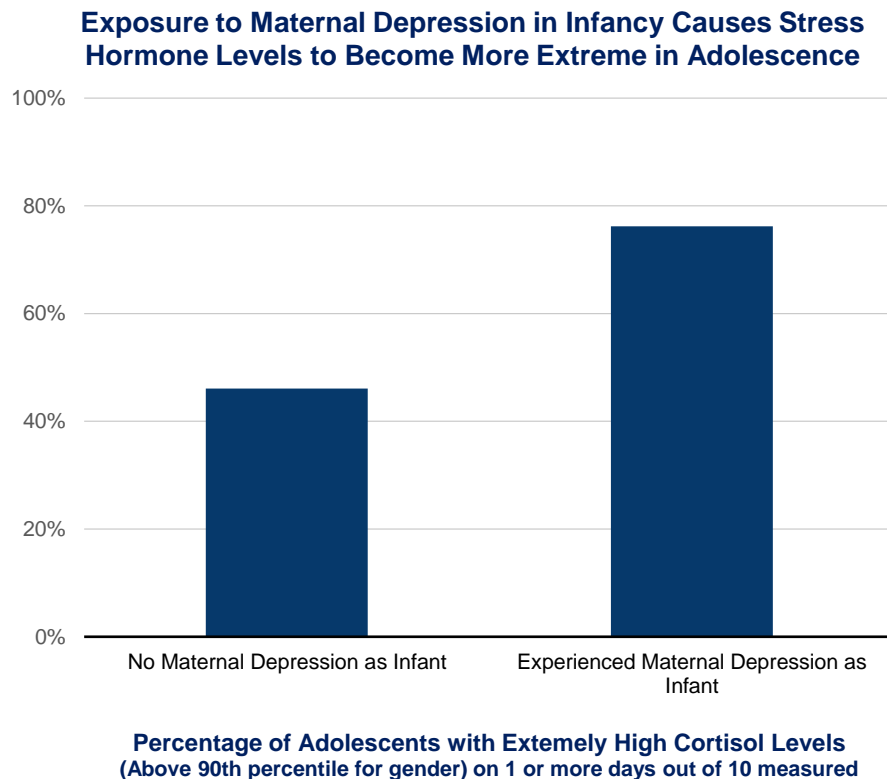


Figure 4. Source and Notes: Brookings analyses of data from the Early Childhood Longitudinal Study-Birth Cohort (ECLS-B). Bars with numerical values represent characteristics that are statistically significant (at the 95 percent level, except for low birth weight and cognitive stimulation (90 percent level) and gender and preschool (99 percent level). Additional controls not shown in figure include paternal education, race (other), maternal employment, use of non-parental care, breastfeeding, child’s age in months, number of children and adults in the household, and dummies for missing values on selected variables. Paternal education, children’s age in months and use of preschool or center-based care before age 4 have statistically significant effects on school.

1.5 Worse child outcomes can increase the risk of future poverty

Established early, these developmental gaps create achievement gaps that persist throughout adolescence and adulthood, exacerbating the divergence in lifetime outcomes between rich and poor. Children who are not ready for school are less able to benefit from their schooling, which can play an important role in whether or not children are able to escape from poverty later in life.

Children of depressed parents “are more likely to exhibit attention and hyperactivity disorders during grade school and their pattern of interacting negatively with others may escalate,” according to a study from the Children’s Defense Fund. These children were also more likely to behave aggressively or use tobacco and other drugs. Chronic maternal depression even appears to predict cardiovascular problems in adulthood.⁵⁸ Figure 5 shows that children who experience maternal depression early in life are more likely to have higher levels of stress hormones such as cortisol.⁵⁹



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Figure 5. Source: Center on the Developing Child at Harvard University (2009), based on Halligan, Herbert, Goodyer, and Murray (2004).

There is a huge body of research linking childhood outcomes, most obviously in terms of education and skills, to long-run outcomes in adulthood (for instance, in income or earnings). We will not attempt to summarize this literature here, merely to provide a handful of illustrative examples:

- School readiness measures predict academic outcomes and social adjustment in early elementary school, according to a Child Trends analysis.⁶⁰
- Children with higher levels of school readiness at age five are more likely to succeed in grade school, are less likely to drop out of high school, and earn more as adults, even after adjusting for differences in family background, according to Duncan et al. (2010).⁶¹
- Among those aged 25 and higher, 73 percent of those with a bachelor's degree are in employment, compared to just 55 percent of those with only a high school degree.⁶²
- Most students even from the lowest income brackets (below \$32,000 household income) graduating from a high school with a GPA of 3.5 or higher complete a Bachelor's degree within six years, according to Sandy Baum and Harry Holzer in their book *Making College Work* (2017). By contrast, just 19% of those with a GPA of between 3.00 and 3.5 complete a four-year degree.

- Measures of cognitive ability in adolescence strongly predict rates of both upward and downward intergenerational mobility, according to analyses of longitudinal data by Bhashkar Mazumder.⁶³
- Seven out of ten people who graduated high school with a GPA of at least 2.5 (and who had not become teen parents or been convicted of a crime) achieved financial independence by the age of 29, according to work by Isabel Sawhill.⁶⁴

Again, these studies are cited here merely as examples of the research evidence linking outcomes in childhood, adolescence, and adulthood. The question is, how can the cycle be broken?

Part 2: Possible Solutions

We have argued that poverty increases the risk of depression; caregiver depression often undermines attachment; weaker attachment can damage child development; slower development impacts on child outcomes; and worse child outcomes increase the risk of future poverty. These connections harden the cycle of intergenerational poverty and undermine economic mobility.

So, what can be done? Here we attempt to identify policy interventions with the potential to weaken or break each link in this chain of disadvantage. Specifically, we suggest policies to:

- 2.1 Reduce poverty;
- 2.2 Reduce the impact of poverty on depression among caregivers;
- 2.3 Reduce the impact of caregiver depression on early child development; and
- 2.4 Reduce the impact of weaker early child development on later outcomes.

Again, since our specific focus here is on mental health, most of our attention is on weakening the links between poverty and depression (2.2) and depression and development (2.3). But it is important to see interventions in these specific areas as part of an ambitious set of policies to reduce poverty itself, and to improve outcomes for children from poor families, rather than as any kind of substitute for these broader interventions.

2.1 Reduce poverty

Since poverty is an important risk factor for depression, one of the most important anti-depression strategies is an anti-poverty strategy. This is something the U.S. sorely lacks. Even the measurement of poverty in the U.S. is close to a national embarrassment. The U.S. should follow the lead of Canada and embark on the creation of a genuine Poverty

Strategy, beginning with the creation of more appropriate measures, setting of clear poverty reduction targets, and evaluation of the most promising policy approaches.¹

But poverty reduction does not have to wait for the completion of a strategy. There are hundreds of fully costed policy proposals that would reduce poverty against any sensible measure. Here we will simply point to some of the most recent or relevant examples:

- **Child allowances.** A universal monthly child allowance of \$250 per month would reduce poverty by about 6 percentage points, at a net cost of \$93 billion (considering the replacement of the Child Tax Credit and child tax exemption).⁶⁵
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- **Expansion of Tax Credits.** One poverty reduction approach is to increase the scope and generosity of tax credits such as the earned income tax credit (EITC), child tax credit (CTC) or a new worker tax credit, as Isabel Sawhill and Chris Puhliam write.⁶⁷ Hillary Clinton's 2016 proposal to expand the Child Tax Credit would have lifted 1.5 million people above the poverty line at a total cost of about \$209 billion over ten years.⁶⁸
- **Improve take up of existing anti-poverty programs.** Many families fall below the poverty line because they do not take up benefits for which they are eligible. The poverty rate would have been 20 percent lower in 1998 if all families with children had participated in the programs for which they were eligible, and deep poverty would have been 70 percent lower, according to an Urban Institute analysis.⁶⁹
- **Expand registered apprenticeship programs.** Registered apprenticeships are relatively uncommon in the U.S. but have the potential to connect participants to higher-quality work.⁷⁰ A Mathematica evaluation of registered apprenticeships in 10 states estimated that participants earned almost \$6,000 more than nonparticipants in the ninth year after enrollment, and that the social benefits exceeded the social costs over an apprentice's career.⁷¹
- **Childcare subsidies.** A 10-percent reduction in the price of child care could increase the employment of single mothers by 3 to 4 percent, according to a literature review by Ziliak, Hokayem, and Hardy (2008).⁷² Such a reduction could be accomplished through an expansion of the Child and Dependent Care Tax Credit, with the cost partially offset by introducing an income cap on eligibility.⁷³
- **Paid family leave.** Lack of access to paid leave forces mothers who need to care for a new baby or their own health needs to take time off at the expense of their financial well-being. Paid parental leave in California increased the use of maternity leave by an average of 3 to 4 weeks especially for non-college educated, unmarried, and nonwhite mothers.⁷⁴

We do not propose to adjudicate here between the various anti-poverty proposals on the table, nor to engage in the ethical or political arguments that surround them. The point is

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1. One of the authors of this paper, Richard V. Reeves, served as a member of the Government of Canada's Ministerial Advisory Committee on Poverty from 2017 to 2018.

simply that income poverty could be dramatically reduced through a range of policy instruments, if the political will was there. If we are worried about how poverty influences children, policymakers could seek specifically to reduce child poverty, as the UK did under Tony Blair and Gordon Brown.⁷⁵

2.2 Reduce the impact of poverty on depression among caregivers

Regardless of the rate of poverty, an important goal is to weaken the connection between being poor and suffering from depression. Timely access to quality mental health care is critical here.

One problem is that many depressed mothers might not know that they are experiencing depression, or they may not seek treatment for a variety of reasons, including the stigma attached to maternal depression. Only one in seven percent of new mothers with depression obtain professional care.⁷⁶

Others may be deterred by the cost of care: most states do not pay for maternal depression screenings under children's Medicaid programs.⁷⁷ Finally, resources to assist depressed mothers may simply be out of reach or nonexistent, though numerous programs have been recommended and others enacted that appear to improve mothers' mental health, the quality of caregiving, and children's prospects.

The federal Patient Protection and Affordable Care Act, signed into law in March 2010, requires insurers to cover preventative care and screenings without patient cost-sharing, including postpartum depression screenings, but insurance companies are not required to provide mental health coverage, and treatment for depression is often not covered.

Some of these barriers can be lowered. The U.S. Preventative Services Task Force recommends regular depression screening for all adults, including pregnant and postpartum women.⁷⁸ State Medicaid programs are a major source of funding for mental health services for low-income young children and their parents, but as of 2017, 38 states do not cover maternal depression screening under children's Medicaid coverage.⁷⁹

Medicaid eligibility for parents also varies widely by state. While some states have adopted Medicaid expansion programs which extended the coverage for mothers beyond 60 days postpartum, other states still maintain the 60-day period. States with higher income eligibility thresholds for pregnant women and parents of young children are better able to guarantee that new mothers can access mental health care. Providing incentives to states to expand Medicaid coverage for parents of young children could improve mothers' access to mental health insurance and treatment.⁸⁰ It could also substantially improve the capacity of pediatricians and other healthcare professionals to screen and recommend treatment for women exhibiting depressive symptoms.⁸¹

Some states now mandate universal screening and education for postpartum depression, and others cover psychosocial risk assessments and counseling during pregnancy. These are important steps forward, and other states should follow suit.

But even when access to mental healthcare is available, many women may not seek treatment because of perceptions around depression, fearing a stigma surrounding maternal depression or a distrust of mental health agencies or providers. Improving provider training on postpartum depression screening and support resources could improve their ability to discuss the dangers associated with depression and destigmatize treatment among parents.

After reviewing the literature on screening and help-seeking for postpartum depression, Liberto (2010) suggests, “Because mothers have routine interactions with pediatric office staff during the first few years after giving birth, pediatric nurse practitioners and pediatricians have the perfect opportunity to screen and educate women regarding symptoms, treatment, and available resources for (postpartum depression).”⁸² Liberto suggests that streamlining screening guidelines and improving provider training in the identification, management, support, and referral for maternal depression is essential to improving maternal and infant outcomes. Further, using trusted providers, such as those documented by Beeber, Perreira, and Schwartz (2008), and taking advantage of existing delivery systems such as home visiting programs, could help to overcome some of these psychological barriers to treatment.⁸³

Two targeted intervention trials reported by Beeber, Perreira, and Schwartz (2008) successfully recruited mothers at high risk of developing depressive symptoms, to better reach vulnerable infants.⁸⁴ The researchers suggest that understanding the empirical factors that increase the risk of developing mental health problems and using trusted providers to deliver services to symptomatic mothers is critical to successful targeting and recruitment. Further, targeting interventions to single mothers living in poverty might prove most effective at improving children’s outcomes, given that children raised by only one parent are particularly reliant upon that single adult for their developmental and attachment cues.

A new report by the American College of Obstetricians and Gynecologists recommends making postpartum care from obstetrician-gynecologists an ongoing process, rather than a single encounter. An initial assessment during the first 3 weeks would be followed by individualized ongoing care as needed for up to 12 weeks. These comprehensive check-ups would include assessments of mood and emotional well-being to help mothers successfully transition from pregnancy to parenthood.⁸⁵

2.3 Reduce the impact of caregiver depression on early child development

Investments in human capital across childhood can pay dividends, whether through supporting parenting quality or boosting skill acquisition in other setting, such as pre-K classroom and schools.

Research by our colleague Isabel Sawhill, using the Social Genome Model, indicates that intervening early and often in a child’s life through targeted social programs can have dramatic impacts on economic mobility.⁸⁶ But as a general rule, when it comes to childhood

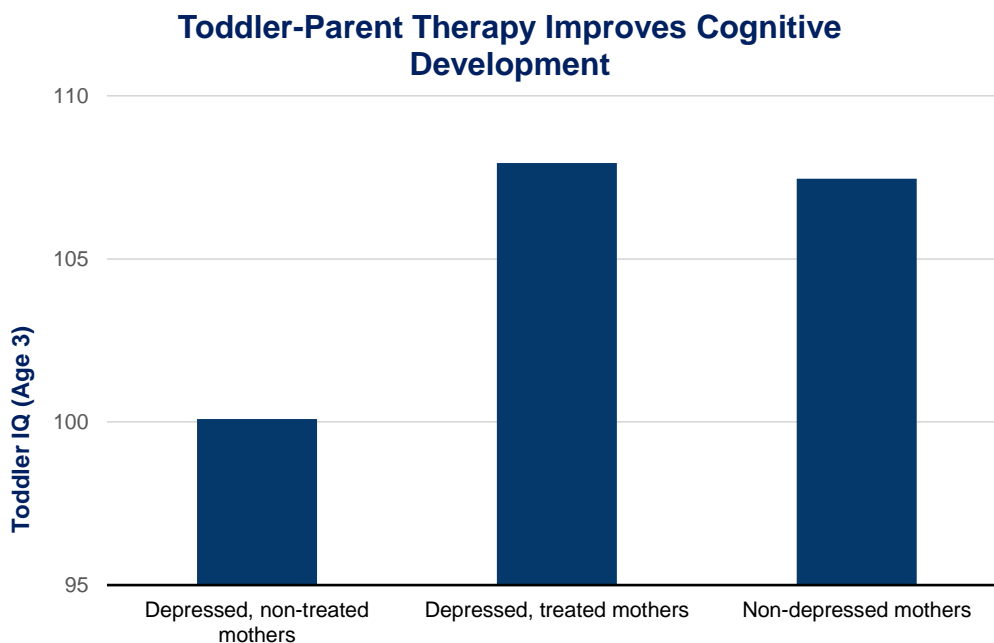
interventions, the earlier the better. As Garcia and Heckman (2014) show, the most effective period for all investments are the early years of childhood when children are most malleable, flexible, able to learn, and can be imprinted by parents and culture.⁸⁷ Early childhood education can deliver enormous benefits for children, their parents, and society, as emphasized in a 2015 report from the Council of Economic Advisors.⁸⁸ A review by Jane Waldfogel and Chris Ruhm indicates that quality early education predicts positive outcomes in adolescence and beyond.⁸⁹

While programs such as pre-K, which work outside the home, tend to get the most policy attention, there is a strong case too for interventions that seek to improve the relational quality between parents and their infants. Amanda Sheffield and her co-authors write that “interventions that strengthen these relationships have the potential to yield long-term gains in social and emotional development, particularly in children at risk because of poverty and toxic stress.”⁹⁰

After reviewing four prevention-focused interventions that have all shown evidence of improving children’s outcomes, Morris et al. (2017) conclude:

“Increasing the availability of programs that strengthen parents’ social support, and increase positive parent-child interactions through the varied settings that low-income parents already access (e.g., healthcare offices, community and faith-based organizations, schools, and homes), has the potential to have a significant impact on children’s health and developmental outcomes.”

Many programs aimed at helping infants may then provide a way to connect with and support mothers suffering from depression. But they may also help to mitigate the effects of depression on child development, either by improving the parent-child relationship, and/or by providing additional relational support for the child. Bernard et al. (2015), for example, made use of a randomized clinical trial to evaluate an intervention designed to help parents be more nurturing toward children at high risk of neglect. Children receiving the intervention (called Attachment and Biobehavioral Catch-Up, or ABC) showed more typical cortisol production, according to the authors, suggesting that the intervention improved children’s biological regulation in response to stress.⁹¹ Another randomized control trial by Cicchetti et al. (2000) evaluated the effect of toddler-parent therapy on children’s cognitive development. IQ tests given to the children one year later revealed that the intervention significantly improved cognitive development for children with depressed treated mothers as compared to depressed non-treated mothers (See figure 6).⁹²



Mothers with a major depressive disorder were randomly selected to participate in Toddler-Parent Psychotherapy as a preventive intervention for their children, age 20 months at entry to program. Children's scores on Bayley Mental Development index did not differ at age of entry, but significant differences appeared in IQ tests given at age 3.

BROOKINGS

Figure 6. Source: Center on the Developing Child at Harvard University (2009), based on Cicchetti, Rogosch, and Toth (2000)

One parenting intervention that has shown signs of success is Legacy for Children (*Legacy*), a group-based intervention that seeks to improve mothers' sensitive and responsive parenting and enhance parent-child interactions with the ultimate goal of improving children's healthy emotional development. An evaluation of the program by Kaminski et al. (2013) found that children in the intervention group had fewer behavioral problems at 24 months and fewer socioemotional problems at 48 months.⁹³ A longitudinal analysis of one intervention group showed that children of this group were at a lower risk for behavior problems from 24 to 60 months of age.

Home visiting programs offer an existing model on a larger scale that already serves many families vulnerable to the impacts of maternal depression on children's outcomes. Home visiting programs activities are focused on a child's earliest years, and visitors provide support and education to families to improve caregiving and child development. An MDRC report on the Maternal, Infant, and Early Childhood Home Visiting (MIECHV) Program found that about one third of the participating women reported depressive symptoms, a figure similar to the prevalence rate of depressive symptoms among low-income pregnant mothers found in community-based studies and much higher than the incidence of postpartum depression across all income groups nationally.⁹⁴ This program was reauthorized, albeit after some delay, by Congress in 2018.⁹⁵ In previous work, we have described home visiting as "federal domestic policymaking at its best," and urged expansion along evidence-based lines.

Though not all programs are specifically targeted to mothers suffering from mental health issues,⁹⁶ the legislation authorizing MIECHV requires that states prioritize high-risk groups, including low-income, pregnant women under age 21 or families with a history of child or substance abuse. Home visiting programs therefore already appear to reach a group that is at a higher risk of maternal depression, and could serve as an existing mechanism for policymakers and specialists to pursue interventions that explicitly seek to improve maternal health, the quality of caregiving, or children's outcomes.

Indeed, home visiting programs are already used to pursue some of these goals. A review of prevention-focused early childhood interventions designed to promote quality parent-child relationships by Morris et al. (2017) shows that such programs can significantly improve caregiving behavior and children's outcomes.⁹⁷ For example, Nurse-Family Partnership (NFP) is a program that arranges home visits by registered nurses to low-income, first-time mothers during pregnancy through two years after birth. Nurses offer counseling on how to be a knowledgeable and responsible caregiver, and evaluations show that participation in the program increased maternal relationship stability, improved children's intellectual functioning and future academic achievement, and even reduced maternal mortality and children's mortality at 20 years of age.⁹⁸ Isaacs (2008) notes the positive effects of NFP in diverse geographic settings. A RAND evaluation found that each dollar invested in the program yielded \$5.70 for the higher-risk sample, and \$1.26 for the lower-risk sample, indicating that targeting more disadvantaged populations can be a more cost-effective mechanism for improving children's outcomes. Isaacs suggested providing nurse home visitors to "all first-time pregnant women in economically impoverished families to promote sound prenatal care and the healthy development of infants and toddlers through age two."⁹⁹

The 2012 National Survey of Children's Health found that, among families with children under 18, only 14 percent had received a home visit—for any of their children—before age four.¹⁰⁰ Programs such as *Legacy* and the *Nurse-Family Partnership* have demonstrated that prevention-focused interventions can meaningfully improve parenting quality and children's outcomes. Dozens of other strategies and programs have proven effective at improving parent-child interactions and improving socioemotional and behavioral outcomes among young children.¹⁰¹

Still, other prevention programs for maternal depression have shown mixed or disappointing results, so it is important that any new program or scaling of existing programs receive resources to pursue rigorous evaluation. Further, such preventative interventions should be pursued alongside efforts to improve maternal mental health and reduce barriers to treatment, such as the costs and stigma associated with accessing mental health care among mothers who already experience depressive symptoms.

2.4 Reduce the impact of weaker early child development on later outcomes

Policymakers can seek to cut poverty rates (largely through redistributive mechanisms); to lessen the risk of maternal depression associated with poverty (largely through improved access to health care); and to reduce the impact of maternal depression on early child development (largely through services such as home visiting and early education). But even in the most optimistic scenario, many children will face developmental challenges in their earliest years, whether as a result of maternal depression or other factors. An important broader goal for policy is to blunt the impact of early disadvantage on later development and opportunities. This of course a multidimensional goal, one which motivates much of our own and others' work. Here again, we simply offer a few examples of policy areas or proposals that are motivated by the goal of improving upward mobility for children who have a difficult start in life:

- **Tutoring in key academic subjects.** A randomized controlled trial involving more than 2,700 students in Chicago showed that students who were randomly assigned to participate in a tutorial program—in which qualified math tutors work with two students at a time for daily 50-minute sessions—had significantly higher test scores and math grades. At a cost of about \$3,800 per student, the program helped students learn one to two additional years of math in one school year.¹⁰²
- **Small schools of choice at the K-12 level.** An MDRC evaluation of New York City's small public high schools of choice (SSCs) found that SSC students outperformed students in the control group in terms of high school graduation and post-secondary enrollment and persistence. Remarkably, because fewer SSC enrollees needed to attend a fifth year of high school, the per-student cost of SSCs was *lower* than that of the control group's high schools.¹⁰³
- **Mentoring programs for adolescents.** The Becoming a Man (BAM) program is a school-based intervention program that includes elements of cognitive behavioral therapy as well as relationship- and skill-building activities. In a pair of large-scale RCTs, BAM reduced violent crime arrests and raised school engagement (including attendance and GPA) among teenage boys in Chicago.¹⁰⁴
- **Simplifying college admissions and financing.** In the H&R Block FAFSA Experiment, free FAFSA completion assistance was provided to low- and moderate-income individuals receiving tax preparation help. Individuals who received assistance were significantly more likely to submit the FAFSA, enroll in college the following fall, and receive more financial aid.¹⁰⁵
- **More support in college.** An MDRC evaluation of the City University of New York's (CUNY's) Accelerated Study in Associate Programs (ASAP) found that ASAP almost doubled three-year graduation rates for students who were initially placed in developmental courses.¹⁰⁶ Another, potentially complementary, approach is the “guided pathways” framework, which emphasizes greater structure and support for students in community colleges.¹⁰⁷

Clearly, this list could go on for many pages. The point here is simply that interventions narrowly focused on maternal depression, on parenting skills, or the very early years should be seen as part of a broader, more ambitious set of policies to promote upward mobility and reduce the predictive power of childhood poverty on later outcomes.

A note of caution. Evidence that causally connects maternal depression to adverse future outcomes for children is currently limited. Numerous factors contribute to shaping children's outcomes in adulthood. Our primary focus is on maternal depression and child development, but should underline here supporting the mother not only for the sake of her child's development, but also for her own health and wellbeing.

Conclusion

We have argued that mental health is an economic mobility issue. In particular, maternal depression can impede attachment and bonding in the very earliest months of life, potentially impeding early child development, with long-run consequences.

Maternal depression can substantially alter the quality of the relationship developed between mothers and their infants. Consistently low-quality mother-infant interactions and attachment poses a serious threat to children's healthy development. Children raised by depressed mothers suffer an array of developmental handicaps, including slower cognitive development, psychopathy, and behavioral problems.

The incidence of maternal depression is significantly higher among low-income women, whose children already face an array of barriers to upward economic mobility. Especially when untreated, maternal depression can exacerbate the intergenerational handicaps faced by poor children. Maternal depression is thus not only a vitally important health concern in its own right, but a potential link in the transmission of disadvantage from one generation to the next.

While maternal depression has received a good deal of attention from psychologists and neuroscientists interested in the cognitive development of young children, research on its implications for economic mobility has been scarce.

In this framing paper, we have attempted to provide a brief but integrated assessment of the interactions between caregiving relationships, parental mental health, and children's development, in order to highlight the additional risks that maternal depression can pose for children who are already more likely to face a number of barriers to upward mobility.

Addressing these issues is likely to require action on the health care front, including greater screening for and treatment of postpartum depression, as well as preventative strategies to reduce the impact that mental health issues can have on the quality of caregiving. There is also a wealth of evidence-based programs that focus on improving maternal caregiving and parent-child relationships. Targeting these programs toward high-risk families could produce substantial gains in terms of children's developmental and future outcomes. Innovation and evaluation are of course important here, both in terms of improving our understanding of what works, and scaling interventions with a history of success.

The research documented above suggests that maternal mental health and children's development are intimately connected, though there are certainly large knowledge gaps on the exact mechanisms through which maternal depression influences children's outcomes and therefore some uncertainty regarding the appropriate policy responses to mitigate these impacts. Investing more resources into understanding the causal relationship between maternal depression and children's outcomes, as well as the most effective interventions to improve parental mental health and the quality of caregiving, should be important priorities for funders, policymakers and researchers interested in improving economic opportunities for all children.

As we have stressed throughout the paper, none of these suggestions should be seen as providing an alternative for broad-based, aggressive policies to reduce poverty, and boost upward mobility. Quite the opposite. Given the impact of poverty on mental health, the policy goals must be to tackle poverty itself, as well as to mitigate the impact of poverty on the health of adults, and on the future prospects for their children.

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