

EDITORIAL

Income and Maternal/Child Health—The Baby's First Years Trial

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More than 1 in 10 children in the US live in a household experiencing poverty, with rates increasing in 2023¹ after the end of COVID-19-era policies that had temporarily slashed them in half.² A large body of scientific evidence has documented



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the relationship between poverty in early life and adverse maternal and child health outcomes.^{3,4} These persistent associations have led to a hypothesis that the relationship between income and adverse maternal and child health outcomes is causal. This has been supported by quasi-experimental studies of safety net policies and income shocks.⁵ However, high-quality experimental studies of the causal effect of income in early childhood on maternal and child health outcomes have been limited in the modern era.

The Baby's First Years trial⁶ is an extraordinary landmark study that fills this important void. The trial enrolled a large, racially and ethnically diverse sample of healthy newborns across 4 major metropolitan areas from 2018 to 2019. The 4 states where the trial was conducted differed substantially in their cost of living, the availability of affordable housing, and in the generosity and degree of administrative burden of available safety net programs (eg, Medicaid, the Supplemental Nutrition Assistance Program [SNAP]). The trial focused on households below the federal poverty line who experience substantial economic hardship. Cash transfers were substantial and sustained—increasing household income during the first 4 years of life by 18%. Four years after study launch, attrition from the sample was low—health outcomes were measured for 73% to 88% of households. The trial carefully attended to the ethical challenges presented by cash transfer interventions, including potential impacts on eligibility for other safety net programs such as the SNAP program. Specifically, the trial worked with state leaders to ensure that income received during the trial was not considered when determining eligibility for SNAP or Medicaid benefits. This prevented families from losing benefits because of the cash transfers they received during their participation in the trial.

An important characteristic of the sample of families enrolled in the Baby's First Years study⁶ is that mothers whose newborns were admitted to the neonatal intensive care unit were excluded. This means that the sample does not include many mothers who would have had a complex pregnancy with maternal morbidities resulting in preterm delivery and their medically compromised infants. Crucially, this means that the trial is designed to answer the question of whether cash transfers can impact maternal and child health among those whose start in life is relatively healthy. Possible pathways for the effect of cash transfers on health among this relatively healthy population include effects on parents' and children's anxiety

and depression, investments of parental time, utilization of preventive health care, improved nutrition, changes in housing or neighborhood, and associated exposures and increases in parental agency, autonomy, or employment. Other research on Baby's First Years has documented increased investments in parental time spent on child development-related activities,⁷ improvements in nutrition limited to increased consumptions of fruit and vegetables,⁸ and no changes in the utilization of child health care.⁸

In order to measure maternal and child health, this article⁶ focuses on maternal anxiety and depression, maternal and child body mass index (BMI), and an index of child health that includes self-reported children's health, the number of episodes of illness, and the existence of any chronic illnesses at age 4 years. The article⁶ reports no improvements in any of these outcomes. The selection of child health outcomes underscores a common challenge in assessing the health of young children. Most young children, especially those who present as healthy at birth, do not experience major health challenges in early childhood. Illness in early childhood is typically short lived and occurs through social and community interaction. Chronic illnesses in children tend to develop gradually and present much later in life, as evidenced by the low rate of chronic illness in this sample. As the authors note, common chronic child illnesses such as asthma, attention-deficit/hyperactivity disorder, or diabetes would not usually be expected to be diagnosed at age 4 years; therefore, these null effects should be followed up into later end points in childhood to better understand potential treatment effects. Indeed, because of the critical nature of early childhood experiences on later-life disease, following up children's outcomes over longer periods of time would be a valuable investment.⁹

Similarly, BMI at age 4 years—a time when children are experiencing rapid variability in growth trajectories—is likely to be a weak predictor of children's longer-term metabolic health.^{10,11} The kinds of changes in nutrition that may be particularly sensitive to income—such as increased consumption of fruit and vegetables as documented in previous evidence from this trial⁸—can be expected to have cardiovascular and metabolic benefits, but evidence from 1 systematic review¹² suggests that these changes are unlikely to result in weight loss.

Despite the challenges of capturing health outcomes for mothers and children in early childhood, the largely null results of the cash transfers on these outcomes represents important evidence of the potential for income to shift chronic health outcomes for mostly healthy mothers and newborns. Most notably, the study estimates a precise null effect on maternal mental health outcomes using common measures of anxiety and depression. Given the size of the income transfer

in this study and the well-documented links between income and maternal mental health, this result is surprising. However, other quasi-experimental studies^{13,14} of the relationship between increases in income and postpartum stress and depression have also demonstrated limited evidence of improvement. Evidence from randomized clinical trials^{15,16} of basic income pilot programs on depression and anxiety and adult health have demonstrated substantial improvements in some cases and no evidence of positive effects in others.

Nonetheless, these results suggest that even substantial changes in income may not be able to address the structural inequities and lack of integrative support that contribute to the relationship between poverty and maternal stress and depression symptoms. Similarly, the trial's⁶ null findings for maternal and child BMI suggest that changes in income may not be enough to counteract the powerful systemic forces that shape socioeconomic inequities in BMI such as access to healthy foods and neighborhood environments and exposures. Nonetheless, maternal BMI alone is unlikely to capture a full picture of maternal cardiovascular or metabolic health¹⁷; analyses of a broader array of maternal physical health indicators would be valuable in better understanding links between income and maternal health.

As noted in the article,⁶ these results must also be interpreted in the context of the COVID-19 pandemic and the way it changed both the availability of income and social supports and the contextual factors contributing to anxiety and depression (eg, concerns of illness, challenges with reliable child care, and changes in work arrangements). COVID-19-era policies represented a substantial increase in the generosity and ease of use of the social safety system, which may have made it more difficult to detect changes from the cash transfers evaluated in this trial.

Although this landmark trial⁶ demonstrates that increased income may not be enough to alter the trajectory of chronic health conditions like stress, depression, or elevated

BMI for mothers and their children, the trial's focus on healthy newborns limits its ability to draw conclusions about the impact of income support to families experiencing more acute health challenges. Ongoing trials are under way to explore the effect of income support to families during severe health events, such as an extended stay in the neonatal intensive care unit or pediatric cancer.¹⁸ These complex health challenges require extensive time commitments from caregivers for frequent health checks, follow-up care, or visitation of specialists. Financial burdens directly related to health care utilization, such as parking, transportation, childcare responsibilities for other children, and time off work may prevent families from participating in evidenced-based caregiving and health seeking. Evidence from these more acute settings can enhance the picture of whether income can improve maternal and child health outcomes in early life.

The tremendous investment in the Baby's First Years study will continue to inform efforts to drive better policies to reduce childhood poverty and its effect on mothers and children's health and developmental outcomes. Results from this study⁶ also support investments in rigorous research into alternative interventions that can address the health system, structural and environmental factors that cement persistent inequities in outcomes for families during early childhood. Although there is increasing recognition that policies and interventions that address families' social determinants of health may be needed to improve pediatric outcomes, funding mechanisms to support large clinical trials or other rigorous study designs at the intersection of poverty and child health are lacking. Indeed, this landmark trial⁶ brought together more than 20 different funding sources to make this trial happen. Systematic investments in the interdisciplinary work required to bridge clinical expertise related to pediatric outcomes with social science research on childhood poverty will ensure these important questions receive enough attention going forward.

ARTICLE INFORMATION

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