Scientific Publications

Universal Journal of Obstetrics and Gynecology, 2025, 4, 1237
www.scipublications.com/journal/index.php/ujog
DOI: 10.31586/ujog.2025.1237

*Article*

# Color of Poverty Matters: Socioeconomic Resources and Health of Mothers Giving Birth to Children into Poverty

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**Abstract:**

**Background**: Childhood poverty is a critical determinant of developmental, health, and behavioral outcomes. However, racial and ethnic differences in how families experience and navigate poverty suggest that a one-size-fits-all approach may not be an effective approach for alleviating disparities. Understanding baseline demographic, socioeconomic, health, and behavioral characteristics among families in poverty is crucial to designing equitable interventions. **Objective:** To examine racial and ethnic differences in baseline demographic, socioeconomic, health, and behavioral characteristics among families living in poverty, using data from the Baby's First Years (BFY:2018-2019) Study. **Methods:** This analysis used baseline data from the BFY study, a randomized controlled trial (RCT) designed to evaluate the effects of monthly cash assistance on children's developmental outcomes. The sample included 1,050 children and their families, consisting of mothers and, when available, fathers. Descriptive analyses were conducted to compare demographic, socioeconomic, health, and behavioral outcomes across racial and ethnic groups, focusing on Black, Hispanic, and other mothers. **Results:** Significant racial and ethnic differences were observed. Regarding demographic factors, Hispanic mothers were older than White mothers. In terms of socioeconomic factors, Hispanic mothers had fewer years of education compared to White mothers, while Black mothers were more likely to receive food stamps than mothers from other groups. Regarding health and behaviors, Black mothers reported worse self-rated health but were less likely to plan for breastfeeding compared to White mothers. In contrast, Hispanic mothers reported lower levels of depression and were more likely to plan for breastfeeding. **Conclusion:** These findings highlight the heterogeneity of experiences among families living in poverty, with significant differences across racial and ethnic groups. Such disparities underscore the importance of tailoring anti-poverty policies to the unique needs of diverse populations. Future research should explore how the effects of interventions, such as cash assistance or guaranteed income, may differ across racial and ethnic groups to inform equitable and effective policy development.

**Keywords:** Poverty, Social Determinants of Health, Self-Rated Health, Depression, Breastfeeding, Population Groups, Ethnicity

**How to cite this paper:**
Assari, S., Azadi, M., & Zare, H. (2025). Color of Poverty Matters: Socioeconomic Resources and Health of Mothers Giving Birth to Children into Poverty. *Universal Journal of Obstetrics and Gynecology*, *4*(1), 12–23.
DOI: 10.31586/ujog.2025.1237

**Received:** January 10, 2025
**Revised:** February 23, 2025
**Accepted:** March 30, 2025
**Published:** April 9, 2025

## 1. Introduction

Poverty remains a critical risk factor for poor developmental outcomes among children [1-4], affecting cognitive and brain development [5-13], as well as physical and mental health outcomes [14-19]. These effects often persist into adulthood, creating lifelong disadvantages [16]. Research has shown that the impact of childhood poverty is profound and enduring, with some evidence suggesting that even socioeconomic mobility in adulthood cannot fully mitigate these effects [16]. The mechanisms underlying these persistent disparities include reduced access to quality education, limited healthcare, food insecurity, and exposure to chronic stress, all of which are exacerbated by structural inequities [20-24].

Given these significant and enduring consequences, there has been substantial interest in policies aimed at mitigating the effects of poverty on child development [25-28]. Strategies such as cash assistance, guaranteed income, and voucher programs have emerged as potential solutions to break the cycle of poverty and improve outcomes for children [29-40]. These interventions seek to provide families with the resources needed to support their children's growth and development. However, the effectiveness of these policies depends on their design, implementation, and the ability to address systemic barriers faced by families living in poverty [41, 42].

The Baby's First Years (BFY) Study [34, 35, 43] represents one of the most rigorous efforts to evaluate the effects of cash assistance on families living in poverty. This randomized controlled trial (RCT) compares the impact of providing $300 per month versus a lower amount to families with infants. The study boasts numerous strengths, including its large sample size, randomization, follow-up design, and measurement of multiple objective outcomes, such as cognitive development, brain function, and overall health. These strengths position the BFY study as a critical contribution to the literature on anti-poverty policies.

Although the BFY study has not yielded the magnitude of effects initially hypothesized [34, 35], its findings offer important insights into how cash assistance may influence family and child outcomes [40, 44]. The observed effects, albeit smaller than anticipated, underscore the complexity of addressing poverty-related disparities. They also highlight the need for nuanced analysis of subgroup differences, particularly by race and ethnicity [45].

The discussion following the release of initial findings has raised critical questions about the generalizability of cash assistance policies across racial and ethnic groups [45]. Structural and systemic factors mean that Black, Latino, and White families living in poverty may experience different barriers to leveraging socioeconomic resources [46]. These differences could influence how cash assistance impacts various populations [47]. For example, Black families often face greater structural and interpersonal discrimination, which can hinder their ability to fully benefit from additional education or income [48-56]. As a result, the benefits of cash assistance may be stratified along racial lines, reflecting broader societal inequities.

Further complicating this picture is the overrepresentation of racial and ethnic minority families in the BFY study's cash assistance group. Black children, in particular, were more likely to be part of the higher cash assistance group. This introduces the potential for bias, as the relationship between income and developmental outcomes may vary significantly across racial and ethnic groups. For example, findings from the Adolescent Brain Cognitive Development (ABCD) Study [57-63] suggest that parental education and income have stronger associations with brain function and structure among White children than Black children [64-74]. Similarly, other studies suggest that higher income may amplify specific risks for Black boys, such as depression, especially when they reside in predominantly White neighborhoods [66, 75-78].

These disparities are rooted in social, economic, and political structures rather than biological differences. The ability of families to translate additional income into improved outcomes is mediated by factors such as access to quality education, safe housing, and nutritional food—resources that remain unequally distributed due to systemic racism. For instance, Black families are more likely to reside in food deserts, limiting the extent to which cash assistance can enhance access to healthy, brain-nurturing foods.

Policies designed to alleviate poverty must therefore go beyond income supplementation. They must address the broader systems—such as education, housing, healthcare, and policing—that create and perpetuate racial and ethnic disparities. Without such systemic reforms, the benefits of income-based interventions may be constrained for families of color.

This study introduces an innovative approach by examining how racial and ethnic differences influence the effectiveness of cash assistance programs like the Baby's First Years (BFY) study. While previous research has established the overall benefits of poverty reduction on child development, there is a gap in understanding how these interventions perform across diverse racial and ethnic groups. By focusing on these variations, our work seeks to uncover whether systemic factors, such as structural racism and discrimination, affect the ability of Black, Latino, and White families to utilize cash assistance effectively. This nuanced analysis aims to provide critical insights for developing more equitable anti-poverty policies that address the unique challenges faced by marginalized communities.

In this study, we use data from the BFY study [34, 35, 43] to examine the role of race and ethnicity in shaping demographic, socioeconomic, health, and behavioral outcomes among families living in poverty. By analyzing these differences, we aim to explore how racial and ethnic variations may influence the uptake and utilization of cash assistance policies. Understanding these dynamics is crucial for designing interventions that are equitable and effective across diverse populations. If groups differ significantly in their baseline characteristics, needs, and preferences, they may also differ in their ability to benefit from such policies. This analysis provides critical insights for tailoring anti-poverty interventions to better meet the needs of all families, particularly those from marginalized communities.

## 2. Methods

### *2.1. Data*

This analysis draws on baseline data from the Baby's First Years (BFY) study [34, 35, 43], a longitudinal randomized controlled trial designed to assess the impact of unconditional monthly cash payments on low-income families. From May 2018 to June 2019, a total of 1,050 mothers were enrolled shortly after giving birth in the postpartum units of 12 hospitals located in four major U.S. metropolitan areas: New York City, New Orleans, Omaha, and the Twin Cities (Minneapolis and St. Paul). To be eligible, mothers had to be at least 18 years old, reside in the state where they were recruited, report household incomes below the federal poverty line, and be proficient in either English or Spanish. Additional eligibility requirements included having given birth to a singleton infant who was discharged into their care and did not require intensive neonatal treatment. When available, fathers were also included in the study.

### *2.2. Ethics*

The study received ethical approval from the Institutional Review Board (IRB) at Teachers College, Columbia University, which acted as the primary IRB for the majority of participating sites. Participation was entirely voluntary, and informed consent was obtained through separate processes for involvement in the research and acceptance of the cash transfer, in order to minimize any potential for coercion. Mothers who agreed to

take part in the research were provided with compensation for completing the baseline survey.

### *2.3. Participants and Random Assignment*

From 1,050 eligible mothers, 1,000 provided consent for the intervention. At recruitment, all mothers reported household incomes below the federal poverty threshold. Baseline characteristics, including demographic, socioeconomic, health, and behavioral measures, were collected. Participants were stratified by site and randomly assigned to one of two groups: a "high-cash gift group" receiving $333 per month or a "low-cash gift group" receiving $20 per month. Randomization was conducted using a site-specific stratification process to maintain a 40%/60% distribution between the high- and low-cash gift groups. Randomization integrity was maintained using a secure web-based application. Of the 1,000 mothers recruited, 400 were assigned to the high-cash gift group and 600 to the low-cash gift group. At baseline, Black mothers were younger, more likely to receive food stamps, and less likely to plan for breastfeeding compared to other racial and ethnic groups. Hispanic mothers were older and reported lower levels of depression. Balance tests confirmed that the groups were broadly comparable at baseline, with minor differences adjusted for in subsequent analyses.

### *2.4. Measures*

The study included several self-reported maternal measures. Maternal race/ethnicity was categorized as White, Black, Latino, or Other, with White used as the reference group. Maternal education was assessed based on self-reported years of schooling, and maternal age was reported by participants, ranging from 18 years and older. Breastfeeding intention was measured by asking about plans to breastfeed. Depression was assessed using the CESD scale, while self-rated health was evaluated through a conventional five-item self-report measure. Maternal marital status was determined based on the respondent's relationship with the baby's father. Employment within the last year, participation in the Supplemental Nutrition Assistance Program (SNAP), and household income were also self-reported, although income data were missing for about half of the sample.

### *2.5. Analytic Strategy*

The analysis included descriptive statistics, bivariate analyses (ANOVA and chi-square tests), Spearman correlations, and structural equation modeling (SEM). The baseline analysis focused on descriptive comparisons of demographic, socioeconomic, health, and behavioral outcomes by race and ethnicity. Chi-square tests were used to assess differences in categorical variables, and t-tests were used for continuous variables. For SEM, hypothesized paths were drawn from race/ethnicity (Black, Latino, and Other, with White as the reference group) to demographic, socioeconomic, health, and behavioral outcomes. Internal consistency and reliability of measures were evaluated both overall and within racial and ethnic subgroups. Missing data were addressed using full information maximum likelihood (FIML) within the SEM framework. Adjusted beta coefficients are presented to highlight the effects.

### *2.6. Strengths and Limitations*

The BFY trial's robust design, including randomization, a large sample size, and diverse racial and ethnic representation, enhances the reliability and generalizability of findings. However, baseline measures relied on self-reported data, which are subject to biases such as social desirability and recall inaccuracies. Additionally, cultural differences in interpretation may affect some responses. Future analyses will examine longitudinal effects and explore heterogeneity in policy impacts across racial and ethnic groups.

## 3. Results

### *3.1. Maternal Age*

Maternal age did not significantly differ between Black mothers and the reference group (White mothers; B = -0.005, SE = 0.052, p = 0.931). Hispanic mothers were significantly older than White mothers (B = 0.163, SE = 0.052, p = 0.002), while there was no significant difference for mothers identifying as "Other" (B = 0.028, SE = 0.038, p = 0.466).

### *3.2. Maternal Education*

Hispanic mothers had significantly fewer years of education compared to White mothers (B = -0.110, SE = 0.053, p = 0.037). No significant differences were observed for Black mothers (B = 0.017, SE = 0.053, p = 0.751) or mothers identifying as "Other" (B = 0.060, SE = 0.039, p = 0.121).

### *3.3. Food Stamp Receipt*

Older maternal age was associated with greater likelihood of food stamp receipt (B = 0.174, SE = 0.030, p < 0.001). Black mothers were significantly more likely to receive food stamps compared to White mothers (B = 0.113, SE = 0.051, p = 0.026). In contrast, Hispanic mothers were significantly less likely to receive food stamps than White mothers (B = -0.170, SE = 0.051, p = 0.001). No significant differences were observed for mothers identifying as "Other" (B = 0.056, SE = 0.037, p = 0.137). Maternal education was not significantly associated with food stamp receipt (B = 0.001, SE = 0.030, p = 0.984).

### *3.4. Maternal Depressive Symptoms*

Maternal education was inversely associated with depressive symptoms (B = -0.084, SE = 0.031, p = 0.007), indicating that higher educational attainment was linked to fewer depressive symptoms. Hispanic mothers reported significantly fewer depressive symptoms compared to White mothers (B = -0.147, SE = 0.052, p = 0.005), while mothers identifying as "Other" reported higher depressive symptoms (B = 0.089, SE = 0.038, p = 0.019). No significant differences were observed for Black mothers compared to White mothers (B = 0.030, SE = 0.052, p = 0.565). Maternal age was not significantly associated with depressive symptoms (B = 0.004, SE = 0.031, p = 0.898).

### *3.5. Maternal Self-Rated Health (SRH)*

Older maternal age was positively associated with better physical self-rated health (B = 0.079, SE = 0.031, p = 0.010). Conversely, higher maternal education was associated with worse self-rated health (B = -0.067, SE = 0.031, p = 0.030). Black mothers reported significantly worse self-rated health compared to White mothers (B = -0.169, SE = 0.052, p = 0.001), while no significant differences were observed for Hispanic mothers (B = -0.042, SE = 0.052, p = 0.426) or mothers identifying as "Other" (B = 0.005, SE = 0.038, p = 0.891).

### *3.6. Breastfeeding Intention*

Higher maternal education was significantly associated with increased breastfeeding intention (B = 0.063, SE = 0.030, p = 0.033). Black mothers were significantly less likely to plan for breastfeeding compared to White mothers (B = -0.112, SE = 0.049, p = 0.023). Hispanic mothers, however, were significantly more likely to plan for breastfeeding (B = 0.261, SE = 0.049, p < 0.001). No significant differences were observed for mothers identifying as "Other" (B = 0.026, SE = 0.036, p = 0.481). Maternal age was not significantly associated with breastfeeding intention (B = 0.025, SE = 0.029, p = 0.406).

**Table 1. Summary of Structural Equation Model**

| | B | SE | 95% | CI | p |
|---|---|---|---|---|---|
| **Mom Age** | | | | | |
| Mom Race/Ethnicity: Black | -0.005 | 0.052 | -0.106 | 0.097 | 0.931 |
| Mom Race/Ethnicity: Hispanic | 0.163 | 0.052 | 0.061 | 0.265 | 0.002 |
| Mom Race/Ethnicity: Other | 0.028 | 0.038 | -0.047 | 0.103 | 0.466 |
| Intercept | 4.487 | 0.140 | 4.211 | 4.762 | <0.001 |
| **Mom Depressive Symptoms (0-22)** | | | | | |
| Mom Age | 0.004 | 0.031 | -0.057 | 0.065 | 0.898 |
| Mom Education (yrs) | -0.084 | 0.031 | -0.145 | -0.023 | 0.007 |
| Mom Race/Ethnicity: Black | 0.030 | 0.052 | -0.071 | 0.131 | 0.565 |
| Mom Race/Ethnicity: Hispanic | -0.147 | 0.052 | -0.249 | -0.045 | 0.005 |
| Mom Race/Ethnicity: Other | 0.089 | 0.038 | 0.015 | 0.163 | 0.019 |
| Intercept | 1.913 | 0.204 | 1.512 | 2.313 | <0.001 |
| **Mom Physical SRH (1-5)** | | | | | |
| Mom Age | 0.079 | 0.031 | 0.019 | 0.140 | 0.010 |
| Mom Education (yrs) | -0.067 | 0.031 | -0.128 | -0.006 | 0.030 |
| Mom Race/Ethnicity: Black | -0.169 | 0.052 | -0.270 | -0.068 | 0.001 |
| Mom Race/Ethnicity: Hispanic | -0.042 | 0.052 | -0.144 | 0.061 | 0.426 |
| Mom Race/Ethnicity: Other | 0.005 | 0.038 | -0.070 | 0.080 | 0.891 |
| Intercept | 2.239 | 0.207 | 1.833 | 2.646 | <0.001 |
| **Food Stamp** | | | | | |
| Mom Age | 0.174 | 0.030 | 0.115 | 0.232 | <0.001 |
| Mom Education (yrs) | 0.001 | 0.030 | -0.059 | 0.060 | 0.984 |
| Mom Race/Ethnicity: Black | 0.113 | 0.051 | 0.013 | 0.212 | 0.026 |
| Mom Race/Ethnicity: Hispanic | -0.170 | 0.051 | -0.271 | -0.070 | 0.001 |
| Mom Race/Ethnicity: Other | 0.056 | 0.037 | -0.018 | 0.129 | 0.137 |
| Intercept | 0.400 | 0.200 | 0.009 | 0.791 | 0.045 |
| **Mom Breastfeeding** | | | | | |
| Mom Age | 0.025 | 0.029 | -0.033 | 0.082 | 0.406 |
| Mom Education (yrs) | 0.063 | 0.030 | 0.005 | 0.121 | 0.033 |
| Mom Race/Ethnicity: Black | -0.112 | 0.049 | -0.209 | -0.015 | 0.023 |
| Mom Race/Ethnicity: Hispanic | 0.261 | 0.049 | 0.164 | 0.358 | <0.001 |
| Mom Race/Ethnicity: Other | 0.026 | 0.036 | -0.046 | 0.097 | 0.481 |
| Intercept | 1.281 | 0.198 | 0.893 | 1.669 | <0.001 |
| **Mom Education (yrs)** | | | | | |
| Mom Race/Ethnicity: Black | 0.017 | 0.053 | -0.086 | 0.120 | 0.751 |
| Mom Race/Ethnicity: Hispanic | -0.110 | 0.053 | -0.213 | -0.007 | 0.037 |
| Mom Race/Ethnicity: Other | 0.060 | 0.039 | -0.016 | 0.136 | 0.121 |
| Intercept | 4.166 | 0.130 | 3.910 | 4.421 | <0.001 |

*Note: 1050 participants who were found eligible for BF'Y study are included. All data are collected at baseline before participants were allocated into to groups.*

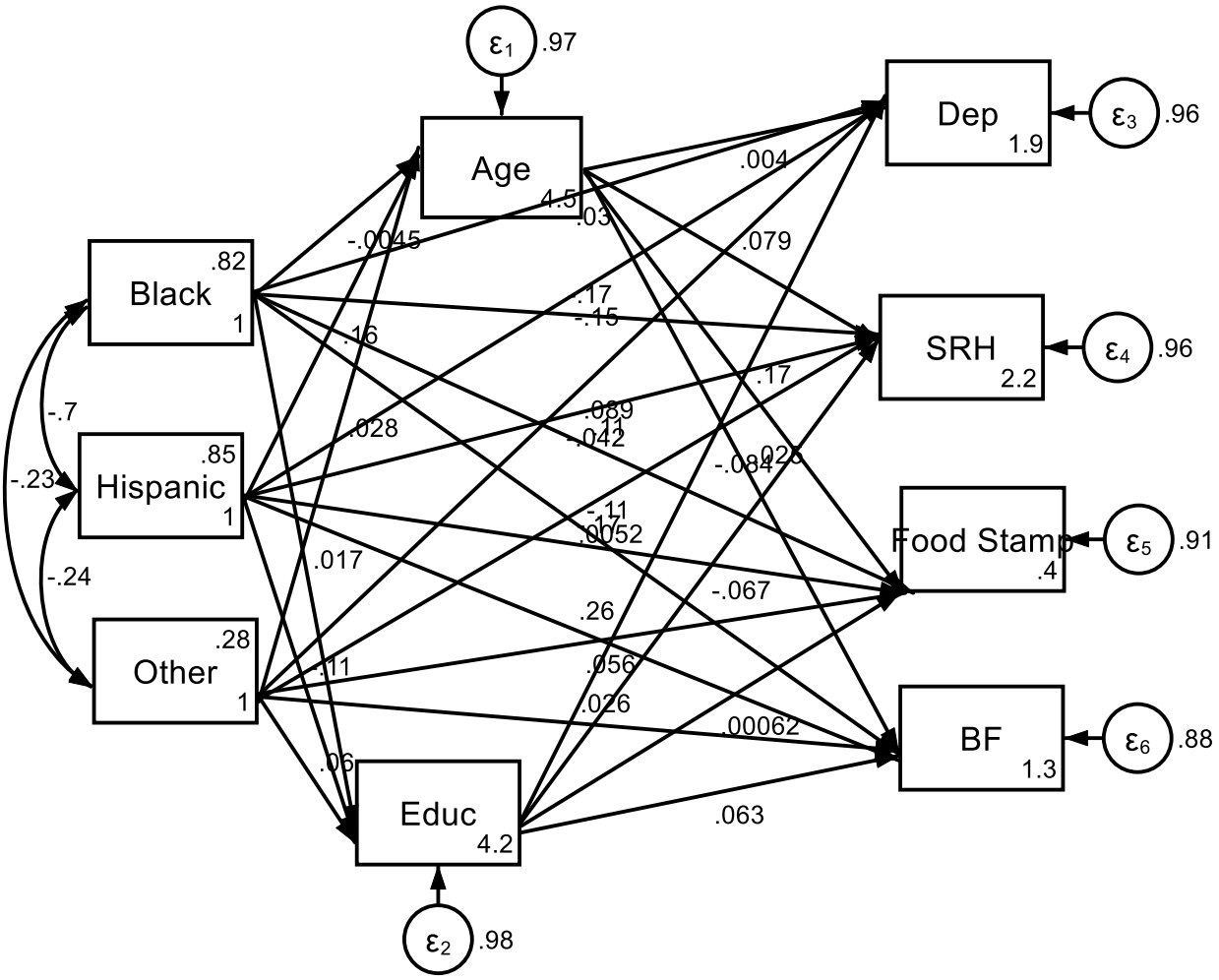


**Figure 1.** Summary of structural equation model

## 4. Discussion

The findings from this baseline analysis of the Baby's First Years (BFY) Study highlight important racial and ethnic differences in demographic, socioeconomic, health, and behavioral characteristics among families living in poverty. These disparities underscore the complex ways in which structural inequities, cultural factors, and systemic barriers shape the lived experiences of Black, Hispanic, and other families navigating poverty. Understanding these differences is essential for designing and implementing policies that equitably address the needs of diverse populations.

The observation that Hispanic mothers were older at baseline compared to White mothers highlights potential differences in life stage dynamics that may shape how families experience poverty and respond to interventions. Older Hispanic mothers may have more established networks and resources but might also face unique challenges, such as immigration-related stressors, language barriers, or cultural expectations. These factors could influence their ability to access and utilize support systems effectively. In contrast, the absence of age-related differences for Black mothers compared to White mothers suggests other structural factors, such as systemic inequities, may play a more central role in shaping their experiences. These variations underscore the need for interventions that are tailored to the unique demographic profiles and life circumstances of different racial and ethnic groups.

Hispanic mothers reported fewer years of education compared to White mothers, while Black mothers were significantly more likely to receive food stamps. These findings

highlight the distinct socioeconomic challenges faced by different racial and ethnic groups [79]. One explanation if the higher reliance on food assistance among Black mothers can be the broader structural inequities, such as systemic racism and segregation, that limit access to economic opportunities and resources. Black people are among most poor people in the USA [80-84]. While food assistance programs are critical for addressing immediate needs, they do not address the root causes of poverty or foster long-term economic mobility. Similarly, the lower educational attainment reported by Hispanic mothers may indicate barriers such as limited access to quality education or the impact of immigration-related stressors. Combination of short, midterm and long-term strategies may help people to get rid of poverty trap. Policies aimed at reducing poverty must not only provide financial support but also address these systemic barriers, ensuring that interventions are tailored to the unique socioeconomic contexts of each group to promote sustainable improvements in well-being.

Hispanic mothers reported lower levels of depression and were more likely to plan for breastfeeding compared to White mothers, which aligns with research suggesting that Hispanic individuals often report better mental health outcomes and stronger cultural norms around breastfeeding despite economic disadvantages. However, these advantages may not extend across all subgroups or persist over time. Conversely, Black mothers were less likely to plan for breastfeeding and reported worse self-rated health compared to White mothers. These disparities may reflect systemic barriers, such as limited access to culturally relevant breastfeeding education, workplace policies that do not support breastfeeding, or the cumulative effects of structural racism on health. Interventions aimed at improving maternal health and behavioral outcomes must address these underlying inequities and prioritize culturally sensitive approaches to meet the unique needs of Black and Hispanic mothers.

### *4.1. Policy Implications*

The heterogeneity observed in this study underscores the importance of moving beyond "one-size-fits-all" anti-poverty policies [85-89]. Cash assistance and guaranteed income programs have shown promise in improving outcomes for families in poverty, but their effects are likely moderated by factors such as race, ethnicity, and systemic discrimination. For instance, Black families may face structural barriers that limit their ability to fully benefit from increased income, such as living in food deserts or neighborhoods with limited access to quality education and healthcare.

### *4.2. Future Directions*

Future research should focus on examining how these differences influence the uptake and impact of policies like cash assistance across racial and ethnic groups. Additionally, policy interventions should be designed to address the structural determinants of poverty, including housing, education, healthcare, and employment opportunities. Addressing systemic racism and discrimination must be central to these efforts, as they shape the conditions under which families live and the extent to which they can benefit from available resources.

### *4.3. Limitations*

This analysis is based on BFY baseline data, which limits the ability to assess the long-term effects of cash assistance or other interventions. Further, while this study provides valuable insights into racial and ethnic differences, it does not capture within-group heterogeneity, which may also influence outcomes. Future studies should consider more granular analyses, including subgroup differences by immigration status, language proficiency, and geographic location.

## 5. Conclusion

The baseline findings from the BFY study provide a compelling case for the need to tailor anti-poverty policies to the unique needs and circumstances of different racial and ethnic groups. Addressing the structural inequities that underlie these disparities will require a comprehensive approach that integrates financial assistance with systemic reforms in housing, education, and healthcare. By doing so, policymakers can create more equitable opportunities for families living in poverty, ultimately reducing disparities and promoting long-term well-being for children across all racial and ethnic groups.

**Conflict of Interest:** None

**Funding:** Part of Hossein Zare effort comes from the NIMHD U54MD000214.

**Acknowledgment:** We used the Baby's First Years (BFY) data from ICPSR, University of Michigan, Ann Arbor. We are grateful to the ICPST and BFY team.

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