

Can Cash Transfers Improve Maternal Well-being and Family Processes among Families with Young Children? An Experimental Analysis

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Disclosure Statement

Authors Gennetian, Duncan, Fox, Halpern-Meekin, Han, Magnuson, Noble, Yoo, and Yoshikawa declare no relevant or material financial or non-financial competing interests that relate to the research described in this paper.

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Abstract

Objective: The goal of this study is to examine the causal impacts of an unconditional cash transfer on a range of key family processes that are thought to affect children's development, including economic hardship, maternal well-being, family relationships, and parenting.

Background: Although robust correlational evidence suggests that poverty harms children by increasing economic hardship, as well as reducing family well-being and the quality of family processes, few studies have used an experimental approach to comprehensively examine the effects of cash transfers on these pathways. **Method:** The Baby's First Years study recruited 1,000 low-income mothers of newborns. Shortly after giving birth, mothers were randomized to receive a monthly unconditional cash transfer of either \$333 or \$20 per month. Follow-up data were collected from mothers approximately 12, 24, and 36 months after the birth of their child.

Results: Although the intervention produced a moderate increase in household income and reduced poverty, we observe no detectable improvements in mothers' subjective reports of economic hardship or the quality of play with their infants, and some small, although mostly nonsignificant, increases in parental psychological distress and declines in the quality of mothers' relationships. However, mothers who received the higher cash gift amounts reported more frequently engaging in enriching child activities than did mothers who received lower cash gift amounts. **Conclusion:** We find little support for the hypothesis that material hardship, maternal well-being, or family relationships are positively affected by a moderate unconditional cash transfer among families with young children. **Implications:** Cash support may provide other benefits for families and children, but moderate levels of support do not appear to address self-reported economic hardship and maternal well-being as captured in standard survey measures.

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Research has shown that poverty experienced during early childhood is associated with worse child, youth, and adult outcomes. Aspects of development affected by poverty early in life include learning, educational attainment, physical and mental health, and adult earnings (National Academies of Sciences, Engineering, and Medicine, 2019). The negative effects of poverty may be particularly strong when it is experienced during early childhood, relative to later in childhood and in adolescence (Duncan et al., 2012). Developmental theory suggests that family processes play an important role in explaining associations between income poverty and children's outcomes (Masarik & Conger, 2017). However, the extent to which income support and anti-poverty initiatives causally affect family processes among families with low incomes is not well understood.

Many longitudinal, non-experimental studies have established the cascading effects of economic hardship and low income, which contribute to parental psychological distress and reduce the quality of family relationships, parenting, and child outcomes. The goal of this experimental study is to examine the extent to which a multi-year cash transfer program—which provides an approximately \$4,000 annual unconditional cash transfer, distributed monthly as a cash gift on a debit card to low-income mothers of newborns—affects economic hardship, maternal well-being, family relationships, and parenting across the first three years of life.

Background

It is well understood that poverty and poor mental health are highly correlated. Ridley et al. (2020) summarize the existing evidence on experimental studies of income changes in low- and middle-income countries concluding that, on average, cash transfers have small positive impacts on mental health, whereas negative economic shocks undermine mental health. The mechanisms by which poverty affects mental health are diverse, including financial uncertainty and worry, exposure to harmful environmental contexts, and experiences of violence, trauma, and crime (Ridley et al., 2020).

Scholars of family systems have further argued that economic hardship resulting from poverty is especially harmful to parents, because of their role in caring for children. The Family Stress Model posits that poverty results in economic hardship, and this in turn generates parental psychological distress and decreases emotional well-being, which has an adverse effect on co-parental relationships and parenting quality. In turn, harsher as well as less warm and stimulating parenting results in worse child and adolescent behavioral and academic outcomes (Figure 1; Conger, et al., 1994; Conger et al., 2002; Raver et al., 2007). This model was first developed in the context of the Great Depression and Iowa farm floods and has since been applied to urban families of differing racial and ethnic backgrounds across both early childhood and adolescence (Iruka et al., 2012; Masarik & Conger, 2017; Mistry et al., 2002; Neppel et al., 2016; Raver et al., 2007).

INSERT FIGURE 1 HERE

Numerous correlational studies have estimated path models of the associations from low income and economic hardship to children's developmental outcomes, as depicted in Figure 1 (see Masarik & Conger, 2017 for a review). However, rarely has the model been estimated in the context of an anti-poverty program, to examine whether cash supports that reduce family poverty causally improve family processes. A key theoretical question about the Family Stress Model is raised in the context of cash transfer programs. As reviewed by Baranov and colleagues (2021),

when cash transfers are provided to a mother, some theories suggest it may increase threats or experiences of intimate partner violence. Status inconsistency and gendered resource theories suggest cash transfers might increase conflict and violence because a woman's increased income threatens the male partner's gendered ideas about resources and status (Atkinson, Greenstein, & Lang, 2005). Household bargaining theory argues that threats and use of violence are an instrumental tool that male partners might use to garner a larger portion of the cash transfer (Bobonis, Gonzalez-Brenes & Castro, 2013). These theories run counter to the predictions from the Family Stress Model that suggest increased resources should reduce parents' stress and thus improve the quality of their relationships.

Most conditional cash transfer (CCT) and unconditional cash transfer (UCT) programs have been conducted in low- and middle-income countries. Experimental evaluations of these programs typically include some measures of economic well-being as well as physical and mental health, but few include measures of family processes. Systematic reviews of these international studies find that, on average, cash transfer programs improve food security and indicators of economic well-being as well as mental health (Bastagli et al., 2016; Cooper et al., 2020; Kabeer & Waddington, 2015; Pega et al., 2017). A recent meta-analysis of 45 CCT and UCT evaluations conducted in low- and middle-income countries found average effect sizes of +.13 on adult subjective well-being and -.07 on mental health problems (primarily depressive symptoms; McGuire et al., 2022). In addition, most cash transfer programs either reduce intimate partner violence or do not affect it at all. Baranov et al.'s meta-analysis (2020) found that cash transfer programs reduce intimate partner violence by 2%–4% depending on the type of violence measured.

However, systematic reviews suggest considerable heterogeneity in the estimated impacts of cash transfer programs on parent and child well-being, both across and within studies (Cooper et al., 2020; McGuire et al. 2022). McGuire and colleagues' (2022) meta-analysis found that unconditional cash transfers had larger impacts than conditional ones, and that impacts declined over time after the payments ended. Yet not all results are consistent—an evaluation of a UCT program in Ecuador found that monthly cash transfers amounting to 10% of household income improved young children's development among the poorest families, but generated null to negative effects on maternal mental health among those same families (Paxson & Schady, 2010; Fernald & Hidrobo, 2011). Likewise, Hidrobo and Fernald (2013) found that the same cash transfer in Ecuador reduced emotional violence in households with more highly educated mothers, but not among those with lower levels of education. Among those with lower levels of education, if the mother had a higher level of education than her partner, the cash transfer appeared to increase emotional violence.

In the United States, studies of the Earned Income Tax Credit (EITC), as well as Child Tax Credit (CTC) expansions and welfare reform, provide more inconsistency in the evidence that poverty reduction policies and programs improve parental well-being and parenting (Boyd-Swan et al., 2016; Morgan et al., 2022; Morris, et al., 2009). Experimental and quasi-experimental studies of expansions of the EITC and similar programs have found that these benefits have positive impacts on the mental health of women (Boyd-Swan et al., 2016; Courtin et al., 2022; Evans & Garthwaite, 2014) and the quality of children's home environments (Avarett & Yang, 2018). In contrast, a synthesis of welfare reform studies showed that programs that increased mothers' incomes by a few thousand dollars generated only selective reductions in economic hardship and improvements in maternal mental health. In addition, these studies reported null to small impacts on the quality of family relationships and parenting (Morris, et al.,

2009). Yet, it is hard to extrapolate from these studies to unconditional cash transfers because these tax and welfare policies and programs condition increased incomes on employment.

Studies of recurring cash transfers to low-income families are rare in the United States and yield mixed results (Gennetian & Gassman-Pines, 2024). An evaluation of a CCT study conducted in New York City and Memphis found reduced economic hardship and small positive improvements in parents' psychological well-being (Miller et al., 2016). More recently, the expansion of the CTC in 2021 provided an opportunity to study the impact of generous cash payments provided to parents for six months. Quasi-experimental studies clearly show that the CTC reduced poverty and multiple aspects of economic hardship (Collyer et al., 2022). Yet studies also showed mixed findings for parents' mental health outcomes, including depression and anxiety (Batra, Jackson, & Hamad, 2023; Collyer et al., 2022; Glasner et al., 2022; Kovski et al., 2023; Nam & Kwon, 2024). In the case of the CTC, it is also hard to know whether findings would generalize to contexts outside of the COVID-19 pandemic.

Finally, related evidence comes from experimental studies of one-time unconditional cash transfers provided during the COVID-19 pandemic in the United States. These studies found that while the transfers increased spending, they did not have positive impacts on other outcomes, including psychological well-being. Pilkauskas and colleagues (2023) and Jacob et al. (2022) studied two rounds of \$1,000 one-time cash transfers given by GiveDirectly to families receiving food assistance in 12 states. The first study examined the impact of payments that were disbursed in May of 2020, and found that while spending increased, the transfers did not change any of the key outcomes considered: material hardship, mental health challenges, partner conflict, child behavior problems, or parenting behaviors. A subsequent study of similar payments provided in September of 2020 also reported null effects on self-reports of stress, anxiety, and depression. An additional experimental study provided unconditional cash to individuals who had approached a non-profit organization seeking pandemic cash relief (Jaroszewicz et al., 2022). Individuals were randomly assigned to a control group or to receive a one-time payment of either \$500 or \$2,000. Surprisingly, results indicated that both payments had negative impacts on subjective measures of well-being after several months, which the authors attributed to the windfall of money not being large enough to take care of recipients' needs. Again, a key limitation of these pandemic studies is the uncertainty about whether findings would generalize outside of the unique context created by the global public health crisis, and whether larger or more regular payments would yield differing results.

Nearly all studies of cash transfers have focused on families or adults without regard to the age of their children. As a result, when thinking about how cash transfers might affect families with very young children, several additional factors warrant consideration. First, romantic partner relationships may change in both unmarried and married households following the birth of a child (Carlson et al., 2004). Early versions of research on the Family Stress Model focused on families with two heterosexual parents, while later work included single-mother families (Barnett, 2008). Owing to considerable complexity and fluidity in family structures, especially in the early years of a child's life, the concept of parental relationship quality may need to be expanded to include the quality of both co-parenting relationships with a former partner as well as romantic relationships with partners who are not biological parents of the resident children. Likewise, for families with young children, it may be especially useful to also assess impacts on parenting stress (Dalimonte-Merckling & Brophy-Herb, 2019; Winstone, Curci & Crnic, 2021). Given the care and attention required in the early years of life, young children make uniquely intensive demands on parents. Even when parents have other children,

the birth of a child often necessitates a reorganization of responsibilities and roles within families, and this can contribute to stress associated with the parenting role (Nomaguchi & Milkie, 2020).

The current study, Baby's First Years (BFY), provides the first U.S.-based test of the effects of a regular monthly unconditional cash transfer program on economic well-being, the quality of family relationships, maternal mental health and well-being, as well as parenting stress measured among mothers of 12-, 24-, and 36-month-olds. Gennetian et al (2024) found that the unconditional cash transfers in the BFY study had selective impacts on the amount of time and money that mothers invest in their young children. Estimates suggest that mothers spent more time engaged in cognitively stimulating activities with their children. In addition, approximately 25% of the value of the cash gift was used on children's books, toys, activities, clothing, diapers, and children's electronic items/devices. However, there were no significant cash-gift impacts on core household expenditures such as food and rent, mothers' participation in paid work or sources of other household income, or children's time in child care. Gennetian et al.'s (2024) analysis shows a great deal of diversity in locations of debit cards transactions, including ATMs, big box stores, gas stations, restaurants, children's stores, and phone bills.

This paper furthers our understanding of the impact of the BFY monthly unconditional cash transfers by considering their impact on other indicators of family well-being. Our research questions are: (1) Does a monthly unconditional cash transfer for low-income mothers of infants and toddlers in the United States reduce economic hardship, maternal stress (self-reported and physiological), parenting stress, and mothers' depressive and anxiety symptoms? (2) Does a monthly unconditional cash transfer improve co-parenting and relationship quality with current or past romantic partners? And finally, (3) does a monthly unconditional cash transfer improve aspects of parenting, including warmth/encouragement, harshness, and stimulating activities?

Method

Data

We use data from Baby's First Years (BFY), an ongoing randomized control trial in which unconditional monthly cash transfers, hereafter referred to as "cash gifts," are being given to 1,000 mothers. Between May of 2018 and June of 2019, mothers were invited to participate in the study shortly after giving birth. Mothers were recruited from the postpartum wards of 12 U.S. hospitals in four metropolitan areas: New York City, New Orleans, Omaha, and the Twin Cities (Minneapolis and St. Paul). When recruited into the study, all mothers reported an income below the federal poverty threshold. To participate, mothers had to be 18 or older; speak either English or Spanish; live in the state of recruitment with no immediate plans to move out of state; and report household income in the previous calendar year below the federal poverty threshold. In addition, they had to have a singleton pregnancy, their newborns must not have required intensive care, and newborns had to be discharged into the custody of their mothers. A total of 1,000 mothers with newborns were enrolled in the study. The recruitment and subsequent three years of data collection were conducted by the Survey Research Center at the University of Michigan.

The Institutional Review Board (IRB) of Teachers College, Columbia University, has served as the single IRB of record for most of the study sites. To address ethical concerns regarding the possibility that cash gifts might coerce mothers to participate in research-based data collections, informed consent to participate in the research was uncoupled from the agreement to receive the monthly cash gift. Interviewers first described the longitudinal research study focused on child development and family life. After mothers consented to participate and

were compensated for completing the baseline survey, the mothers were offered the opportunity to receive a monthly cash gift. Mothers who agreed to receive the cash gift were told the gift amount and their debit card was activated. Mothers were also informed that the study randomly assigned \$333 or \$20 monthly cash gifts.

At the time of recruitment, our hundred mothers were randomly assigned to the “high-cash gift group” receiving \$333 per month, and six hundred mothers were randomly assigned to the “low-cash gift group” receiving \$20 per month. Randomization occurred within each of the four sites. The first step in the randomization process was to create four rosters of 250 rows each, with 150 rows designated as “low-cash gifts” and 100 designated as “high-cash gifts.” Each of the four 250-row rosters was then randomly ordered. Rows were assigned consecutively numbered cash gift IDs. As the 12-month recruitment period proceeded, it became clear that one site would not reach its goal of 250 recruited mothers, and this led to a roughly equal increase in the recruitment targets in the other three sites. To accomplish this, additional roster rows were created in each of these sites using the same randomization procedure. When aggregated, the 1,000-row roster matched exactly the 40%/60% distribution of cash gifts across all possible respondents. A web-based application was used to access these rosters during the recruitment process, determine the high- vs. low-cash gift condition to be offered to each participant, record that the condition was offered, and communicate the gift value to the interviewer. Taken together, these procedures ensured the integrity of the randomization process so that interviewers could not influence the assigned amount. As recruitment proceeded, three mothers’ who accepted the high cash gift called within three days of its receipt to say they no longer wanted the debit card. These mothers were removed from the study, and three additional mothers were recruited, to ensure that the high-cash gift group had a sample size of 400 at baseline. Further details of recruitment and randomization can be found in Noble et al. (2021).

Following randomization, mothers were given a debit card that was activated at the hospital. Monthly cash gifts were loaded onto the 4MyBaby card on the evening prior to the day of the child’s birthdate and accompanied by a text alert (see Gennetian et al., 2023, for details about the cash gift). Efforts were made to ensure that, to the extent possible, the cash gift did not affect the mother’s eligibility for safety net programs, such as the Supplementary Nutritional Assistance Program (SNAP), by working with state agencies and legislatures to make necessary rule changes. Mothers were initially told that the payments would continue for 40 months. In June of 2021, when children were approaching their third birthdays, mothers were informed that cash gifts would continue for another year (for a total of 52 months). This was extended again in the June of 2022 for an additional two years (for a total of 76 months).

The first follow-up data were collected at approximately the time of the infants’ first birthdays, between July 2019 and July 2020. This wave of follow-up data was originally collected during a home visit, which included an in-person maternal survey, a videorecording of mother-child interactions, collection of a maternal hair sample for stress hormone (cortisol) analysis, and mobile electroencephalography (EEG) to measure the child’s brain activity. Due to the COVID-19 pandemic, research staff switched from in-person to telephone-based data collection on March 13, 2020. At that point, it was no longer possible to collect video, hair, or EEG data. In all, 605 mothers completed data collection during a home visit, and 326 completed a survey by phone. Subsequent rounds of maternal surveys were administered by telephone at approximately the time of children’s second and third birthdays.

After adjusting for a small number of mother-child separations, as well as infant and maternal deaths, the overall survey response rate was over 94% at each age (Appendix Figure 1).

During the age-1 visit, videos of mother-child interactions were collected for 570 dyads (94% of the in-person sample) and hair samples from 409 mothers (68% of the in-person sample). The most common reasons for not completing the videorecorded interaction task included equipment malfunction, the child not being available, and mother's refusal. Reasons for not providing a hair sample include the use of corticosteroids and mother's refusal.

Preregistered hypotheses about measures and statistical procedures are available both from clinicaltrials.gov ([NCT03593356](https://clinicaltrials.gov/ct2/show/study/NCT03593356); first posted July 2018) and socialscienceregistry.org (AEARCTR-0003262, first posted June 2019). As the longitudinal study progressed, there were necessary deviations in the pre-registered study plans. These deviations included, for example, changes in which measures were selected to be used, the number of items within indices, and at which ages some measures were collected. Many, but not all, of the deviations made from the original pre-registration plan were made to adjust the study after the onset of the COVID-19 pandemic, which required us to postpone plans for in-person data collection from children's third birthdays to their fourth birthdays. All of the deviations in pre-registration have been carefully documented and can be found by consulting the clinicaltrials.gov or [social science registry](https://socialscienceregistry.org) documentation.

In addition, this paper deviates in some ways from the pre-registered analysis plan. For example, we conduct additional analytic models to test the sensitivity of our findings to alternative specifications, and we estimate models that are pooled across all available ages of data. We identify throughout the paper which analytic models do and do not align with our pre-registered plans.

Appendix Table 2 provides a list of all primary and secondary preregistered outcomes through the age-3 data collection. The study is ongoing, and survey data for the first three years of the study are publicly available through ICPSR (Magnuson et al., 2024).

Measures

Following Figure 1, we organized outcome measures into the following five categories: Economic Resources, Economic Pressure, Maternal Psychological Distress, Maternal Co-parental and Romantic Relationship Quality, and Parenting Quality. We provide more details on the available measures for each category in Appendix Table 3. We report Cronbach's Alpha for the scales and indices for the full sample and have conducted confirmatory factor analysis to ensure that there were no substantive differences in the factor structure of multi-item scales across racial and ethnic groups (Black vs. Hispanic) or by survey language (Spanish vs. English). However, we note that while we confirmed configural measurement invariance, we did not find evidence of scalar or metric equivalence for scales across racial groups or by survey language. We return to this in the discussion when interpreting our findings. For some measures, there are some inconsistencies in the number of items included in the composite measures over three ages of data collection. This occurred both by design and because of errors in survey construction. Details for each composite measure are provided below.

Economic Resources

During all three follow-up surveys after baseline, mothers reported household pre-tax income in the previous calendar year and listed current adults and children in the household. We use data from ages 2 and 3, because our survey asked about income in the prior calendar year, and this ensures that information about income is from calendar years after random assignment (more information about income at age-1 can be found in Gennetian et al., 2024). We divided the average total household income, including the BFY cash gift, by the corresponding federal

poverty threshold for a given household to create the “income-to-needs ratio.” An income-to-needs ratio of 1.0 corresponds to 100% of the federal poverty threshold. In 2019, the federal poverty threshold for a family of four with two children was \$2,161 per month (or \$25,926 for that year).

Economic Hardship

We have three measures of economic hardship generated from the maternal survey. First, we used an additive index of 5–6 items from the U.S. Department of Agriculture’s short-form measure of food insecurity (Blumberg et al., 1999), which had high internal consistency ($\alpha=.85-.87$) across ages. At age 1, one of the items, specifically about hunger, was inadvertently omitted, but the full scale was administered in the age 2 and 3 surveys. Second, we created an additive index of 4–5 economic hardships (e.g., missing rent/mortgage payments) adapted from the economic stress index used in the Moving to Opportunity study (Kling, Liebman, & Katz, 2007). This index of economically stressful events had low internal consistency ($\alpha=.46-.54$). Modest internal consistency might be expected and acceptable for an index such as this when the indicators are discrete events that are likely substitutes. In the age-3 survey, the item asking about missed phone payments was inadvertently omitted. Finally, we used a single item that was included in the economic stress index items (i.e., “worry about being able to meet monthly living expenses”) with a 6-point response scale, because it so closely aligns with economic worry.

Mother’s Psychological Distress

The maternal survey included four self-reported measures of mothers’ stress and mental health. In addition, a sample of maternal hair was analyzed for cortisol concentration, providing a measure of physiological stress. General perceptions of life stress were measured by the Perceived Stress Scale (Cohen et al., 1994, 1983), which had high internal consistency ($\alpha=.75-.79$). During age-1 and age-2 waves of data collection, an item was inadvertently omitted, so the scale has 9 rather than 10 items; this item was added to the age-3 survey. It is notable that the mothers in this sample reported relatively lower levels of stress compared with national samples (Cohen & Janicki-Deverts, 2012). We also constructed a parenting stress index by summing two adapted indices: the parent aggravation index from the Panel Study of Income Dynamics’ Child Development Supplement (Schickedanz et al., 2018) and the parenting competence index created for the Getting Access to Income Now (GAIN) study (reversed coded; Slack, Berger, & Collins, 2016). Together, this parenting stress index had modest internal consistency ($\alpha=.55$). Depression was measured by the Personal Health Questionnaire Depression Scale (PHQ-8, Kroenke et al, 2009), an additive index of eight items with high internal consistency ($\alpha=.84$). We use the scale as a continuous measure; note that across all three waves of data collection, only 9–10% of mothers scored above the suggested clinical cutoff, indicating moderate or higher levels of depression. This is comparable to rates of clinical depression found during the first postpartum year among mothers in the United States (Adynski et al., 2019) but lower than expected for low-income adults (Cao et al., 2020).

During the age-1 and age-3 waves of data, anxiety was measured by the Beck Anxiety Inventory (Beck et al., 1988), an additive scale of 21 items. In addition, anxiety was measured by the Generalized Anxiety Disorder (GAD-7) scale during the at age-2 and age-3 data. Both measures of anxiety had high internal consistency across all waves ($\alpha = .90-.92$). We use the GAD-7 scale as a continuous measure in our analysis. About 7–9% of mothers during the age-2 and 3 data collection were above the suggested clinical cutoff indicating moderate or higher levels of anxiety. This is comparable to rates of elevated anxiety found in mothers during the antenatal period and first postpartum year (Adynski et al., 2019; Araji et al., 2020).

We collected a hair sample from 409 of the 605 mothers (68%) who participated in the age-1 home interviews, but only 364 had usable values. Hair samples yield a measure of cortisol concentration in picograms per milligram (pg/mg). Values of 750 and higher (n=45) are physiologically implausible and thus were not analyzed. Based on Lakens et al. (2018), we adjusted two outlier values above 520 pg/mg by recoding them as 520 pg/mg. All values were then log transformed.

Mothers' Interparental and Romantic Partner Relationship Quality

In the age-1 and age-2 surveys, questions adapted from the Fragile Families and Child Wellbeing Study (FFCWS) (McLanahan & Beck, 2010) were used to measure the quality of the mothers' co-parenting relationship in terms of support and trust. These questions were only asked if the father had spent time with their child in the last month. The additive index of seven items had high internal consistency ($\alpha=.90$).

The maternal survey also included questions about the quality of mothers' romantic relationships. Because these items were sensitive in nature, they were administered via audio computer-assisted self-interviewing (ACASI), which allows mothers to record their answers directly into a programmed computer. Because it was not possible to combine ACASI with telephone interviews during the pandemic, responses to these questions were not collected for the mothers surveyed by phone. If a mother reported that she was not currently in a romantic relationship during the age-1 survey, she was asked to report on the quality of the relationship with her most recent partner, such that some mothers reported on relationships that had ended. In later waves of data collection, these questions were only asked if mothers were in a current romantic relationship.

We constructed three measures of mother's romantic relationship quality. An indicator of domestic violence (whether the mother's partner ever cut, bruised, or seriously hurt her in a fight), and an item that describes how often the mother argues with the partner on important matters, both of which come from the FFCWS, were used as individual items. These items were only asked during the age-1 and -2 surveys. Again, for the age-1 survey, this might have referred to a partner with whom the mother was no longer in a relationship. Finally, we measured the quality of the relationship between the mother and her romantic partner using a 10-item additive scale, also from FFCWS. The scale had good internal consistency ($\alpha=.83$).

Parenting Quality

We measured three dimensions of parenting quality. First, to assess engagement in learning activities, we created an additive index of mothers' reported frequency of 4–5 activities that the mother engaged in with the child (Rodriguez & Tamis-LeMonda, 2011). The items differed across waves because of the age appropriateness of activities. For example, at ages 2 and 3 (but not age 1), mothers reported how often they engaged in pretend play with their child. The activities index had adequate internal consistency ($\alpha=.61-.67$). Second, at all ages, we assessed the use of harsh discipline through an indicator of whether the mother reported spanking her child in the past month because of misbehavior.

Finally, during the age-1 home visits, we assessed the quality of the parent-child interaction in the 10-minute video recording to capture affection, responsiveness, encouragement, and teaching in a total scale score using the Parenting Interactions with Children: Checklist of Observations Linked to Outcomes (PICCOLO) (Roggman et al., 2013). We were able to record the interaction for 570 of the 605 mother-child dyads in the in-person, pre-pandemic sample (94%). The team of trained coders included a bilingual master coder and two additional master coders. In total, 135 out of the 540 videos, or 25%, were either double-

coded or consensus-coded, and all intraclass correlation coefficient reliability values exceeded .75 as required (Roggman et al., 2013). After screening and processing the video for audio-video quality, we had usable data on parent-child interactions from 533 dyads.

Control Variables

Data collected during a survey at the time of recruitment (prior to randomization) are used as covariates in our analysis. Items to be used as covariates were chosen because they are theoretically or empirically linked to the outcomes. These covariates included: mother's age, mother's years of completed schooling, household income at baseline, net worth, general health, depressive symptoms, race and ethnicity, marital status, number of adults in the household, number of other children born to the mother, number of cigarettes smoked per week during pregnancy, number of alcoholic drinks consumed during pregnancy, biological father living with the mother, as well as the child's gender assigned at birth, birth weight, and gestational age at birth. We also included as covariates the age of the child in months and whether the 12-month interview was conducted in person or over the phone.

Statistical Power

The overall sample size for the BFY study was designed at the start of the study such that, assuming 20% attrition by the time children were old enough to provide reliable data on our preregistered outcomes (age 36 months), an initial sample size of $n=1,000$ (and $n=800$ at age 3), divided 40%/60% between high- and low-payment groups, provided 80% statistical power to detect a .219 standard deviation age-3 impact at $p < .05$ in a two-tailed test. Our use of baseline covariates in impact estimation models was expected to reduce this minimal detectable effect size, while adjusting standard errors for sample clustering and multiple testing was expected to increase it. Based on exploratory analyses with data from the Fragile Families study (a study with a demographically similar sample to BFY's), we expected that covariates and clustering adjustments would roughly offset one another and would have little net impact on our power. Our pre-registered use of the Westfall and Young multiple testing adjustments was expected to increase the minimally detectable effect size, but the size of the increase depends on the number of measures in the family and their correlations.

When considering survey-based measures in our current analyses, the statistical power is slightly greater than in our original calculations, for two reasons. First, our attrition assumptions proved too pessimistic. As shown in Appendix Figure 1, all the response rates of data collection exceeded 92%. Repeating the original power analysis for $n=920$, the detectable effect size for falls to .195 sd.

Second, because the same survey measures were gathered across multiple ages, we were able to pool age-specific samples and thus increase the effective sample size for our analysis. After adjusting for the nonindependence of the three age-specific samples, we calculated that our pooled analysis has 80% power to detect effects of about .14 standard deviations with a two-sided test without any adjustments for multiple comparisons. The impact of the multiple adjustment to this effect size differs across outcome groupings (or families). Based on Bloom (1995), the minimum detectable effect size (MDES) for a specific analysis given a two-tailed test with $p\text{-value} < .05$ and 80% power can be computed by multiplying a given standard error by 2.8. Therefore, the MDES for each outcome in a family after adjustments for multiple outcomes can be calculated. This post-hoc approach to statistical power indicates that across the measures, our minimum detectable effect sizes range from .14 to .33, with the median of .22 across all 18 outcomes. A .22 effect size is a modest impact, reflecting an increase from the 50th percentile to

the 59th percentile and from the 75th percentile to the 82nd percentile for a normally distributed scale score.

It is worth noting that the larger MDESEs reflect outcomes with smaller sample sizes. Hair cortisol and observations of parent-child interactions occurred in the age-1 data collection but were stopped with the onset of the COVID-19 pandemic. Given the much smaller sample sizes, power is significantly lower to detect small effects.

Analytic Strategy

We used the random assignment design of the BFY clinical trial to estimate the causal effect of the \$333-per-month cash gift payments on our outcome measures. Intent-to-Treat (ITT) effects were estimated by regressing each dependent variable on the high-cash gift group indicator. Our preferred model pools all ages of data together because it increases the precision of our estimates. However, it is worth noting that our pre-registration plan did not include models that pooled outcomes across ages.

We adjusted all estimates for site indicators, as well as all covariates listed above, to increase the precision of our estimates and to account for any residual group differences in baseline characteristics following random assignment. We adjusted the standard errors using robust variance estimation techniques and clustered them at the participant level. We also estimate regressions for each age of data collection separately using the same specifications.

We addressed the possibility of false positives by estimating the statistical significance of the entire family (i.e., familywise error rate; Schochet, 2008) of outcomes using step-down resampling methods developed by Westfall and Young (1993). For the Westfall-Young correction, we place measures into pre-registered conceptual families as specified in the model depicted in Figure 1 and as detailed in Appendix Table 3.

Unbiased ITT estimation requires that the high-cash and low-cash gift groups be similar on observed and unobserved characteristics. We assessed overall group balance using a probit model to jointly predict group assignment using site indicators and all the baseline characteristics listed in Table 1. At baseline and in our pooled analysis, we do not find systematic group differences ($p=.38$ and $p=.28$, respectively). Nevertheless, at baseline and in the pooled sample, mothers in the high-cash gift group were more likely to have never been married and to have a race and ethnic identification that was categorized as “other.” At recruitment, mothers in the high-cash gift group were also more likely to report that their health was “good” or “excellent” (rather than “fair” or “poor”). To address potential bias from these minor differences and to increase the precision of ITT estimates, we control for the baseline characteristics shown in Table 1. This covariate-adjusted ITT model generates our preferred estimates of the high-cash gift’s causal effects. Appendix Tables 1A-1C provides corresponding baseline balance information for our samples at each age of data collection.

We conducted several robustness checks to determine whether our findings were sensitive to the estimation model specifications. First, to better align with the Family Stress Model, some of the conceptual grouping of measures in the present analyses differed from those we preregistered (see Appendix Table 5A). Second, as noted, in some cases our outcome measures had differing numbers of survey items across ages due to error or by design. To be sure that our results were not affected by these differences in the survey administration, we estimated ITT impacts for the scales using only the common items (survey items included in all three surveys; this was not a pre-registered analysis). Third, we used analytic weights that correct for imbalance of baseline characteristics across the high-cash and low-cash gift groups (Appendix Table 7; this was not a pre-registered analysis) to

adjust the pooled sample to reflect the characteristics of the full study sample at baseline (Appendix Table 8; this was not a pre-registered analysis). These weights were constructed using a machine learning algorithm package called TWANG (Toolkit for Weighting and Analysis of Nonequivalent Groups; Ridgeway et al., 2022). To confirm that results were not sensitive to attrition, we used multiple imputation by chained equation, or MICE, using linear regression and predictive mean matching and imputing 20 datasets (this was a pre-registered analysis).

INSERT TABLE 1 HERE

Results

Characteristics of mothers at the time of recruitment are found in Table 1. Mothers averaged about 27 years of age and had completed slightly fewer than 12 years of schooling on average. Mothers reported an average annual household income of about \$22,000. About 40% of the sample identified as non-Hispanic Black and another 40% identified as Hispanic of any race. Close to half of the mothers had never been married, and a little over one-third of the mothers reported living with the biological father of their newborn. About one-third of the newborns were first births (not shown in Table 1). About 24% of mothers lived in households without any other adults and had at least one other child in her household in addition to the focal child (not shown in Table 1). Comparable statistics for the samples at later ages are found in Appendix Tables 1A-1C.

Intent-to-treat analyses.

Our research questions ask whether an unconditional monthly cash gift of \$333 improved measures of key constructs of maternal subjective well-being and parenting compared to receiving a monthly cash gift of only \$20. Table 2 provides descriptive information on mean differences in outcomes between the high-cash and low-cash gift groups.

With its \$3,756 annual cash gift payment difference between the high-cash and low-cash gift groups, BFY was designed to increase economic resources. Although efforts were made to ensure that, to the extent possible, the cash gifts did not count as income in determining eligibility for benefits from most safety net programs, changes in family composition or work effort in response to the payments might lead to group differences in net family incomes that averaged either more or less than \$3,756.

Using income-to-needs as a measure of economic resources, the first row of Table 3 shows that the simple mean differences favor the high-cash group by .11 units in the pooled sample, which corresponds to a 11% increase in household income-to-needs. This effect is statistically significant after multiple testing adjustments. In terms of household income, the adjusted group difference amounts to \$2,850 for the pooled sample—a .13 SD effect. Thus, the cash gift generated increases in economic resources and reductions in poverty over the first three years of the child's life. These difference, however, were modest, as more than half of the mothers receiving high-cash gifts were still residing in households with incomes less than the federal poverty threshold (data not shown in tables, see Gennetian et al., 2024 sfor additional details about the impact of the cash gift on family expenditures, public benefit receipt, and parents' investments in children).

INSERT TABLES 2 and 3 HERE

Did modest reduction in poverty and increases in income yield improvements in measures of economic hardship and pressure—food insecurity, non-food economic hardships, and worries about expenses? We had expected that higher cash gift payments would reduce

economic hardship and pressure, but point estimates show no evidence of reductions in these measures, with effect sizes ranging from $+.04$ SD to $+.07$ SD (Panel 2 in Table 3).

Results show that the impacts of the high-cash gift on measures of maternal well-being and psychological distress were not statistically significant. All the estimated impacts are in the opposite direction of what is predicted by the Family Stress Model (Panel 3, Table 3). Mothers in the high-cash gift group reported consistently higher levels of perceived stress, anxiety and parenting stress, but these coefficients were not statistically significant. It is also noteworthy that the high-cash gift impact appears to have increased maternal anxiety relative to the low-cash gift group as measured by the Beck inventory at age 1 ($.25$ SD), but this impact fell to $-.01$ at age 3.

Given unexpected negative impacts at age 1 on anxiety and negative (not significant) point estimates for other aspects of maternal well-being, we conducted exploratory analyses to consider whether impacts on these scales were also found on subscales that comprise the full scales (Appendix Table 4; not a pre-registered analysis). Specifically, we found that mothers in the high-cash gift group scored significantly higher on both the somatic and the psychological subindex of the Beck Anxiety Inventory. In addition, exploratory analyses indicated that the higher reports of parenting stress at age 1 in the high-cash gift group appeared to be driven by items in the parent aggravation subscale rather than items that assess parenting competence, whereas at age 2 both subscales were similarly elevated in the high-cash gift group.

With respect to mothers' reports of their romantic relationship quality (Panel 4 in Table 3), we find that the high-cash gifts produced an unexpectedly negative impact at age 3. In thinking about these results, it is important to remember that mothers only reported on their relationship quality in later waves of data collection if they were in a romantic relationship. Estimated impacts of the cash gifts on these outcomes might be biased if the cash gift also impacted whether mothers were in relationships. For this reason, it is important to note that there were no differences between the high-cash and low-cash gift groups with respect to reporting of father involvement or being in a romantic relationship. This suggests that selection into relationships does not bias the ITT estimates of these measures of relationship quality for these measures reported in Table 3.

The final set of outcomes that we consider are mother-reported and observed measures of parenting quality (Panel 5 in Table 3). In this group of outcomes, all estimated impacts are in the expected direction, although only one is statistically significant. Mothers in the high-cash gift group reported more frequent engagement in activities such as reading books or playing with their children than mothers in the low-cash gift group (0.16 SD, $p < .05$). The high-cash gift was not significantly associated with the quality of a mother's observed interactions with her infant or her reports of using spanking as a disciplinary strategy.

Additional Analysis and Robustness checks.

As described earlier, we conducted several robustness checks to determine whether our findings were sensitive to the estimation model specifications. First, we conducted an ITT analysis in which we used our pre-registered family grouping, which differed slightly from the conceptual family grouping of variables derived from Figure 1 (see Appendix Table 5A); Appendix Table 5B provides impact estimates for the pre-registered groupings, and results are similar to those presented in Table 3. The different sorting of measures into families adjusts p -values differently to correct for Type I error. Yet our findings are consistent with respect to the overall findings and are not sensitive to the different p -value adjustments.

To be sure that our results were not affected by these differences in the survey administration, specifically the omission of inclusion of items for a scale across years, we

estimated ITT impacts for the scales using only the common items (survey items included in all three ages). Results were consistent with those reported in Table 3 (Appendix Table 6).

Next, we used analytic weights that correct for imbalance of baseline characteristics across the high-cash and low-cash gift groups (Appendix Table 7). In addition, we applied non-response weights based on all the covariates used in our regression models to adjust the pooled sample to reflect the characteristics of the full study sample at baseline (Appendix Table 8). The pattern of these weighted results did not differ from those found in our covariate-adjusted regression models reported in Table 3. Findings based on datasets in which missing data had been imputed using chained equations were also similar to those reported in Table 3 (Appendix Table 9). Taken together, these findings suggest that our results are not sensitive to the treatment of missing data.

Finally, our study sample is not large enough to detect modest differences in estimated impacts across subgroups. However, statistically significant differences in impacts for families with different characteristics did not emerge in exploratory analyses. We looked specifically at differences between self-identified Black, non-Hispanic mothers and Hispanic mothers of any race because they are the two largest racial and ethnic groups in our sample. We did not find clear differences in the pattern of effects between Black and Hispanic mothers, nor among those with higher and lower incomes at the time of the child's birth. We also compared impacts for mothers who were residing with the father of their child, compared to those who were not, and found that impacts were not significantly different. Finally, we split mothers by their reported income at baseline into a higher-income and lower-income group and compared impacts across these groups. Again, we found few substantive differences in these impacts. (Results of moderation analyses available from authors). Future work will continue to explore possible differences across subgroups.

Discussion

Considerable theory and empirical research have suggested that poverty and economic hardship negatively affects family processes and thus child and adolescent outcomes. Using data from a randomized controlled trial, we examined whether an unconditional monthly cash gift disbursed via debit cards to low-income mothers of newborns for approximately 36 months would generate causal impacts on economic hardship, maternal well-being and psychological distress, as well as mothers' relationships and parenting. We found that, when compared with a \$20 monthly unconditional cash transfer, a monthly unconditional cash transfer of \$333 increased both household income and reduced poverty by modest amounts (see also Gennetian et al., 2024). Contrary to expectations, this increase in income did not result in statistically significant reductions in economic hardship or worry. It also did not improve subjective well-being or psychological distress, nor did it improve mothers' romantic or co-parenting relationship quality. Indeed, there is some suggestion that the cash gift may have reduced the quality of romantic relationships and increased parenting stress. With a few select exceptions, the estimated impacts are largely consistent across all three ages of data collection, and our pooled estimates have sufficient statistical power to detect small effects sizes of approximately .14.

Point estimates of impacts for all 13 outcome measures of maternal well-being and family processes were not only not statistically significant, but also contrary to directions predicted by the Family Stress Model. Figure 2 summarizes the effect size differences between the high-cash and low-cash gift groups and confidence intervals for the family-wise p -value adjustments from our pooled analysis across all three ages. This figure also shows whether impact estimates were (blue markers and lines) or were not (red markers and lines) in the

expected direction. Figure 2 shows that impact estimates attained statistical significance only for the first (economic resources) and last (parenting quality) family of measures. Moreover, point estimates of impacts for all 13 components of the intervening family processes were contrary to directions predicted by the Family Stress Model.

Why might we have found so few improvements in material hardship, maternal wellbeing, and family processes of the magnitude we expected? One possibility is that \$4,000 of cash transfers each year for three years was insufficient to lift the incomes of families far enough above the poverty threshold to make a difference in families' lives. The fact that the cash payments failed to reduce maternal reports of economic pressure and material hardship supports this hypothesis. The lack of statistically significant impacts on financial hardship may be due in part to the high costs of caregiving for young children and infants. Added expenses for diapers, clothes, and car seats, for example, add up and are not completely offset by increases in supports from public benefit programs (e.g., U.S. Department of Agriculture, 2022). We also note that, initially, mothers were told the payments would last for three years, and the payments were not extended until their second year of gift receipt. It is possible that mothers' use of the cash gift might have been affected by the initially shorter time horizon. For example, mothers might have been hesitant to take on new expenses which might last for more than three years, such as a car loan or higher rent apartment. They also may have been hesitant to decrease their income by cutting back on employment. Larger and longer-lasting increases in economic resources might improve key elements of the Family Stress Model.

An alternative explanation centers on the ages of the children. Samples in most other studies of cash transfers showing positive impacts on family processes are comprised of older children and adolescents. Family processes among low-income families with young children may be affected differently by cash transfers than family processes among families with older children and adolescents that are found in other studies. Indeed, the birth of a child creates new expenses, such as diapers and baby food, and parents of infants often experience challenges in meeting caregiver obligations. Whatever the explanation, our study's surprising results indicate the need for further theoretical refinement and empirical testing of how cash transfers affects family processes, especially among families with young children.

It is also possible that mothers in the high-cash gift group experienced increased expectations or pressure to spend the cash in ways that benefited their children, and that this offset any positive benefits of the cash transfer. The Jaroszewicz et al. (2022) study of cash payments during the pandemic found that being given some money (either \$500 or \$2000), but not enough to meet all their needs, may have made the gap between families' resources and needs more salient, and thus increased recipients' feelings of distress. Likewise, a study of microcredit lending in South Africa found that although men experienced positive impacts on mental health, women did not, perhaps because they experience pressure to invest the money in a business which violated gender norms about their roles in the family (Fernald et al., 2008). Unfortunately, we do not have survey data that would directly shed light on these possibilities.

What might account for the decreases we see in maternal reports of romantic relationship quality at age 3? Given that this finding was unexpected, our possible explanations are post-hoc and speculative. This finding is consistent with some theories that suggest that additional income will increase relationship conflict and violence for mothers who have male partners, either because the cash threatens the partner's status or because the male will use threats or violence to extract income from the mother (Barbonis et al., 2013; Baranov et al., 2021). Nevertheless, prior studies of cash transfers have rarely show negative impacts on romantic relationship quality or

dimensions of intimate partner violence, so more work should be done to understand what aspects of the relationship are worse, and under what conditions such impacts might arise. It is noteworthy that this impact does not occur until the age-3 survey, and it will be instructive to see if these impacts persist at later ages.

If having the additional income—which is provided to the mother—introduces conflict into parent and romantic relationships, this might be another explanation for why the cash gift did not more broadly improve family wellbeing. This might be particularly true if the mothers feel less support and more criticism from their partners about their caregiving. It is worth noting, however, that other analyses of the BFY data do not show overall impacts on intimate partner violence (Escueta et al, 2023).

Among our parenting measures, one out of three demonstrated a statistically significant impact in the hypothesized direction. Specifically, maternal self-reported engagement in learning activities, including reading and playing with their children, was higher among mothers in the high-cash gift group than among those in the low-cash gift group, while no statistically significant differences were found in maternal reports of measures of harsh parenting (i.e., frequency of spanking) or the observed quality of parent-child interactions among the subsample who participated in a videorecorded ten-minute play session before the onset of the pandemic. However, it is important to recall that the parent-child observation was only collected for about 60% of the sample at age 1. The three indicators of parenting capture differing dimensions of parenting—it may be that time and engagement in activities with the child is affected more by income than the quality of interactions or discipline practices. Future work should measure multiple aspects of parenting to better tease apart income's possible differential effects.

The high-cash gift was associated with mothers reporting more time spent in learning activities with their child. Learning-related parent-child activities have been associated with positive child cognitive development as early as the first two years of life (Tamis-LeMonda et al., 2004). Indeed, Troller-Renfree et al. (2022) found suggestive evidence that infants in the BFY high-cash gift group showed brain activity in a pattern that prior correlational studies have linked with the development of subsequent higher cognitive skills. It is important to follow up with children at later ages to examine whether multiple years of the cash gifts affect child developmental outcomes.

The findings of this study should be interpreted in light of some limitations. First, this study used self-reported measures of most of the outcomes considered, including relationship quality and parenting stress, and self-reports may be differentially biased between the high-cash and low-cash gift groups. These measures have shown good psychometric properties in studies of low-income populations (Grothe et al., 2005; Whiteside-Mansell et al., 2007). Yet, like many other studies using validated scales, our measures of key constructs did not demonstrate scalar or metric non-invariance across racial and ethnic or language groups. We did find configural, metric, and scalar invariance across our treatment and control groups. Nevertheless, future research should carefully consider how these constructs might differ across relevant groups and determine how best to measure these constructs in more comparable ways.

It is important to also note that null findings do not mean that the effects of the cash gift were zero. Our study had sufficient statistical power to detect impacts across families of domains that were of a small to moderate sizes (see Figure 2 and Table 3). Based on Bloom (1995) for our pooled analysis, the minimum detectable effect size ranges from .14 to .30, with the average of minimum detectable effect size of .23. As a result, it is possible that the payments had much smaller impacts that we could not detect. A challenge in this area of work is determining what

size impact is meaningful, and this can be done by either relying on what is meaningful to individuals or based on cost-benefit analysis. Unfortunately, neither approach has been used to establish thresholds of the smallest effect size of interest for the outcomes in this paper. An important area for future work is to better understand what magnitude of impacts will be of interest and reflect meaningful changes experienced by individuals.

A final important concern might be that the COVID pandemic affected the validity of the study. A strength of the randomized control study is that unexpected events that affect both the treatment and comparison groups, such as the pandemic, do not affect the internal validity of the treatment impacts. That is, because both groups in this study experienced the same pandemic in the same communities, any differences observed between the groups can still be attributed to the cash gift. However, if the pandemic changed life in ways that made the additional cash more (or less) impactful, that might limit the external validity of the findings. For example, if the pandemic resulted in excessive economic hardship or anxiety, it might be that the cash gift would have less impact because of the large amount of income needed to meet basic needs. One way to assess this is to consider whether the low-cash gift group experienced large shifts over time in their reports of the outcomes. Recall that each wave of data collection occurred over the course of a year, roughly July to June. The pandemic began in March of 2020. Data from cell phone mobility and the imposition of stay-at-home orders suggest that all four of our research communities experienced the pandemic shut down at the same time. This results in about 30% of the age-1 cases having been conducted during the pandemic. In contrast, we might consider most of the age-2 to have been completed during the pandemic, in that vaccines were not readily available to all adults until the spring of 2021.

During the age 2 data collection, we asked mothers about their experiences in the pandemic related to economic loss, health, and changes in their behavior. About 60% of mothers reported that they or someone in their household had lost income because of the pandemic. About 40% reported that they or someone in their household received unemployment insurance payments, and 74% reported that they received government stimulus payments. About 18% of mothers reported that they or someone in their household had been sick with COVID, and nearly 22% reported that a close friend or family member had died from a COVID infection. Finally, 75% of mothers reported that they had made major changes in their life because of the pandemic, and fully 94% of mothers reported that they engaged in social distancing.

Although the pandemic was a stressful experience for many families, its effect on the low-income mothers in this study was likely heterogeneous. The expansions of safety net programs and provision of government stimulus payments may have resulted in some households having more money and resources than before the pandemic. It is noteworthy that the outcomes of low-cash gift group mothers are similar at each wave of data collection, and if anything, indicate minor improvements in economic stress over time. Moreover, an analysis by Premo and colleagues (2023) of the BFY low-cash gift group data found that, if anything, mental health improved among mothers after the onset of the pandemic. This might suggest that pressures and routines for these mothers of young children were eased by stay-at-home orders. Thus, it is also noteworthy that mothers' mental health does not appear to worsen when children were two years of age, which corresponds to the peak of the pandemic (July 2020 to July 2021). Indeed, levels of anxiety and depression are overall low in this study and are at their lowest levels when their children were two years old. Although this does not dismiss the concern that the families in our study and their experience of the cash gifts may have been affected by the COVID-19 pandemic,

it does belie the simplistic explanation that families were so negatively affected by the pandemic that the cash gift did not matter.

In conclusion, our study findings suggest that providing \$333 per month in unconditional cash support for about 36 months (of a planned 76 months) does not substantially improve subjective reports of economic pressure, reduce parent psychological distress, or improve relationship quality. Indeed, if anything, it may have worsened the quality of romantic relationships and increased parenting stress. On the positive side, we found that such support resulted in improvements in the frequency of mothers' reports of engaging in stimulating activities with their young children. A full accounting of the benefits of the cash gifts will consider a broader set of economic, family, and child development outcomes (see Gennetian et al., 2022; Gennetian et al., 2024; Hart et al., 2024; Sperber et al., 2023; Troller-Renfree et al., 2022). As both the cash gifts and data collection are ongoing, future analyses will assess the extent to which monthly unconditional cash transfers affect family stress and well-being, as well as early childhood development, beyond the first three years of a child's life.

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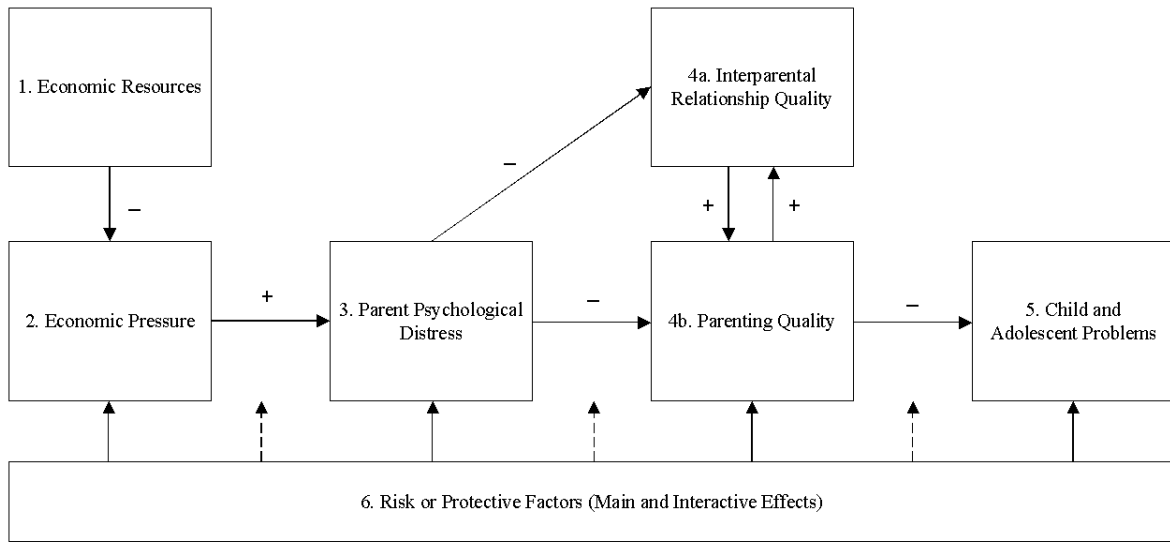
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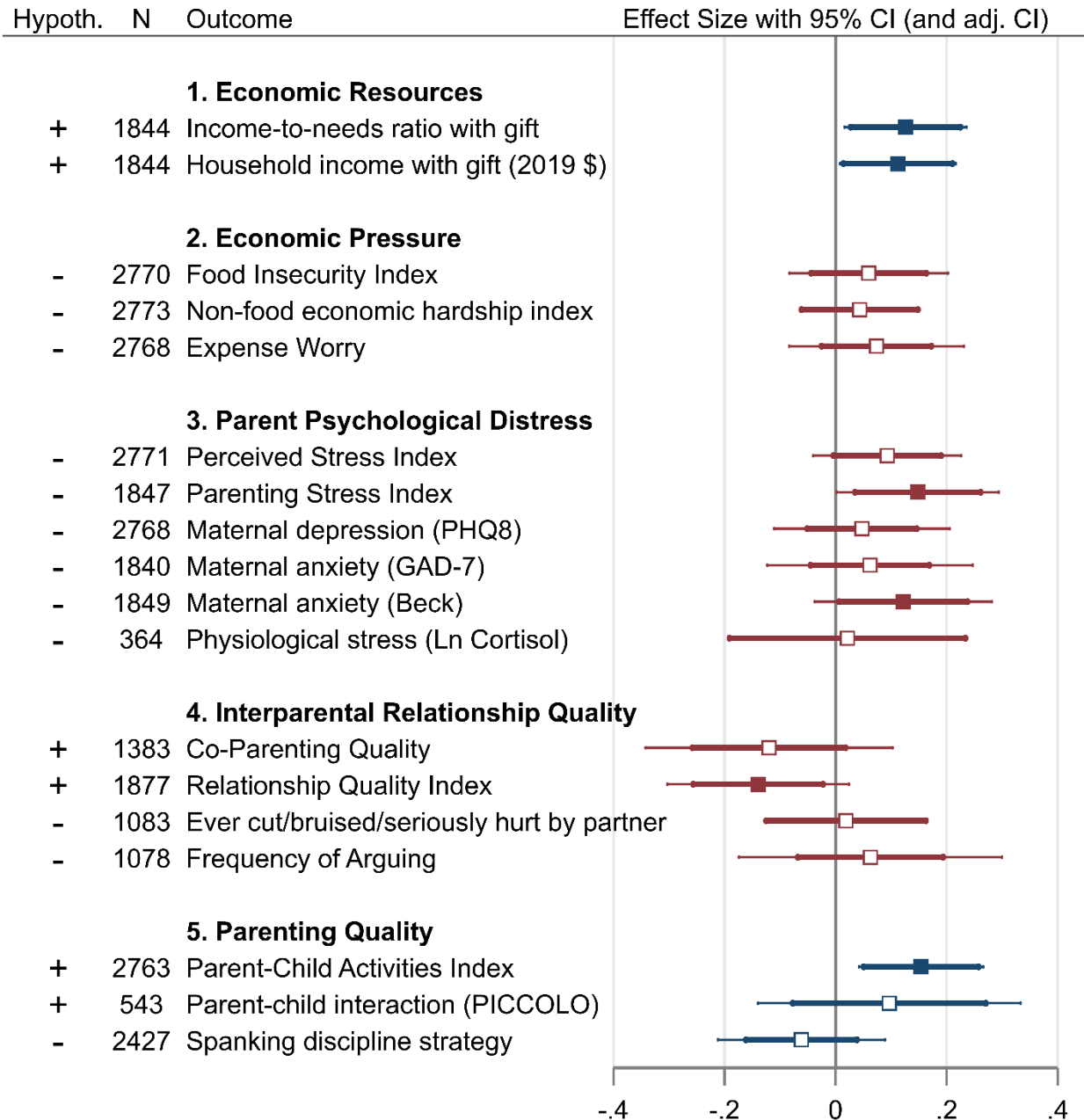
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Figure 1. Adaptation of the Family Stress Model



Notes: Authors' adaptation of the family stress model (Masarik and Conger, 2017). The adapted model projects that an increase in (1) economic resources decreases (2) economic pressure in the household. A decrease in economic pressure decreases (3) parent-psychological distress, which subsequently increases both (4a) interparental relationship quality and (4b) parenting quality that are interlinked. Improvements in parenting quality decreases (5) child and adolescent problems. The surrounding environment's (6) risk and protective factors directly affect each component of the above model (1–5) and also moderate the relationships between the components (1–5).

Figure 2. Standardized Effect Size ITT Estimates of the Impact of the BFY High-Cash Gift with Adjusted and Unadjusted Confidence Intervals



Notes: All presented estimates come from the analysis pooling across ages, clustering the standard errors at the individual level and controlling for baseline covariates, child age at interview, and phone interview status. Standardized treatment effect and its unadjusted and adjusted 95% confidence interval (CI) estimates are represented by the square marker and horizontal lines. Effect sizes are standardized by the standard deviation of the low-cash gift group and adjusted for multiple hypothesis testing with Westfall and Young's (1993) step-down resampling methods. Based on the adjusted p -value, degrees of freedom, and estimated effect size, the corresponding t -statistic and the standard error estimates were calculated to approximate the adjusted standard error and CI. Filled square marker indicates that the estimate is statistically significant results at the .05 level using the unadjusted p -value. Hypothesized direction of cash-gift treatment effects (preregistered) are presented in the "Hypoth." column with "+" indicating a directional increase in outcome and "-" indicating decrease in outcome. Standardized estimates for the dichotomous outcome, Spanking Disciplinary Strategy, comes from a linear probability model (LPM). Raw LPM coefficients are presented in Table 3. Applying a logistic regression model and converting the resulting log of odds ratio into Cohen's d by a factor of the square root of 3 divided by pi estimates the effect sizes to be -.14 for Spanking Disciplinary Strategy (unadjusted p -value = .15).

Table 1. BFY Baseline Characteristics, by Cash Gift Group

	<u>Low-Cash Gift</u>	<u>High-Cash Gift</u>	<u>Std Mean Difference</u>		
	Mean (SD)	Mean (SD)	Hedges' g	Cox's Index	p-value
<u>CHILD</u>					
Female	.50	.48		-.05	.46
Weight at birth (lb)	7.13 (1.08)	7.09 (1.01)	-.04		.57
Gestational age (weeks)	39.09 (1.25)	39.04 (1.24)	-.04		.51
<u>MOTHER</u>					
Age at birth (years)	26.80 (5.82)	27.38 (5.86)	.10		.11
Education (years)	11.88 (2.83)	11.88 (2.96)	.00		.98
Race/Ethnicity					
White, non-Hispanic	.11	.09		-.13	.13
Black, non-Hispanic	.40	.44		.10	.09
multiple, non-Hispanic	.04	.03		-.18	.37
other or unknown	.05	.03		-.32	.07
Hispanic	.41	.41		.00	.59
Marital Status					
never married	.42	.49		.17	.02
single, living with partner	.26	.22		-.13	.12
married	.21	.21		.00	.79
divorced/separated	.05	.03		-.32	.06
other or unknown	.06	.04		-.26	.40
Health is good or better	.88	.92		.27	.04
Depression (CES-D)	.68 (.45)	.69 (.46)	.02		.80
Cigarettes per week during pregnancy	5.05 (21.17)	3.45 (11.76)	-.09		.11
Alcohol drinks per week during pregnancy	.17 (1.63)	.03 (.39)	-.11		.05
Number of children born to mother	2.40 (1.38)	2.53 (1.41)	.09		.15
Number of adults in household	2.12 (1.00)	2.03 (.96)	-.09		.16
Biological father in household	.40	.35		-.13	.15
Household income (\$1000s)	22.47 (21.36)	20.92 (16.15)	-.08		.22
Household income unknown	.06	.07		.10	.48
Household net worth (\$1000s)	-1.98 (28.64)	-3.31 (20.32)	-.05		.42
Household net worth unknown	.12	.10		-.12	.64

Joint Test: $\chi^2(29)=33.98$, p -value=.24, $N=1000$

Notes: The p -values were derived from a series of OLS bivariate regressions in which each respective baseline characteristic was regressed on the treatment status indicator using robust standard errors and site-level fixed effects. The joint test of orthogonality was conducted using a probit model with robust standard errors and site-level fixed effects. Standardized mean differences were calculated using Hedges' g for continuous variables and Cox's Index for dichotomous variables. The number of observations with non-missing baseline measures range between 531–600 and 358–400 for the low- and high-cash gift group, respectively. If there were more than 10 missing cases for a covariate, missing data dummies were included in the table and the joint test. If there were less than 10 cases missing, missing data dummies were not included in the table but were included in the joint test. Chi-square tests of independence were conducted for the two categorical variables: mother race/ethnicity and mother marital status. For both tests, $p > .05$. All respondents with missing data on gestational age are in the control group, so this dummy is excluded from the joint test due to perfect collinearity. This results in a slightly smaller sample for the joint test. Joint test of orthogonality between treatment and baseline characteristics in the age 1, age 2, and age 3 follow-up samples yielded p -values of .39, .32, and .20, respectively.

Poverty Reduction and Family Processes

Table 2. Summary of Outcomes across Ages by Cash Gift Group

Family	Outcome	Hypoth. Direction	Cash Gift Group	Age 1		Age 2		Age 3		Pooled Sample (Ages 1-3)	
				N	Mean (SD)	N	Mean (SD)	N	Mean (SD)	N	Mean (SD)
Panel 1: Economic Resources											
1	Income-to-needs ratio with gift	+	Low			545	.92 (.84)	542	1.04 (.87)	1087	.98 (.86)
			High			377	.99 (.76)	380	1.12 (.86)	757	1.05 (.81)
1	Household income with gift (\$1000s, in 2019 dollars)	+	Low			545	26.42 (24.95)	542	29.78 (25.73)	1087	28.10 (25.38)
			High			377	28.85 (22.87)	380	31.83 (25.26)	757	30.35 (24.13)
Panel 2: Economic Pressure											
2	Food Insecurity Index	-	Low	546	1.21 (1.67)	544	1.16 (1.76)	542	1.03 (1.77)	1632	1.13 (1.73)
			High	383	1.49 (1.77)	377	1.20 (1.75)	378	1.03 (1.67)	1138	1.24 (1.74)
	Food Insecurity index (5-item)*	-	Low	546	1.21 (1.67)	543	1.05 (1.55)	541	.93 (1.54)	1630	1.07 (1.59)
			High	383	1.49 (1.77)	376	1.10 (1.54)	378	.96 (1.50)	1137	1.18 (1.62)
2	Non-food Economic Hardship Index	-	Low	547	1.07 (1.14)	544	.96 (1.12)	542	.67 (.91)	1633	.90 (1.08)
			High	383	1.14 (1.21)	377	1.05 (1.21)	380	.69 (.88)	1140	.96 (1.13)
	Non-food Economic Hardship Index (4-item)*	-	Low	546	.67 (.86)	543	.64 (.83)	542	.67 (.91)	1631	.66 (.87)
			High	383	.73 (.90)	377	.70 (.91)	380	.69 (.88)	1140	.71 (.89)
2	Expense Worry	-	Low	547	2.90 (1.65)	544	2.61 (1.61)	541	2.65 (1.63)	1632	2.72 (1.63)
			High	383	3.10 (1.59)	375	2.70 (1.66)	378	2.76 (1.56)	1136	2.85 (1.61)
Panel 3: Parent Psychological Distress											
3	Perceived Stress Index	-	Low	547	10.82 (6.35)	543	10.32 (6.19)	542	12.54 (7.41)	1632	11.22 (6.73)
			High	383	11.39 (6.04)	377	10.73 (5.98)	379	13.32 (6.69)	1139	11.81 (6.34)
	Perceived Stress Index (9-item)*	-	Low	547	10.82 (6.35)	543	10.32 (6.19)	542	10.91 (6.84)	1632	10.68 (6.46)
			High	383	11.39 (6.04)	377	10.73 (5.98)	379	11.59 (6.07)	1139	11.24 (6.04)
3	Parenting Stress Index	-	Low	547	15.05 (3.52)	543	14.71 (3.55)			1090	14.88 (3.54)
			High	382	15.68 (3.42)	375	15.18 (3.63)			757	15.43 (3.53)
3	Maternal Depression (PHQ-8)	-	Low	547	3.72 (4.09)	543	2.94 (3.91)	541	3.42 (4.63)	1631	3.36 (4.23)
			High	383	3.91 (4.41)	376	3.21 (4.26)	378	3.23 (3.96)	1137	3.45 (4.22)
3	Maternal Anxiety (GAD-7)	-	Low			543	2.49 (3.81)	542	3.07 (4.36)	1085	2.78 (4.10)
			High			376	2.78 (4.14)	379	3.06 (4.00)	755	2.92 (4.07)
3	Maternal Anxiety (Beck)	-	Low	547	4.58 (6.57)			542	5.26 (8.17)	1089	4.92 (7.42)
			High	383	5.94 (8.34)			377	5.03 (7.42)	760	5.49 (7.91)
3	Physiological Stress (Ln Hair Cortisol)	-	Low	210	1.73 (1.37)					210	1.73 (1.37)
			High	154	1.89 (1.41)					154	1.89 (1.41)
Panel 4: Interparental Relationship Quality											
4	Co-Parenting Relationship Quality	+	Low	429	19.36 (2.90)	399	19.40 (2.77)			828	19.38 (2.83)
			High	291	18.95 (3.36)	264	19.09 (3.13)			555	19.02 (3.25)
4	Romantic Relationship Quality Index	+	Low	325	26.98 (3.55)	305	31.14 (2.68)	466	30.21 (3.67)	1096	29.51 (3.78)
			High	247	26.58 (3.76)	207	30.84 (2.95)	327	29.60 (4.00)	781	28.97 (4.04)
	Romantic Relationship Quality Index (10-item)*	+	Low	325	26.98 (3.55)	305	28.16 (2.64)	466	27.26 (3.58)	1096	27.43 (3.37)
			High	247	26.58 (3.76)	207	27.88 (2.86)	327	26.64 (3.92)	781	26.95 (3.65)
4		-	Low	325	.08 (.28)	304	.01 (.11)			629	.05 (.22)

Poverty Reduction and Family Processes

	Ever cut/bruised/seriously hurt by partner		High	247	.07 (.25)	207	.02 (.15)		454	.05 (.21)	
4	Frequency of Arguing	-	Low	324	2.56 (1.02)	305	2.36 (.83)		629	2.47 (.94)	
			High	242	2.48 (.96)	207	2.48 (.83)		449	2.48 (.90)	
Panel 5: Parenting Quality											
5	Parent-Child Activities Index	+	Low	547	10.29 (2.68)	543	14.06 (2.98)	537	12.68 (2.50)	1627	12.33 (3.14)
			High	382	10.78 (2.58)	376	14.45 (2.83)	378	13.07 (2.41)	1136	12.76 (3.02)
	Parent-Child Activities Index (3-item)*	+	Low	547	8.82 (2.37)	543	9.57 (2.13)	537	9.44 (1.97)	1627	9.27 (2.18)
			High	382	9.27 (2.20)	375	9.88 (1.85)	377	9.78 (1.89)	1134	9.64 (2.00)
5	Parent-Child Interaction (PICCOLO)	+	Low	307	41.39 (5.48)					307	41.39 (5.48)
			High	236	41.63 (5.39)					236	41.63 (5.39)
5	Spanking discipline strategy Indicator	+	Low	339	.06 (.24)	542	.19 (.39)	540	.20 (.40)	1421	.16 (.37)
			High	257	.07 (.25)	372	.14 (.34)	377	.17 (.38)	1006	.13 (.34)

Note: * For five measures, the number of items that make up the index or scale are not identical across ages. See **Appendix Table 3** for details. We present a summary using all of the available items within each age (which match our impact analysis) and a summary using the subset items that appear in all ages (which make the measures more comparable across ages). We note the number of consistent items in parentheses. Outcomes are grouped into families following the conceptual model in Figure 1. Preregistered hypothesized directions of the intervention effects are presented with “+” or “-” for a directional increase or decrease in the outcome, respectively. Household incomes across all years are inflation-adjusted to 2019 dollars, and the poverty line is based on the 2019 U.S. Census poverty threshold. Income-to-needs is the household income divided by the poverty line for a given family size and composition. Income and income-to-needs have been truncated at the 99th percentile. PHQ-8=Personal Health Questionnaire Depression scale. PICCOLO=Parenting Interaction with Children: Checklist of Observations Linked to Outcomes.

Table 3. Summary of ITT Estimates of the Impacts of the BFY High-Cash Gift on Family Wellbeing and Family Processes

Family	Outcome	Hypoth. direction		Age 1 (6/2019–7/2020)	Age 2 (7/2020–7/2021)	Age 3 (7/2021–7/2022)	Pooled Sample
Panel 1: Economic Resources							
1	Income-to-needs ratio (including the BFY gift)	+	Effect (Con. Interval)		.10 (.00 – .20)	.11 (.00 – .22)	.11 (.02 – .19)
			Std. Effect		.12	.13	.13
			N Deg. Freedom		922 876	922 876	1844 956
			p-value WY p-value		.04 .06	.04 .06	.01 .02
1	Household Income with gift (\$1000s, in 2019 dollars)	+	Effect (Con. Interval)		2.79 (-.09 – 5.68)	2.76 (-.32 – 5.83)	2.86 (.37 – 5.35)
			Std. Effect		.11	.11	.11
			N Deg. Freedom		922 876	922 876	1844 956
			p-value WY p-value		.06 .06	.08 .08	.03 .03
Panel 2: Economic Pressure							
2	Food Insecurity Index	-	Effect (Con. Interval)	.23 (-.00 – .46)	-.00 (-.24 – .23)	.05 (-.17 – .27)	.10 (-.08 – .28)
			Std. Effect	.14	-.00	.03	.06
			N Deg. Freedom	929 882	921 875	920 874	2770 972
			p-value WY p-value	.05 .14	.98 .98	.68 .88	.27 .44
2	Non-food Economic Hardship Index	-	Effect (Con. Interval)	.04 (-.12 – .20)	.07 (-.09 – .23)	.02 (-.09 – .14)	.05 (-.06 – .16)
			Std. Effect	.04	.06	.03	.04
			N Deg. Freedom	930 883	921 875	922 876	2773 972
			p-value WY p-value	.62 .62	.38 .72	.68 .88	.41 .44
2	Expense Worry	-	Effect (Con. Interval)	.17 (-.04 – .38)	.08 (-.14 – .29)	.11 (-.10 – .31)	.12 (-.04 – .28)
			Std. Effect	.10	.05	.06	.07
			N Deg. Freedom	930 883	919 873	919 873	2768 972
			p-value WY p-value	.12 .23	.48 .72	.31 .63	.14 .34
Panel 3: Maternal Psychological Distress							
3	Perceived Stress Index	-	Effect (Con. Interval)	.62 (-.18 – 1.41)	.45 (-.34 – 1.24)	.75 (-.14 – 1.65)	.63 (-.02 – 1.27)
			Std. Effect	.10	.07	.10	.09
			N Deg. Freedom	930 883	920 874	921 875	2771 973
			p-value WY p-value	.13 .31	.26 .43	.10 .27	.06 .21
3	Parenting Stress Index	-	Effect (Con. Interval)	.53 (.06 – .99)	.52 (.06 – .98)		.52 (.12 – .92)
			Std. Effect	.15	.15		.15
			N Deg. Freedom	929 882	918 872		1847 964
			p-value WY p-value	.03 .09	.03 .08		.01 .06
3	Maternal Depression (PHQ-8)	-	Effect (Con. Interval)	.26 (-.29 – .80)	.33 (-.20 – .86)	-.03 (-.56 – .50)	.19 (-.22 – .60)
			Std. Effect	.06	.08	-.01	.05
			N Deg. Freedom	930 883	919 873	919 873	2768 973
			p-value WY p-value	.35 .58	.22 .43	.91 .99	.37 .60

Poverty Reduction and Family Processes

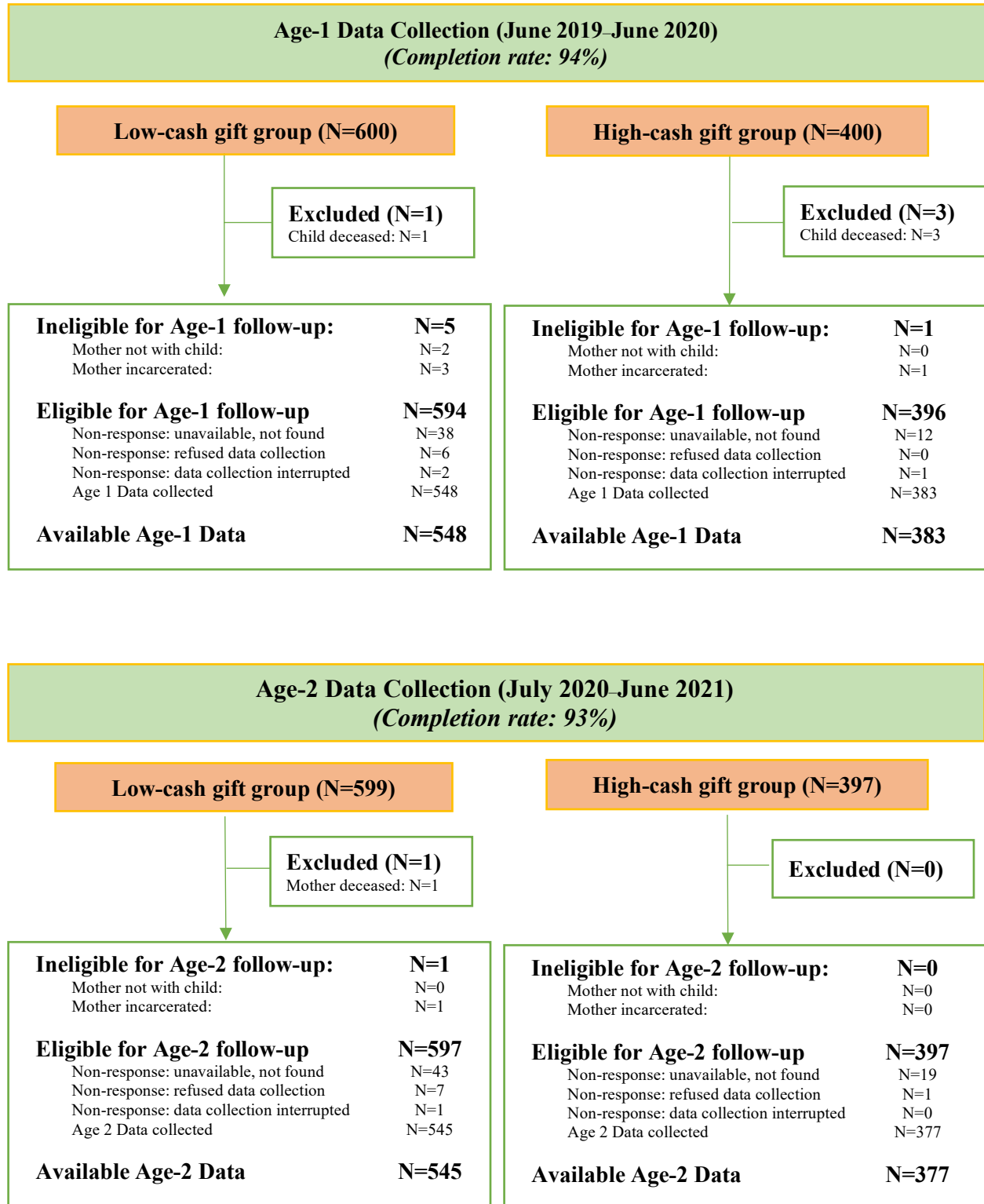
3	Maternal Anxiety (GAD-7)	-	Effect (Con. Interval) Std. Effect N Deg. Freedom <i>p</i> -value WY <i>p</i> -value	.30 (-.22 – .82) .08 919 873 .26 .43	.17 (-.34 – .69) .04 921 875 .51 .81	.25 (-.19 – .68) .06 1840 956 .27 .55	
3	Maternal Anxiety (Beck)	-	Effect (Con. Interval) Std. Effect N Deg. Freedom <i>p</i> -value WY <i>p</i> -value	1.66 (.66 – 2.66) .25 930 883 .00 .01	-.04 (-1.02 – .93) -.01 919 873 .93 .99	.80 (-.05 – 1.64) .12 1849 967 .06 .21	
3	Physiological Stress (Ln Hair Cortisol)	-	Effect (Con. Interval) Std. Effect N Deg. Freedom <i>p</i> -value WY <i>p</i> -value	.03 (-.26 – .32) .02 364 317 .84 .84		.03 (-.26 – .32) .02 364 363 .84 .84	
Panel 4: Interparental Relationship Quality							
4	Co-Parenting Relationship Quality	+	Effect (Con. Interval) Std. Effect N Deg. Freedom <i>p</i> -value WY <i>p</i> -value	-.38 (-.85 – .09) -.13 720 673 .12 .36	-.34 (-.80 – .12) -.12 663 617 .15 .48	-.34 (-.73 – .05) -.12 1383 802 .09 .25	
4	Romantic Relationship Quality Index	+	Effect (Con. Interval) Std. Effect N Deg. Freedom <i>p</i> -value WY <i>p</i> -value	-.30 (-.91 – .32) -.08 572 525 .34 .70	-.32 (-.81 – .18) -.12 512 467 .21 .48	-.62 (-1.18 – -.06) -.17 793 747 .03 .03	
4	Ever cut/bruised/seriously hurt by partner	-	Effect (Con. Interval) Std. Effect N Deg. Freedom <i>p</i> -value WY <i>p</i> -value	-.02 (-.07 – .02) -.08 572 525 .35 .70	.01 (-.01 – .04) .12 511 466 .33 .48	-.00 (-.03 – .02) .02 1083 770 .74 .75	
4	Frequency of Arguing	-	Effect (Con. Interval) Std. Effect N Deg. Freedom <i>p</i> -value WY <i>p</i> -value	-.04 (-.21 – .14) -.04 566 519 .67 .70	.11 (-.04 – .27) .13 512 467 .15 .48	.05 (-.07 – .17) .06 1078 766 .43 .68	
Panel 5: Parenting Quality							
5	Parent-Child Activities Index	+	Effect (Con. Interval) Std. Effect N Deg. Freedom <i>p</i> -value WY <i>p</i> -value	.44 (.09 – .79) .16 929 882 .01 .04	.43 (.05 – .81) .14 919 873 .03 .05	.38 (.05 – .72) .15 915 869 .02 .05	
5	Parent-Child Interaction (PICCOLO)	+	Effect (Con. Interval) Std. Effect N Deg. Freedom <i>p</i> -value WY <i>p</i> -value	.53 (-.42 – 1.48) .10 543 496 .28 .48		.53 (-.42 – 1.48) .10 543 542 .28 .28	

Poverty Reduction and Family Processes

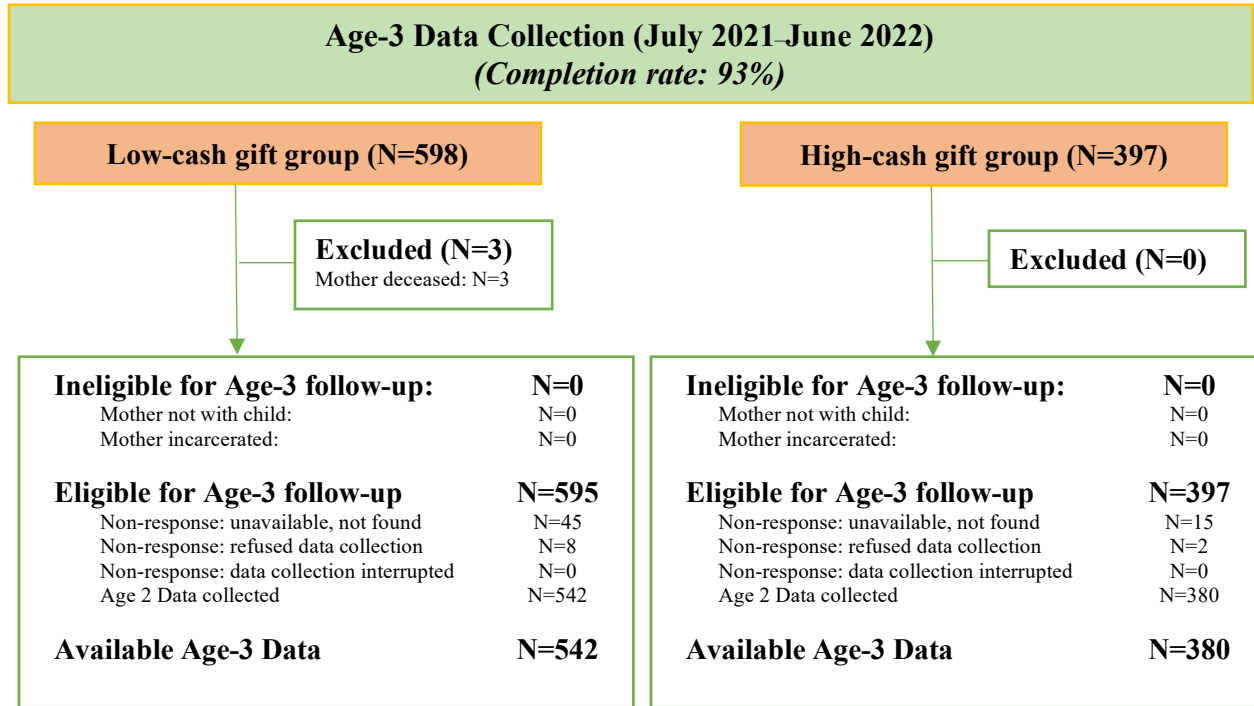
			Effect (Con. Interval)	.02 (-.02 – .06)	-.05 (-.10 – -.01)	-.03 (-.08 – .02)	-.03 (-.06 – .01)
			Std. Effect	.08	-.14	-.07	-.06
5	Spanking discipline strategy	+	N Deg. Freedom	596 549	914 868	917 871	2427 959
			<i>p</i> -value WY <i>p</i> -value	.40 .48	.02 .05	.27 .27	.14 .27

Note: Age 1 data was collected in July of 2019 to June of 2020; Age 2 data was collected July of 2020 to July of 2021; Age 3 data was collected July of 2021 to July of 2022. Each block of rows presents for each outcome, the raw treatment effect with confidence intervals in parentheses; the standardized treatment effect size; number of observations and degrees of freedom; and the *p*-value and Westfall and Young’s adjusted *p*-values. The ITT estimates come from regressions with site fixed-effects, controlling for baseline covariates, child age at interview, and phone interview status. Outcomes were standardized using the standard deviation of the low-cash gift within each age. We report the degrees of freedom which is computed as the sample size minus the number of parameters estimated in the model. This statistic is complicated in the pooled sample because we cluster the standard error to adjust for non-independence. For simplicity, we report the default degrees of freedom reported in most software which is the number of clusters minus one. The *p*-value comes from analyses that do not correct for multiple outcomes, while WY *p*-value is based on Westfall and Young’s (1993) step-down resampling methods of addressing multiple hypothesis testing, where outcomes are grouped in families (following Figure 1) and their *p*-values adjusted within each family. The Pooled column present estimates from analyses that pool observations across ages, adjust for age indicators, and cluster the standard error at the individual level. Preregistered, hypothesized directions of the intervention effects are presented with “+” or “-” for directional increase or decrease in the outcome, respectively. Household incomes across all years are inflation-adjusted to 2019 dollars, and the poverty line is based on the 2019 U.S. Census poverty threshold. Income-to-needs is the household income divided by the poverty line for a given family size and composition. Income and income-to-needs have been truncated at the 99th percentile. PHQ-8=Personal Health Questionnaire Depression scale. GAD-7=General Anxiety Disorder-7. PICCOLO=Parenting Interaction with Children: Checklist of Observations Linked to Outcomes.

Appendix Figure 1. CONSORT Diagram for Age 1, 2, and 3 Data Collection



Poverty Reduction and Family Processes



Note: Following *Consolidated Standards of Reporting Trials* (CONSORT), the figure reports the number of observations are tracked across ages.

Poverty Reduction and Family Processes

Appendix Table 1A. Baseline Characteristics of Age-1 Sample (N = 931)

	<u>Low-Cash Gift</u>	<u>High-Cash Gift</u>	<u>Std Mean Difference</u>		
	Mean (SD)	Mean (SD)	Hedges' g	Cox's Index	p-value
<u>CHILD</u>					
Female	.51	.48		-.07	.40
Weight at birth (lb)	7.14 (1.08)	7.11 (1.02)	-.02		.73
Gestational age (weeks)	39.09 (1.23)	39.03 (1.25)	-.05		.49
<u>MOTHER</u>					
Age at birth (years)	26.94 (5.84)	27.41 (5.75)	.08		.19
Education (years)	11.86 (2.83)	11.91 (2.98)	.02		.78
Race/Ethnicity					
White, non-Hispanic	.11	.08		-.21	.16
Black, non-Hispanic	.39	.44		.12	.07
multiple, non-Hispanic	.04	.03		-.18	.37
other or unknown	.04	.02		-.43	.07
Hispanic	.42	.42		.00	.77
Marital Status					
never married	.42	.50		.20	.02
single, living with partner	.27	.21		-.20	.05
Married	.22	.21		-.04	1.00
divorced/separated	.05	.03		-.32	.18
other or unknown	.05	.05		.00	.76
Health is good or better	.88	.92		.27	.02
Depression (CES-D)	.68 (.44)	.67 (.45)	-.01		.85
Cigarettes per week during pregnancy	4.68 (20.32)	3.11 (11.10)	-.09		.12
Alcohol drinks per week during pregnancy	.15 (1.66)	.03 (.39)	-.10		.09
Number of children born to mother	2.42 (1.37)	2.53 (1.42)	.08		.24
Number of adults in household	2.08 (.98)	2.02 (.97)	-.06		.35
Biological father in household	.41	.35		-.15	.06
Household income (\$1000's)	22.31 (21.28)	20.98 (16.01)	-.07		.30
Household income unknown	.06	.07		.10	.62
Household net worth (\$1000's)	-2.19 (29.37)	-3.27 (20.72)	-.04		.54
Household net worth unknown	.11	.11		.00	1.00

Joint Test: $\chi^2(28)=29.54, p\text{-value}=.39, N=927$

Notes: The *p*-values were derived from a series of OLS bivariate regressions in which each baseline characteristic was regressed on the treatment status indicator using robust standard errors and site-level fixed effects. Joint test of orthogonality was conducted using a probit model with robust standard errors and site-level fixed effects. Standardized mean differences were calculated using Hedges' *g* for continuous variables and Cox's Index for dichotomous variables. Number of observations with non-missing baseline measures range between 489 to 548 and 342 to 383 for the low- and high-cash gift group, respectively. If there were more than 10 missing cases for a covariate, missing data dummies were included in the table and the joint test. If there were less than 10 cases missing, missing data dummies were not included in the table but were included in the joint test. Chi-square tests of independence were conducted for the two categorical variables: mother race/ethnicity and mother marital status. For both tests, $p > .05$. All respondents with missing data on gestational age are in the control group, so this dummy is excluded from the joint test due to perfect collinearity.

Poverty Reduction and Family Processes

Appendix Table 1B. Baseline Characteristics of Age-2 Sample (N = 922)

	<u>Low-Cash Gift</u>	<u>High-Cash Gift</u>	<u>Std Mean Difference</u>		
	Mean (SD)	Mean (SD)	Hedges' g	Cox's Index	p-value
<u>CHILD</u>					
Female	.50	.48		-.05	.43
Weight at birth (lb)	7.14 (1.07)	7.10 (1.03)	-.03		.63
Gestational age (weeks)	39.10 (1.25)	39.04 (1.19)	-.05		.44
<u>MOTHER</u>					
Age at birth (years)	26.90 (5.82)	27.45 (5.77)	.09		.15
Education (years)	11.96 (2.81)	11.92 (2.99)	-.02		.84
Race/Ethnicity					
White, non-Hispanic	.10	.08		-.15	.24
Black, non-Hispanic	.40	.44		.10	.16
multiple, non-Hispanic	.04	.03		-.18	.34
other or unknown	.05	.02		-.57	.04
Hispanic	.41	.42		.02	.50
Marital Status					
never married	.42	.50		.20	.02
single, living with partner	.26	.21		-.17	.08
Married	.22	.22		.00	.96
divorced/separated	.05	.03		-.32	.18
other or unknown	.05	.05		.00	.68
Health is good or better	.89	.93		.30	.04
Depression (CES-D)	.66 (.44)	.67 (.44)	.02		.75
Cigarettes per week during pregnancy	4.71 (20.33)	3.28 (11.42)	-.08		.15
Alcohol drinks per week during pregnancy	.15 (1.67)	.03 (.39)	-.10		.09
Number of children born to mother	2.40 (1.38)	2.53 (1.41)	.09		.19
Number of adults in household	2.09 (.98)	2.03 (.98)	-.06		.35
Biological father in household	.40	.34		-.16	.09
Household income (\$1000's)	22.04 (18.77)	20.91 (16.00)	-.06		.35
Household income unknown	.06	.07		.10	.44
Household net worth (\$1000's)	-1.81 (29.80)	-3.21 (20.84)	-.05		.43
Household net worth unknown	.11	.11		.00	.83

Joint Test: $\chi^2(28)=30.88, p\text{-value}=.32, N=918$

Notes: The *p*-values were derived from a series of OLS bivariate regressions in which each baseline characteristic was regressed on the treatment status indicator using robust standard errors and site-level fixed effects. Joint test of orthogonality was conducted using a probit model with robust standard errors and site-level fixed effects. Standardized mean differences were calculated using Hedges' *g* for continuous variables and Cox's Index for dichotomous variables. Number of observations with non-missing baseline measures range between 483 to 545 and 336 to 377 for the low- and high-cash gift group, respectively. If there were more than 10 missing cases for a covariate, missing data dummies were included in the table and the joint test. If there were less than 10 cases missing, missing data dummies were not included in the table but were included in the joint test. Chi-square tests of independence were conducted for the two categorical variables: mother race/ethnicity and mother marital status. For both tests, $p > .05$. All respondents with missing data on gestational age are in the control group, so this dummy is excluded from the joint test due to perfect collinearity.

Poverty Reduction and Family Processes

Appendix Table 1C. Baseline Characteristics of Age-3 Sample (N = 922)

	<u>Low-Cash Gift</u>	<u>High-Cash Gift</u>	<u>Std Mean Difference</u>		
	Mean (SD)	Mean (SD)	Hedges' g	Cox's Index	p-value
<u>CHILD</u>					
Female	.50	.48		-.05	.49
Weight at birth (lb)	7.15 (1.06)	7.10 (1.01)	-.05		.48
Gestational age (weeks)	39.08 (1.27)	39.04 (1.24)	-.03		.67
<u>MOTHER</u>					
Age at birth (years)	26.89 (5.87)	27.36 (5.77)	.08		.20
Education (years)	11.98 (2.78)	11.87 (2.96)	-.04		.60
Race/Ethnicity					
White, non-Hispanic	.11	.08		-.21	.10
Black, non-Hispanic	.39	.44		.12	.08
multiple, non-Hispanic	.04	.03		-.18	.20
other or unknown	.05	.02		-.57	.03
Hispanic	.41	.43		.05	.41
Marital Status					
never married	.42	.50		.20	.02
single, living with partner	.26	.21		-.17	.07
Married	.21	.22		.04	.82
divorced/separated	.05	.03		-.32	.18
other or unknown	.06	.05		-.12	.42
Health is good or better	.88	.92		.27	.03
Depression (CES-D)	.68 (.46)	.68 (.45)	.00		.92
Cigarettes per week during pregnancy	5.03 (21.25)	3.26 (11.39)	-.10		.09
Alcohol drinks per week during pregnancy	.17 (1.70)	.03 (.39)	-.11		.05
Number of children born to mother	2.40 (1.39)	2.53 (1.41)	.09		.18
Number of adults in household	2.11 (.99)	2.03 (.98)	-.08		.23
Biological father in household	.40	.35		-.13	.09
Household income (\$1000s)	22.48 (21.90)	20.78 (15.89)	-.09		.19
Household income unknown	.06	.07		.10	.40
Household net worth (\$1000s)	-1.79 (29.91)	-2.24 (12.79)	-.02		.77
Household net worth unknown	.11	.11		.00	.78

Joint Test: $\chi^2(28)=34.17$, p -value=.20, N=918

Notes: The p -values were derived from a series of OLS bivariate regressions in which each baseline characteristic was regressed on the treatment status indicator using robust standard errors and site-level fixed effects. Joint test of orthogonality was conducted using a probit model with robust standard errors and site-level fixed effects. Standardized mean differences were calculated using Hedges' g for continuous variables and Cox's Index for dichotomous variables. Number of observations with non-missing baseline measures range between 480 to 543 and 339 to 383 for the low- and high-cash gift group, respectively. If there were more than 10 missing cases for a covariate, missing data dummies were included in the table and the joint test. If there were less than 10 cases missing, missing data dummies were not included in the table but were included in the joint test. Chi-square tests of independence were conducted for the two categorical variables: mother race/ethnicity and mother marital status. For both tests, $p > .05$. All respondents with missing data on gestational age are in the control group, so this dummy is excluded from the joint test due to perfect collinearity.

Poverty Reduction and Family Processes

Appendix Table 2. Pre-registered Outcomes as Organized by Primary Journal Articles Related to Family Economic Investments (Gennetian et al., 2024), Family Stress Models (this article), or Other Papers.

	Family investment	Family stress	Other	Ages
Maternal and Family Focused Pre-Registered Outcomes				
Household poverty status	S			1, 2, 3
Maternal global happiness	S			1, 2, 3
Maternal agency (HOPE scale)	S			1, 2, 3
Number of benefits (social services) received by mother	S			1, 2, 3
Mother's education and training participation and attainment	S			1, 2, 3
Index of child-focused expenditures (since birth)	S			1, 2, 3
Index of child-focused expenditures (in past 30 days)	S			1, 2, 3
Cost of paid childcare last week	S			1, 2, 3
Use of center-based care in last year	S			1
Use of center-based care in last week	S			2, 3
Parent-child activities index	S	S		1, 2, 3
Index of food insecurity		S		1, 2, 3
Index of economic stress		S		1, 2, 3
Maternal perceived stress (PSS)		S		1, 2, 3
Maternal parenting stress		S		1, 2
Physiological stress (maternal hair cortisol)		S		1
Maternal depression (PHQ-8)		S		1, 2, 3
Maternal anxiety (GAD-7)		S		2, 3
Maternal anxiety (Beck)		S		1, 3
Physical Abuse		S		1, 2
Frequency of Arguing		S		1, 2
Romantic relationship quality		S		1, 2, 3
Spanking discipline strategy		S		1, 2, 3
Mother's positive parenting behaviors (PICCOLO)		S		
Mother's time to labor market reentry from birth			S	1
Mother's time to full-time labor market reentry from birth			S	1
Index of perceptions of neighborhood safety			S	1, 2, 3
Index of housing quality			S	1
Homelessness			S	1, 2, 3
Excessive Residential mobility			S	1, 2, 3
Neighborhood poverty			S	1, 2, 3
Alcohol and cigarette use			S	1, 3
Opioid use			S	1, 3
Index of chaos in the home			S	1, 2

Poverty Reduction and Family Processes

Maternal global health	S	1, 2
Maternal sleep	S	1, 3
Adult word count (LENA)	S	1
Conversational turns (LENA)	S	1
Child-Focused Pre-Registered Outcomes		
Maternal concern for language delay	P	1
Socio-emotional problems (BITSEA)	S	1, 2
Behavior/emotional problems	P	3
Maternal concern for behavioral and social-emotional problems	P	3
Age-1 resting brain function	S	1
Sleep problems ¹	P, S	1, 2, 3
Index of overall health ¹	P, S	1, 2, 3
Consumption of healthy foods	S	2
Consumption of unhealthy foods	S	2
Parents' Evaluation of Developmental Status (PEDS)	S	3
Total "predictive concerns" in the PEDS	S	3

Note: ¹ Registered as secondary outcome in ages 1 and 2, and as primary outcome in age 3. Primary outcomes denoted with "P"; secondary outcomes denoted with "S".

Poverty Reduction and Family Processes

Appendix Table 3. Summary of Family Wellbeing and Family Process Measures

Outcome Measures	Number of Items			Item lists	Cronbach's α			Source / Note
	Age1	Age2	Age3		Age1	Age2	Age3	
Panel 1: Economic Resources								
Income-to-needs ratio with gift	-	NA	NA	How much did you earn from all your employers before taxes and deductions during [previous Year]?	-	NA	NA	Total household income divided by federal poverty level based on family sizes at each age
Household Income with gift	-	NA	NA	How much did you earn from all your employers before taxes and deductions during [previous Year]?	-	NA	NA	Total household income
Panel 2: Economic Pressure								
Food insecurity index* (range: 0 – 6)	5	6	6	In the last 12 months,	.86	.85	.87	Additive index of Food Insecurity (USDA, 2012)
				1) couldn't afford to eat balanced meals (<i>often/sometimes, never true</i>)				
				2) the food that we bought didn't last, and we didn't have money to get more.				
				3) eat less than you felt you should because there wasn't enough money for food.				
				4) ever hungry, but didn't eat, because there wasn't enough money for food. ²³				
				5) cut the size of your meals or skip meals because there wasn't enough money for food.				
6) cut the size of your meals or skip meals more than 3 months. (<i>yes, no</i>)								
Non-food economic hardship index* (range: 0 – 5)	5	5	4	In the last 12 months, (<i>yes, no</i>)	.54	.57	.46	Additive index of select items in the economic stress index (Kling, Liebman, and Katz, 2007)
				1) missed a rent or mortgage payment				
				2) miss a payment for oil, gas, water, or electricity?				
				3) forced to leave or were evicted from your home?				
				4) when you or your child needed medical or dental care but did not get it?				
				5) miss a payment for your phone, internet, cable or streaming services? ¹²				
Economic worry (range: 0 – 5)	1	1	1	worry about being able to meet your monthly living expenses? (<i>all the time, very frequently, occasionally, rarely, very rarely, never</i>)	NA	NA	NA	1 item from the economic stress index (Kling, Liebman, and Katz, 2007)
Panel 3: Parent Psychological Distress								
Perceived stress index* (range: 0 – 40)	9	9	10	In the last months, how often have you (<i>never, almost never, sometimes, fairly often, very often</i>)	.75	.75	.79	Additive Index. Cohen et al. (1994, 1983)
Subindex: distress (range: 0 – 24)	6	6	6	1) been upset because of something that happened unexpectedly?	.84	.86	.87	Additive subindex. Hewitt, Flett, Mosher (1992)
				2) felt nervous and "stressed"?				
				3) found that you could not cope with all the things that you had to do?				
				4) been angered because of things that were outside of your control?				
				5) felt difficulties were piling up so high that you could not overcome them?				
				6) felt that you were unable to control the important things in your life?				
Subindex: coping (range: 0 – 16)	3	3	4	1) felt confident about your ability to handle your personal problems?	.64	.69	.78	Additive subindex. Hewitt, Flett, Mosher (1992)
				2) been able to control irritations in your life?				
				3) felt that you were on top of things?				
				4) felt that things were going your way? ²³				
Parenting stress index (range: 7 – 35)	7	7	-	(<i>strongly disagree, disagree, not sure, agree, strongly agree</i>)	.55	.55	-	Additive index of two indices from two sources.
Subindex: aggravation (range: 3 – 15)	3	3	-	1) I find myself giving up more of my life to meet my [child]'s needs than I ever expected.	.55	.57	-	PSID-CDS (Schickedanz et al., 2018)
				2) I feel trapped by my responsibilities as a parent.				
				3) Since having children, I have been unable to do new and different things.				

Poverty Reduction and Family Processes

Subindex: parenting competence (range: 4 – 20)	4	4	-	1) When it comes to raising kids, I have a lot of confidence in my abilities. 2) I feel good about my parenting ability. 3) I can admit my flaws as a parent, and still think I am a pretty good one. 4) I think my kids will grow up to say I was a wonderful parent.	.82	.79	-	Project GAIN (Slack, Berger, Collins, 2016)
Maternal depression. PHQ-8 (range: 0 – 24)	8	8	8	In the past 2 weeks, how often have you (<i>not at all, several days, more than half the days, nearly every day</i>) 1) been bothered because you had little interest or pleasure in doing things? 2) been bothered from feeling down, depressed, or hopeless? 3) had trouble falling or staying asleep, or sleeping too much? 4) been bothered by feeling tired or had little energy? 5) been bothered by a poor appetite or overeating? 6) been bothered by feeling bad about yourself or that you are a failure or have let yourself or your family down? 7) been bothered from having trouble concentrating on things, such as reading the newspaper or watching television? 8) being bothered from moving or speaking so slowly that other people could have noticed. Or, the opposite being so fidgety or restless that you have been moving around a lot more than usual?	.84	.85	.87	Additive Scale. Kroenke et al. (2009)
Maternal Anxiety. GAD-7 (range: 0 – 21)	-	7	7	Over the last two weeks, (<i>not at all, several days, more than half the days, nearly every days</i>) 1) feeling nervous, anxious, or on edge. 2) not being able to stop or control worrying. 3) worrying too much about different things. 4) trouble relaxing. 5) being so restless that it is hard to sit still. 6) becoming easily annoyed or irritable. 7) feeling afraid, as if something awful might happen.	-	.90	.90	Spitzer et al. (2006)
Maternal Anxiety. Beck Anxiety Inventory (range: 0 – 63)	21	-	21	In the past month, I was bothered by (<i>not at all, mildly, moderately, severely</i>) 1) numbness or tingling. 2) feeling hot. 3) wobbliness in legs. 4) feeling unable to relax. 5) feeling dizzy or lightheaded. 6) heart pounding or racing. 7) feeling unsteady. 8) a feeling of choking. 9) hands trembling. 10) feeling shaky or unsteady. 11) difficulty breathing. 12) indigestion. 13) feeling faint or lightheaded. 14) face flushed. 15) hot or cold sweats.	.90	-	.92	Additive Scale. Beck (1988)
Subscale: Somatic (range: 0 – 45)	15	-	15	1) fear of the worst happening. 2) feeling terrified or afraid. 3) feeling nervous. 4) fear of losing control.	.84	-	.89	Subscale adaptation of Creamer et al. (1995)
Subscale: Psychological (range: 0 – 18)	6	-	6	1) fear of the worst happening. 2) feeling terrified or afraid. 3) feeling nervous. 4) fear of losing control.	.85	-	.85	Subscale adaptation of Creamer et al. (1995)

Poverty Reduction and Family Processes

- 5) fear of dying.
- 6) feeling Scared.

Physiological Stress. Hair Cortisol	NA	-	-	Measure of cortisol from mother's hair sample	NA	-	-	Meyer et al. (2014)
Panel 4: Interparental Relationship Quality								
Co-parent quality (range: 7 – 21)	7	7	-	(<i>always, sometimes, or rarely true</i>)	.90	.88	-	Additive Index McLanahan & Beck. (2010)
Subindex: trust (range:4 – 12)	4	4	-	1) When [partner] is with [child], he acts like the kind of father you want for your child. Would you say it's always true, sometimes true, or rarely true? 2) You can trust him to take good care of [child] 3) You can count on [partner] for help when you need someone to look after [child] for a few hours. 4) If you had to go away for one week and could not take [child]with you, how much would you trust[partner] to take care of [child]? (<i>very much, somewhat, not at all</i>)	.83	.78	-	Authors' arrangement based on factor analysis
Subindex: cooperative (range:3 – 9)	3	3	-	1) He respects the schedules and rules you make for [child]. 2) He supports you in the way you want to raise [child]. 3) You and [partner] talk about problems that come up with [child].	.81	.78	-	Authors' arrangement based on factor analysis
Ever hit by partner (range: 0 – 1)	1	1	-	Ever cut, bruised, or seriously hurt, in a fight, with your current partner? (<i>yes/no</i>)	NA	NA	NA	1 item. Fragile Families and Child Wellbeing Study
Argue with partner (range: 1 – 5)	1	1	-	you and your current partner argue about the things that are important to you (<i>always, often, sometimes, rarely, never</i>)	NA	NA	NA	1 item. Fragile Families and Child Wellbeing Study
Relationship Quality* (range: 11 – 33)	10	11	11	How often (<i>often, sometimes, never</i>)	.83	.75	.85	Additive Scale adapted from Fragile Families and Child Wellbeing Study
Subindex: supportive (rang: 4 – 12)	4	4	4	1) was your partner fair and willing to compromise when you had a disagreement? 2) did your partner express affection or love for you? 3) did your partner encourage or help you to do things that were important to you? 4) did your partner listen to you when you needed someone to talk to?	.80	.73	.81	Additive subindex. Turney (2015)
Subindex: emotional abuse (range: 2 – 6)	2	2	2	1) did your partner insult or criticize you or your ideas? 2) did your partner make you feel down or bad about yourself during an argument?	.80	.67	.81	Additive subindex. Turney (2015)
Subindex: physical abuse (range: 5 – 15)	4	5	5	1) did your partner try to keep you from seeing or talking with your friends or family, or try to prevent you from going to work or school? 2) did your partner hit, slap, kick, or otherwise hurt you physically? 3) did your partner try to make you have sex or do sexual things you didn't want to do? 4) did your partner make you feel afraid? 5) has your partner ever threatened to spank or slap your child or children? ²³	.73	.59	.76	Additive subindex. Turney (2015)
Panel 5: Parenting Quality								
Parent-Child Activities* (range: 5 – 20)	4	5	4	How often do you (<i>every day, few times a week, few times a month, rarely/not at all</i>) 1) read books or look at pictures in a book with [child]? 2) tell stories to [child]? 3) play together with toys for building things? 4) play pretend games? ²³ 5) go to any out-of-the home activities or programs that are specifically for babies, like Mommy and Me, library story times, and play groups? ¹²	.61	.66	.67	Additive Index. Rodriguez and Tamis-LeMonda (2011)

Poverty Reduction and Family Processes

(absent, barely, clearly)

				1) Speaks in a warm tone.					
				2) Smiles at child.					
				3) Praises child.					
				4) Is physically close to child.					
				5) Uses positive expressions with child.					
				6) Is engaged and interacting with child.					
				7) Shows emotional warmth.					
				8) Pays attention to what child is doing.					
				9) Changes pace or activity to meet child's interests or needs.					
				10) Is flexible about child's change of activities or interests.					
				11) Follows what child is trying to do.					
				12) Responds to child's emotions.					
				13) Looks at child when child talks or makes sounds.					
Parent-Child Interaction: PICCOLO (range: 0 – 58)	29	-	-	14) Replies to child's words or sounds.				Observational assessment. Roggman et al. (2013)	
				15) Waits for child's response after making a suggestion.		.75	-	-	
				16) Encourages child to handle toys.					
				17) Supports child in making choices.					
				18) Supports child in doing things on his or her own.					
				19) Verbally encourages child's efforts.					
				20) Offers suggestions to help the child.					
				21) Shows enthusiasm about what child is doing.					
				22) Explains reasons for something to the child.					
				23) Suggests activities to extend what the child is doing.					
				24) Repeats or expands child's words or sounds.					
				25) Labels objects or actions for the child.					
				26) Engages in pretend play with child.					
				27) Does activities in a sequence of steps.					
				28) Talks to child about characteristics of objects.					
				29) Asks child for information.					
Spanking as a discipline (range: 0 – 1)	1	1	1	In the past month have you spanked your one-year-old child because they were misbehaving or acting up? (yes/no)		NA	NA	NA	1 binary item. Reichman et al. (2001)

Note: Age 1 data was collected in July of 2019 to June of 2020; Age 2 Data was collected July of 2020 to July of 2021; Age 3 Data was collected July of 2021 to July of 2022. Full references for the measures are provided in the **Appendix References**. Household incomes across all years are inflation-adjusted to 2019 dollars, and the poverty line is based on the 2019 U.S. Census poverty threshold. Income-to-needs is the household income divided by the poverty line for a given family size and composition. Income and income-to-needs have been truncated at the 99th percentile. * For five measures, the number of items that make up the index or scale are not identical across ages (sometimes missing due to survey error). Superscript (¹²³) under the item lists in column 3 indicates age-specific items. For example, ²³ means that the item is asked only in age 2 and 3. “-” indicates missing information. NA=Not Applicable. PHQ-8=Personal Health Questionnaire Depression scale. GAD-7=General Anxiety Disorder-7. PICCOLO=Parenting Interaction with Children: Checklist of Observations Linked to Outcomes. The range of scores provides the possible range based on scoring the items, not the observed range based on responses.

Appendix Table 4. Summary of ITT Estimates of the Impacts of the BFY High-Cash Gift on Family Wellbeing and Family Processes Measures with Full Scales and Subscales

Family	Outcome	Hypoth. direction	Age 1	Age 2	Age 3	Pooled Sample (Ages 1–3)	
<i>Panel 3: Parent Psychological Distress</i>							
3	Perceived Stress Index	-	Effect (Con. Interval)	.62 (-.18 – 1.41)	.45 (-.34 – 1.24)	.75 (-.14 – 1.65)	.63 (-.02 – 1.27)
			Std. Effect	.10	.07	.10	.09
			N Deg. Freedom	930 883	920 874	921 875	2771 973
			p-value	.13	.26	.10	.06
	distress	-	Effect (Con. Interval)	.52 (-.14 – 1.18)	.13 (-.51 – .76)	.51 (-.16 – 1.18)	.40 (-.11 – .92)
			Std. Effect	.10	.03	.09	.08
			N Deg. Freedom	930 883	919 873	920 874	2769 972
			p-value	.12	.69	.14	.13
	coping (reverse)	-	Effect (Con. Interval)	.11 (-.29 – .50)	.35 (-.05 – .76)	.24 (-.28 – .75)	.24 (-.08 – .56)
			Std. Effect	.04	.12	.06	.07
			N Deg. Freedom	926 879	911 865	921 875	2758 971
			p-value	.60	.09	.37	.15
3	Parenting Stress Index	-	Effect (Con. Interval)	.53 (.06 – .99)	.52 (.06 – .98)		.52 (.12 – .92)
			Std. Effect	.15	.15		.15
			N Deg. Freedom	929 882	918 872		1847 964
			p-value	.03	.03		.01
	aggravation	-	Effect (Con. Interval)	.41 (.06 – .77)	.24 (-.11 – .59)		.33 (.02 – .63)
			Std. Effect	.16	.09		.12
			N Deg. Freedom	924 877	915 869		1839 963
			p-value	.02	.17		.03
	parenting competence (reverse)	-	Effect (Con. Interval)	.11 (-.17 – .39)	.28 (.01 – .56)		.20 (-.03 – .42)
			Std. Effect	.06	.14		.10
			N Deg. Freedom	929 882	918 872		1847 964
			p-value	.43	.04		.09
3	Maternal Anxiety (Beck)	-	Effect (Con. Interval)	1.66 (.66 – 2.66)		-.04 (-1.02 – .93)	.80 (-.05 – 1.64)
			Std. Effect	.25		-.01	.12
			N Deg. Freedom	930 883		919 873	1849 967
			p-value	.00		.93	.06
	somatic	-	Effect (Con. Interval)	.96 (.29 – 1.63)		-.22 (-.90 – .46)	.36 (-.21 – .93)
			Std. Effect	.21		-.04	.09
			N Deg. Freedom	930 883		919 873	1849 967

Poverty Reduction and Family Processes

			<i>p</i> -value	.00	.52	.22
	psychological	-	Effect (Con. Interval)	.70 (.27 – 1.13)	.18 (-.20 – .55)	.44 (.10 – .78)
			Std. Effect	.25	.06	.16
			N Deg. Freedom	930 883	919 873	1849 967
			<i>p</i> -value	.00	.35	.01
Panel 4: Interparental Relationship Quality						
4	Co-Parenting Relationship Quality	+	Effect (Con. Interval)	-.38 (-.85 – .09)	-.34 (-.80 – .12)	-.34 (-.73 – .05)
			Std. Effect	-.13	-.12	-.12
			N Deg. Freedom	720 673	663 617	1383 802
			<i>p</i> -value	.12	.15	.09
	trust	+	Effect (Con. Interval)	-.17 (-.46 – .11)	-.16 (-.42 – .11)	-.16 (-.39 – .07)
			Std. Effect	-.10	-.10	-.09
			N Deg. Freedom	719 672	658 612	1377 801
			<i>p</i> -value	.23	.25	.18
	cooperative	+	Effect (Con. Interval)	-.17 (-.38 – .05)	-.21 (-.43 – .01)	-.18 (-.36 – .00)
			Std. Effect	-.13	-.16	-.14
			N Deg. Freedom	717 670	662 616	1379 802
			<i>p</i> -value	.12	.07	.05
4	Romantic Relationship Quality Index	+	Effect (Con. Interval)	-.30 (-.91 – .32)	-.32 (-.81 – .18)	-.62 (-1.18 – -.06)
			Std. Effect	-.08	-.12	-.17
			N Deg. Freedom	572 525	512 467	793 747
			<i>p</i> -value	.35	.21	.03
	supportive	+	Effect (Con. Interval)	-.40 (-.76 – -.04)	-.11 (-.44 – .21)	-.36 (-.68 – -.03)
			Std. Effect	-.20	-.07	-.17
			N Deg. Freedom	570 523	511 466	793 747
			<i>p</i> -value	.03	.49	.03
	emotional abuse (reverse)	+	Effect (Con. Interval)	.08 (-.11 – .27)	-.09 (-.25 – .07)	-.12 (-.29 – .05)
			Std. Effect	.07	-.11	-.10
			N Deg. Freedom	571 524	511 466	792 746
			<i>p</i> -value	.42	.27	.17
	physical abuse (reverse)	+	Effect (Con. Interval)	.02 (-.19 – .24)	-.11 (-.24 – .02)	-.13 (-.31 – .05)
			Std. Effect	.02	-.14	-.11
			N Deg. Freedom	570 523	511 466	793 747
			<i>p</i> -value	.83	.10	.16

Note: Each block of rows presents for each outcome, the raw treatment effect with confidence intervals in parentheses; the standardized treatment effect size; number of observations and degrees of freedom; and the *p*-values. The ITT estimates come from regressions with site fixed-effects, controlling for baseline covariates, child age at interview, and phone interview status. Outcomes were standardized using the standard deviation of the low-cash gift within each age. We report the degrees of freedom which is computed as the sample size minus the number of parameters estimated in the

Poverty Reduction and Family Processes

model. This statistic is complicated in the pooled sample because we cluster the standard error to adjust for non-independence. For simplicity, we report the default degrees of freedom reported in most software which is the number of clusters minus one. The p -value comes from analyses that do not correct for multiple outcomes. The Pooled column present estimates from analyses that pool observations across ages, adjust for age indicators, and cluster the standard error at the individual level. Preregistered, hypothesized directions of the intervention effects are presented with “+” or “-” for directional increase or decrease in the outcome, respectively. The direction of the subindices and subscales match the main index or scale. For example, the positively oriented subindex, “parenting competence”, has been recoded such that higher values reflect lower parenting competence (i.e., more stress). Household incomes across all years are inflation-adjusted to 2019 dollars, and the poverty line is based on the 2019 U.S. Census poverty threshold. Income-to-needs is the household income divided by the poverty line for a given family size and composition. Income and income-to-needs have been truncated at the 99th percentile. PHQ-8=Personal Health Questionnaire Depression scale. GAD-7=General Anxiety Disorder-7. PICCOLO=Parenting Interaction with Children: Checklist of Observations Linked to Outcomes.

Poverty Reduction and Family Processes

Appendix Table 5A. Description How Measures were categorized into Analytic Families in this Study Compared with How Measures Were Categorized into Analytic Families in the BFY Preregistration

Outcome	Not Preregistered	Paper Arrangement of Outcomes	Preregistered Arrangement of Outcomes
Income-to-needs ratio with gift	X	1. Economic Resources	1. Household Economic Hardship
Household Income with gift	X	1. Economic Resources	Not Preregistered
Food Insecurity Index		2. Economic Pressure	1. Household Economic Hardship
Non-food economic hardship.	X	2. Economic Pressure	1. Household Economic Hardship
Expense Worry	X	2. Economic Pressure	1. Household Economic Hardship
Perceived Stress Index		3. Parent Psychological Distress	2. Family and Maternal Perceived Stress
Parenting Stress Index		3. Parent Psychological Distress	2. Family and Maternal Perceived Stress
Maternal Depression (PHQ-8)		3. Parent Psychological Distress	3. Maternal Mental Health
Maternal Anxiety (GAD-7)		3. Parent Psychological Distress	3. Maternal Mental Health
Maternal Anxiety (Beck)		3. Parent Psychological Distress	3. Maternal Mental Health
Physiological Stress (Ln Hair Cortisol)		3. Parent Psychological Distress	4. Maternal Physiological Stress
Co-Parent Relationship Quality	X	4a. Interparental Relationship Quality	5. Co-Parent Quality
Romantic Relationship Quality Index		4a. Interparental Relationship Quality	6. Maternal Relationship
Ever cut/bruised/seriously hurt by partner		4a. Interparental Relationship Quality	6. Maternal Relationship
Frequency of Arguing		4a. Interparental Relationship Quality	6. Maternal Relationship
Parent-Child Activities Index		4b. Parenting Quality	7. Frequency of Parent-Child Interaction
Parent-Child Interaction (PICCOLO)		4b. Parenting Quality	8. Parent-Child Interaction
Spanking discipline strategy		4b. Parenting Quality	9. Maternal Discipline

Notes: The table lists all the outcome measures examined in this paper and a few additional measures not in the paper, and indicates which measures were preregistered. Outcome measures are arranged into families of outcomes to implement the preregistered Westfall and Young's (1993) step-down resampling methods of addressing multiple hypothesis testing. Thus, the arrangement of outcomes into families create different adjustments to the p-values. The third column shows the arrangement of outcome measures into families that correspond to the conceptual model used in the paper, the authors adaptation of the family stress model (Masarik & Conger, 2017). The fourth column shows the arrangement of outcome that follows an adaptation of the preregistered plan that closely follow the original preregistration and deviate by excluding a few outcome measures not examined in this paper and assigning non-preregistered outcomes into preregistered families of outcomes, except for co-parent quality. PHQ-8=Personal Health Questionnaire Depression Scale. GAD-7=General Anxiety Disorder-7. PICCOLO=Parenting Interactions with Children: Checklist of Observations Linked to Outcomes.

Poverty Reduction and Family Processes

Appendix Table 5B. Summary of ITT Estimates of the Impacts of the BFY High-Cash Gift on Family Wellbeing and Family Processes Measures with *p*-value Adjustments following the Preregistration Plan

Family	Outcome	Hypoth. direction	Age 1	Age 2	Age 3	Pooled Sample	
Panel 1: Economic Resources							
1	Income-to-needs ratio with gift	+	Effect (Con. Interval)		.10 (.00 – .20)	.11 (.00 – .22)	.11 (.02 – .19)
			Std. Effect		.12	.13	.13
			N Deg. Freedom		922 876	922 876	1844 956
			<i>p</i> -value WY <i>p</i> -value		.04 .17	.04 .16	.01 .05
1	Household Income with gift (\$1000s, in 2019 dollars)	+	Effect (Con. Interval)		2.79 (-.09 – 5.68)	2.76 (-.32 – 5.83)	2.86 (.37 – 5.35)
			Std. Effect		.11	.11	.11
			N Deg. Freedom		922 876	922 876	1844 956
			<i>p</i> -value WY <i>p</i> -value		.06 .20	.08 .26	.03 .09
Panel 2: Economic Pressure							
1	Food Insecurity Index	-	Effect (Con. Interval)	.23 (-.00 – .46)	-.00 (-.24 – .23)	.05 (-.17 – .27)	.10 (-.08 – .28)
			Std. Effect	.14	-.00	.03	.06
			N Deg. Freedom	929 882	921 875	920 874	2770 972
			<i>p</i> -value WY <i>p</i> -value	.05 .14	.98 .98	.68 .89	.27 .44
1	Non-food Economic Hardship Index	-	Effect (Con. Interval)	.04 (-.12 – .20)	.07 (-.09 – .23)	.02 (-.09 – .14)	.05 (-.06 – .16)
			Std. Effect	.04	.06	.03	.04
			N Deg. Freedom	930 883	921 875	922 876	2773 972
			<i>p</i> -value WY <i>p</i> -value	.62 .62	.38 .72	.68 .89	.41 .44
1	Expense Worry	-	Effect (Con. Interval)	.17 (-.04 – .38)	.08 (-.14 – .29)	.11 (-.10 – .31)	.12 (-.04 – .28)
			Std. Effect	.10	.05	.06	.07
			N Deg. Freedom	930 883	919 873	919 873	2768 972
			<i>p</i> -value WY <i>p</i> -value	.12 .22	.48 .72	.31 .64	.14 .33
Panel 3: Parent Psychological Distress							
2	Perceived Stress Index	-	Effect (Con. Interval)	.62 (-.18 – 1.41)	.45 (-.34 – 1.24)	.75 (-.14 – 1.65)	.63 (-.02 – 1.27)
			Std. Effect	.10	.07	.10	.09
			N Deg. Freedom	930 883	920 874	921 875	2771 973
			<i>p</i> -value WY <i>p</i> -value	.13 .13	.26 .26	.10 .10	.06 .06
2	Parenting Stress Index	-	Effect (Con. Interval)	.53 (.06 – .99)	.52 (.06 – .98)		.52 (.12 – .92)
			Std. Effect	.15	.15		.15
			N Deg. Freedom	929 882	918 872		1847 964
			<i>p</i> -value WY <i>p</i> -value	.03 .05	.03 .05		.01 .02
3	Maternal Depression (PHQ-8)	-	Effect (Con. Interval)	.26 (-.29 – .80)	.33 (-.20 – .86)	-.03 (-.56 – .50)	.19 (-.22 – .60)
			Std. Effect	.06	.08	-.01	.05

Poverty Reduction and Family Processes

			N Deg. Freedom	930 883	919 873	919 873	2768 973
			<i>p</i> -value WY <i>p</i> -value	.35 .35	.22 .32	.91 .99	.37 .39
3	Maternal Anxiety (GAD-7)	-	Effect (Con. Interval)		.30 (-.22 – .82)	.17 (-.34 – .69)	.25 (-.19 – .68)
			Std. Effect		.08	.04	.06
			N Deg. Freedom		919 873	921 875	1840 956
			<i>p</i> -value WY <i>p</i> -value		.26 .32	.51 .81	.27 .39
3	Maternal Anxiety (Beck)	-	Effect (Con. Interval)	1.66 (.66 – 2.66)		-.04 (-1.02 – .93)	.80 (-.05 – 1.64)
			Std. Effect	.25		-.01	.12
			N Deg. Freedom	930 883		919 873	1849 967
			<i>p</i> -value WY <i>p</i> -value	.00 .00		.93 .99	.06 .14
4	Physiological Stress (Ln Hair Cortisol)	-	Effect (Con. Interval)	.03 (-.26 – .32)			.03 (-.26 – .32)
			Std. Effect	.02			.02
			N Deg. Freedom	364 317			364 363
			<i>p</i> -value WY <i>p</i> -value	.84 .84			.84 .84
Panel 4: Interparental Relationship Quality							
5	Co-Parenting Relationship Quality	+	Effect (Con. Interval)	-.38 (-.85 – .09)	-.34 (-.80 – .12)		-.34 (-.73 – .05)
			Std. Effect	-.13	-.12		-.12
			N Deg. Freedom	720 673	663 617		1383 802
			<i>p</i> -value WY <i>p</i> -value	.12 .11	.15 .15		.09 .09
6	Romantic Relationship Quality Index	+	Effect (Con. Interval)	-.30 (-.91 – .32)	-.32 (-.81 – .18)	-.62 (-1.18 – -.06)	-.47 (-.86 – -.08)
			Std. Effect	-.08	-.12	-.17	-.14
			N Deg. Freedom	572 525	512 467	793 747	1877 900
			<i>p</i> -value WY <i>p</i> -value	.34 .69	.21 .39	.03 .03	.02 .06
6	Ever cut/bruised/seriously hurt by partner	-	Effect (Con. Interval)	-.02 (-.07 – .02)	.01 (-.01 – .04)		-.00 (-.03 – .02)
			Std. Effect	-.08	.12		.02
			N Deg. Freedom	572 525	511 466		1083 770
			<i>p</i> -value WY <i>p</i> -value	.35 .69	.33 .39		.74 .74
6	Frequency of Arguing	-	Effect (Con. Interval)	-.04 (-.21 – .14)	.11 (-.04 – .27)		.05 (-.07 – .17)
			Std. Effect	-.04	.13		.06
			N Deg. Freedom	566 519	512 467		1078 766
			<i>p</i> -value WY <i>p</i> -value	.67 .69	.15 .39		.43 .68
Panel 5: Parenting Quality							
7	Parent-Child Activities Index	+	Effect (Con. Interval)	.44 (.09 – .79)	.43 (.05 – .81)	.38 (.05 – .72)	.42 (.14 – .70)
			Std. Effect	.16	.14	.15	.15
			N Deg. Freedom	929 882	919 873	915 869	2763 971
			<i>p</i> -value WY <i>p</i> -value	.01 .01	.03 .03	.02 .02	.00 .00
8		+	Effect (Con. Interval)	.53 (-.42 – 1.48)			.53 (-.42 – 1.48)

Poverty Reduction and Family Processes

	Parent-Child Interaction (PICCOLO)		Std. Effect N Deg. Freedom <i>p</i> -value WY <i>p</i> -value	.10 543 496 .28 .27		.10 543 542 .28 .27	
9	Spanking discipline strategy	+	Effect (Con. Interval) Std. Effect N Deg. Freedom <i>p</i> -value WY <i>p</i> -value	.02 (-.02 – .06) .08 596 549 .40 .40	-.05 (-.10 – -.01) -.14 914 868 .02 .02	-.03 (-.08 – .02) -.07 917 871 .27 .27	-.03 (-.06 – .01) -.06 2427 959 .14 .14

Note: Each block of rows presents for each outcome, the raw treatment effect with confidence intervals in parentheses; the standardized treatment effect size; number of observations and degrees of freedom; and the *p*-values and Westfall and Young's adjusted *p*-values. The ITT estimates come from regressions with site fixed-effects, controlling for baseline covariates, child age at interview, and phone interview status. Outcomes were standardized using the standard deviation of the low-cash gift within each age. We report the degrees of freedom which is computed as the sample size minus the number of parameters estimated in the model. This statistic is complicated in the pooled sample because we cluster the standard error to adjust for non-independence. For simplicity, we report the default degrees of freedom reported in most software which is the number of clusters minus one. The *p*-value comes from analyses that do not correct for multiple outcomes, while WY *p*-value is based on Westfall and Young's (1993) step-down resampling methods of addressing multiple hypothesis testing, where outcomes are grouped in families (following Figure 1) and their *p*-values adjusted within each family. The Pooled column present estimates from analyses that pool observations across ages, adjust for age indicators, and cluster the standard error at the individual level. Preregistered, hypothesized directions of the intervention effects are presented with "+" or "-" for directional increase or decrease in the outcome, respectively. Household incomes across all years are inflation-adjusted to 2019 dollars, and the poverty line is based on the 2019 U.S. Census poverty threshold. Income-to-needs is the household income divided by the poverty line for a given family size and composition. Income and income-to-needs have been truncated at the 99th percentile. PHQ-8=Personal Health Questionnaire Depression scale. GAD-7=General Anxiety Disorder-7. PICCOLO=Parenting Interaction with Children: Checklist of Observations Linked to Outcomes.

Appendix Table 6. Summary of ITT Estimates of the Impacts of the BFY High-Cash Gift on Family Wellbeing and Family Processes Measures Constructed from Common-Items Across Ages

Family	Outcome	Hypoth. direction		Age 1	Age 2	Age 3	Pooled Sample
Panel 2: Economic Pressure							
2	Food Insecurity Index	-	Effect (Con. Interval)	.23 (-.00 – .46)	.00 (-.20 – .21)	.07 (-.13 – .26)	.11 (-.06 – .27)
			Std. Effect	.14	.00	.04	.07
			N Deg. Freedom	929 882	919 873	919 873	2767 972
			p-value	.05	.97	.51	.20
2	Non-food Economic Hardship Index	-	Effect (Con. Interval)	.04 (-.07 – .16)	.06 (-.06 – .18)	.02 (-.09 – .14)	.04 (-.04 – .13)
			Std. Effect	.05	.07	.03	.05
			N Deg. Freedom	929 882	920 874	922 876	2771 972
			p-value	.47	.31	.68	.32
Panel 3: Maternal Psychological Distress							
3	Perceived Stress Index	-	Effect (Con. Interval)	.62 (-.18 – 1.41)	.45 (-.34 – 1.24)	.69 (-.12 – 1.51)	.60 (-.02 – 1.23)
			Std. Effect	.10	.07	.10	.09
			N Deg. Freedom	930 883	920 874	921 875	2771 973
			p-value	.13	.26	.10	.06
Panel 4: Interparental Relationship Quality							
4	Romantic Relationship Quality Index	+	Effect	-.30 (-.91 – .32)	-.28 (-.76 – .21)	-.62 (-1.17 – -.08)	-.46 (-.85 – -.07)
			Std. Effect	-.08	-.11	-.17	-.14
			N Deg. Freedom	572 525	512 467	793 747	1877 900
			p-value	.35	.26	.03	.02
Panel 5: Parenting Quality							
5	Parent-Child Activities Index	+	Effect (Con. Interval)	.40 (.09 – .71)	.31 (.05 – .58)	.33 (.06 – .59)	.35 (.13 – .57)
			Std. Effect	.17	.15	.17	.16
			N Deg. Freedom	929 882	918 872	914 868	2761 971
			p-value	.01	.02	.01	.00

Note: For measures with missing items in some ages, this table shows the estimate on measures constructed using only items that appear in all the ages. Each block of rows presents for each outcome, the raw treatment effect with confidence intervals in parentheses; the standardized treatment effect size; number of observations and degrees of freedom; and the *p*-values. The ITT estimates come from regressions with site fixed-effects, controlling for baseline covariates, child age at interview, and phone interview status. Outcomes were standardized using the standard deviation of the low-cash gift within each age. We report the degrees of freedom which is computed as the sample size minus the number of parameters estimated in the model. This statistic is complicated in the pooled sample because we cluster the standard error to adjust for non-independence. For simplicity, we report the default degrees of freedom reported in most software which is the number of clusters minus one. The *p*-value comes from analyses that do not correct for multiple outcomes. The Pooled column presents estimates from analyses that pool observations across ages, adjust for age indicators, and cluster the standard error at the individual level. Preregistered, hypothesized directions of the intervention effects are presented with “+” or “-” for directional increase or decrease in the outcome, respectively. Household incomes across all years are inflation-adjusted to 2019 dollars, and the poverty line is based on the 2019 U.S. Census poverty threshold. Income-to-needs is the household income divided by the poverty line for a given family size and composition. Income and income-to-needs have been truncated at the 99th percentile. PHQ-8=Personal Health Questionnaire Depression scale. GAD-7=General Anxiety Disorder-7. PICCOLO=Parenting Interaction with Children: Checklist of Observations Linked to Outcomes.

Poverty Reduction and Family Processes

Appendix Table 7. Summary of ITT Estimates of the Impacts of the BFY High-Cash Gift on Family Wellbeing and Family Processes Measures with Analytic Weights to Improve Baseline Balance Between the High- and Low-Cash Gift Groups

Family	Outcome	Hypoth. direction		Age1	Age 2	Age 3	Pooled Sample
Panel 1: Economic Resources							
1	Income-to-needs ratio with gift	+	Effect (Con. Interval)		.11 (.01 – .21)	.12 (-.01 – .25)	.12 (.03 – .21)
			Std. Effect		.13	.14	.14
			N Deg. Freedom		922 876	922 876	1844 956
			p-value		.03	.07	.01
1	Household Income with gift (\$1000s, in 2019 dollars)	+	Effect (Con. Interval)		3.20 (.20 – 6.19)	3.08 (-.44 – 6.60)	3.23 (.55 – 5.92)
			Std. Effect		.13	.12	.13
			N Deg. Freedom		922 876	922 876	1844 956
			p-value		.04	.09	.02
Panel 2: Economic Pressure							
2	Food Insecurity Index	-	Effect (Con. Interval)	.25 (-.01 – .52)	.05 (-.20 – .30)	.04 (-.19 – .28)	.12 (-.07 – .31)
			Std. Effect	.15	.03	.03	.07
			N Deg. Freedom	929 882	921 875	920 874	2770 972
			p-value	.06	.70	.70	.22
2	Non-food Economic Hardship Index	-	Effect (Con. Interval)	.03 (-.16 – .22)	.09 (-.08 – .27)	.03 (-.10 – .15)	.05 (-.07 – .18)
			Std. Effect	.02	.08	.03	.05
			N Deg. Freedom	930 883	921 875	922 876	2773 972
			p-value	.79	.29	.66	.40
2	Expense Worry	-	Effect (Con. Interval)	.14 (-.09 – .37)	.08 (-.15 – .31)	.12 (-.10 – .34)	.12 (-.06 – .29)
			Std. Effect	.09	.05	.08	.07
			N Deg. Freedom	930 883	919 873	919 873	2768 972
			p-value	.23	.49	.28	.18
Panel 3: Maternal Psychological Distress							
3	Perceived Stress Index	-	Effect (Con. Interval)	.21 (-.73 – 1.16)	.40 (-.45 – 1.24)	.76 (-.19 – 1.71)	.50 (-.23 – 1.22)
			Std. Effect	.03	.06	.10	.07
			N Deg. Freedom	930 883	920 874	921 875	2771 973
			p-value	.66	.36	.12	.18
3	Parenting Stress Index	-	Effect (Con. Interval)	.50 (-.01 – 1.02)	.51 (.02 – .99)		.51 (.09 – .93)
			Std. Effect	.14	.14		.14
			N Deg. Freedom	929 882	918 872		1847 964
			p-value	.05	.04		.02
3	Maternal Depression (PHQ-8)	-	Effect (Con. Interval)	.23 (-.41 – .87)	.38 (-.21 – .96)	-.08 (-.69 – .53)	.19 (-.29 – .66)
			Std. Effect	.06	.10	-.02	.05
			N Deg. Freedom	930 883	919 873	919 873	2768 973

Poverty Reduction and Family Processes

			<i>p</i> -value	.48	.20	.79	.44
3	Maternal Anxiety (GAD-7)	-	Effect (Con. Interval)		.30 (-.28 – .87)	.20 (-.37 – .77)	.26 (-.23 – .75)
			Std. Effect		.08	.05	.06
			N Deg. Freedom		919 873	921 875	1840 956
			<i>p</i> -value		.32	.49	.29
3	Maternal Anxiety (Beck)	-	Effect (Con. Interval)	1.28 (.14 – 2.42)		.12 (-.89 – 1.14)	.70 (-.22 – 1.62)
			Std. Effect	.19		.02	.10
			N Deg. Freedom	930 883		919 873	1849 967
			<i>p</i> -value	.03		.81	.14
3	Physiological Stress (Ln Hair Cortisol)	-	Effect (Con. Interval)	.15 (-.18 – .49)			.15 (-.18 – .49)
			Std. Effect	.11			.11
			N Deg. Freedom	364 317			364 363
			<i>p</i> -value	.37			.37
Panel 4: Interparental Relationship Quality							
4	Co-Parenting Relationship Quality	+	Effect (Con. Interval)	-.41 (-.94 – .11)	-.40 (-.88 – .09)		-.40 (-.82 – .02)
			Std. Effect	-.14	-.14		-.14
			N Deg. Freedom	720 673	663 617		1383 802
			<i>p</i> -value	.12	.11		.06
4	Romantic Relationship Quality Index	+	Effect (Con. Interval)	-.28 (-1.07 – .50)	-.31 (-.79 – .18)	-.88 (-1.43 – -.34)	-.56 (-.97 – -.15)
			Std. Effect	-.08	-.11	-.24	-.16
			N Deg. Freedom	572 525	512 467	793 747	1877 900
			<i>p</i> -value	.48	.22	.00	.01
4	Ever cut/bruised/seriously hurt by partner	-	Effect (Con. Interval)	-.02 (-.08 – .04)	.01 (-.01 – .04)		-.00 (-.03 – .03)
			Std. Effect	-.07	.11		.03
			N Deg. Freedom	572 525	511 466		1083 770
			<i>p</i> -value	.50	.33		.91
4	Frequency of Arguing	-	Effect (Con. Interval)	-.01 (-.19 – .17)	.10 (-.06 – .27)		.06 (-.07 – .19)
			Std. Effect	-.01	.13		.07
			N Deg. Freedom	566 519	512 467		1078 766
			<i>p</i> -value	.89	.22		.40
Panel 5: Parenting Quality							
5	Parent-Child Activities Index	+	Effect (Con. Interval)	.61 (.20 – 1.01)	.47 (.06 – .89)	.45 (.10 – .81)	.51 (.19 – .82)
			Std. Effect	.23	.16	.18	.19
			N Deg. Freedom	929 882	919 873	915 869	2763 971
			<i>p</i> -value	.00	.03	.01	.00
5	Parent-Child Interaction (PICCOLO)	+	Effect (Con. Interval)	.55 (-.48 – 1.57)			.55 (-.48 – 1.57)
			Std. Effect	.10			.10

Poverty Reduction and Family Processes

			N Deg. Freedom	543 496			543 542
			<i>p</i> -value	.30			.30
			Effect (Con. Interval)	.02 (-.02 – .07)	-.05 (-.10 – .00)	-.03 (-.09 – .02)	-.03 (-.06 – .01)
			Std. Effect	.10	-.12	-.08	-.05
5	Spanking discipline strategy	+	N Deg. Freedom	596 549	914 868	917 871	2427 959
			<i>p</i> -value	.26	.06	.27	.21

Note: Each block of rows presents for each outcome, the raw treatment effect with confidence intervals in parentheses; the standardized treatment effect size; number of observations and degrees of freedom; and the *p*-values. The estimates are weighted using ATT weights, where low-cash gift subsample was weighted by the odds of being in the high-cash gift group to look like the high-cash gift sample, on average. The estimates come from regressions with site fixed-effects, controlling for baseline covariates, child age at interview, and phone interview status. We report the degrees of freedom which is computed as the sample size minus the number of parameters estimated in the model. This statistic is complicated in the pooled sample because we cluster the standard error to adjust for non-independence. For simplicity, we report the default degrees of freedom reported in most software which is the number of clusters minus one. The number of observations is computed without weights. Outcomes were standardized using the standard deviation of the low-cash gift within each age. The *p*-value comes from analyses that do not correct for multiple outcomes. The Pooled column present estimates from analyses that pool observations across ages, adjust for age indicators, and cluster the standard error at the individual level. Preregistered, hypothesized directions of the intervention effects are presented with “+” or “-” for directional increase or decrease in the outcome, respectively. Household incomes across all years are inflation-adjusted to 2019 dollars, and the poverty line is based on the 2019 U.S. Census poverty threshold. Income-to-needs is the household income divided by the poverty line for a given family size and composition. Income and income-to-needs have been truncated at the 99th percentile. PHQ-8=Personal Health Questionnaire Depression scale. GAD-7=General Anxiety Disorder-7. PICCOLO=Parenting Interaction with Children: Checklist of Observations Linked to Outcomes.

Appendix Table 8. Summary of ITT Estimates of the Impacts of the BFY High-Cash Gift on Family Wellbeing and Family Processes Measures with Analytic Weights for Non-Response

Family	Outcome	Hypoth. direction		Age 1	Age 2	Age 3	Pooled Sample
Panel 1: Economic Resources							
1	Income-to-needs ratio with gift	+	Effect (Con. Interval)		.10 (.00 – .20)	.11 (.00 – .22)	.11 (.02 – .19)
			Std. Effect		.12	.13	.13
			N Deg. Freedom		922 876	922 876	1844 956
			p-value		.05	.04	.01
1	Household Income with gift (\$1000s, in 2019 dollars)	+	Effect (Con. Interval)		2.80 (-.09 – 5.70)	2.77 (-.31 – 5.84)	2.87 (.37 – 5.36)
			Std. Effect		.11	.11	.11
			N Deg. Freedom		922 876	922 876	1844 956
			p-value		.06	.08	.02
Panel 2: Economic Pressure							
2	Food Insecurity Index	-	Effect (Con. Interval)	.23 (-.00 – .47)	-.01 (-.24 – .22)	.04 (-.18 – .26)	.10 (-.08 – .27)
			Std. Effect	.14	-.01	.02	.06
			N Deg. Freedom	929 882	921 875	920 874	2770 972
			p-value	.05	.93	.74	.30
2	Non-food Economic Hardship Index	-	Effect (Con. Interval)	.04 (-.12 – .19)	.07 (-.09 – .22)	.02 (-.10 – .14)	.04 (-.07 – .15)
			Std. Effect	.03	.06	.02	.04
			N Deg. Freedom	930 883	921 875	922 876	2773 972
			p-value	.66	.41	.75	.46
2	Expense Worry	-	Effect (Con. Interval)	.17 (-.04 – .38)	.07 (-.14 – .29)	.10 (-.11 – .30)	.12 (-.05 – .28)
			Std. Effect	.10	.05	.06	.07
			N Deg. Freedom	930 883	919 873	919 873	2768 972
			p-value	.12	.50	.36	.16
Panel 3: Parent Psychological Distress							
3	Perceived Stress Index	-	Effect (Con. Interval)	.61 (-.19 – 1.40)	.46 (-.33 – 1.24)	.72 (-.18 – 1.61)	.61 (-.03 – 1.25)
			Std. Effect	.10	.07	.10	.09
			N Deg. Freedom	930 883	920 874	921 875	2771 973
			p-value	.14	.25	.12	.06
3	Parenting Stress Index	-	Effect (Con. Interval)	.53 (.06 – 1.00)	.52 (.06 – .99)		.53 (.12 – .93)
			Std. Effect	.15	.15		.15
			N Deg. Freedom	929 882	918 872		1847 964
			p-value	.03	.03		.01
3	Maternal Depression (PHQ-8)	-	Effect (Con. Interval)	.25 (-.29 – .80)	.33 (-.20 – .86)	-.06 (-.60 – .47)	.18 (-.24 – .59)
			Std. Effect	.06	.08	-.01	.04
			N Deg. Freedom	930 883	919 873	919 873	2768 973

Poverty Reduction and Family Processes

			<i>p</i> -value	.36	.22	.81	.40
3	Maternal Anxiety (GAD-7)	-	Effect (Con. Interval)		.29 (-.23 – .81)	.15 (-.37 – .67)	.23 (-.21 – .66)
			Std. Effect		.08	.03	.06
			N Deg. Freedom		919 873	921 875	1840 956
			<i>p</i> -value		.27	.58	.30
3	Maternal Anxiety (Beck)	-	Effect (Con. Interval)	1.66 (.66 – 2.65)		-.07 (-1.05 – .90)	.77 (-.07 – 1.61)
			Std. Effect	.25		-.01	.12
			N Deg. Freedom	930 883		919 873	1849 967
			<i>p</i> -value	.00		.88	.07
3	Physiological Stress (Ln Hair Cortisol)	-	Effect (Con. Interval)	.03 (-.26 – .32)			.03 (-.26 – .32)
			Std. Effect	.02			.02
			N Deg. Freedom	364 317			364 363
			<i>p</i> -value	.82			.82
Panel 4: Interparental Relationship Quality							
4	Co-Parenting Quality	+	Effect (Con. Interval)	-.37 (-.84 – .10)	-.36 (-.82 – .11)		-.35 (-.74 – .05)
			Std. Effect	-.13	-.13		-.12
			N Deg. Freedom	720 673	663 617		1383 802
			<i>p</i> -value	.12	.14		.09
4	Relationship Quality Index	+	Effect (Con. Interval)	-.29 (-.90 – .33)	-.30 (-.80 – .19)	-.61 (-1.17 – -.05)	-.46 (-.85 – -.07)
			Std. Effect	-.08	-.11	-.17	-.14
			N Deg. Freedom	572 525	512 467	793 747	1877 900
			<i>p</i> -value	.36	.23	.03	.02
4	Ever cut/bruised/seriously hurt by partner	-	Effect (Con. Interval)	-.02 (-.07 – .02)	.01 (-.01 – .04)		-.00 (-.03 – .02)
			Std. Effect	-.08	.11		.02
			N Deg. Freedom	572 525	511 466		1083 770
			<i>p</i> -value	.34	.34		.74
4	Frequency of Arguing	-	Effect (Con. Interval)	-.04 (-.21 – .14)	.11 (-.05 – .26)		.05 (-.07 – .17)
			Std. Effect	-.04	.13		.06
			N Deg. Freedom	566 519	512 467		1078 766
			<i>p</i> -value	.68	.17		.44
Panel 5: Parenting Quality							
5	Parent-Child Activities Index	+	Effect (Con. Interval)	.45 (.09 – .80)	.43 (.05 – .82)	.38 (.04 – .71)	.42 (.14 – .70)
			Std. Effect	.17	.15	.15	.15
			N Deg. Freedom	929 882	919 873	915 869	2763 971
			<i>p</i> -value	.01	.03	.03	.00
5	Parent-Child Interaction (PICCOLO)	+	Effect (Con. Interval)	.54 (-.42 – 1.50)			.54 (-.42 – 1.50)
			Std. Effect	.10			.10

Poverty Reduction and Family Processes

			N Deg. Freedom	543 496		543 542
			<i>p</i> -value	.27		.27
			Effect (Con. Interval)	.02 (-.02 – .06)	-.05 (-.10 – -.01)	-.03 (-.08 – .02)
			Std. Effect	.09	-.14	-.08
5	Spanking discipline strategy	+	N Deg. Freedom	596 549	914 868	917 871
			<i>p</i> -value	.33	.02	.23
						2427 959
						.14

Note: Each block of rows presents for each outcome, the raw treatment effect with confidence intervals in parentheses; the standardized treatment effect size; number of observations and degrees of freedom; and the *p*-values. The estimates are weighted using non-response weights, where sample for each age was weighted by the inverse probability of having each sample to look like the full study sample of 1,000 observations. The estimates come from regressions with site fixed-effects, controlling for baseline covariates, child age at interview, and phone interview status. We report the degrees of freedom which is computed as the sample size minus the number of parameters estimated in the model. This statistic is complicated in the pooled sample because we cluster the standard error to adjust for non-independence. For simplicity, we report the default degrees of freedom reported in most software which is the number of clusters minus one. The number of observations is computed without weights. Outcomes were standardized using the standard deviation of the low-cash gift within each age. The *p*-value comes from analyses that do not correct for multiple outcomes. The Pooled column present estimates from analyses that pool observations across ages, adjust for age indicators, and cluster the standard error at the individual level. Preregistered, hypothesized directions of the intervention effects are presented with “+” or “-” for directional increase or decrease in the outcome, respectively. Household incomes across all years are inflation-adjusted to 2019 dollars, and the poverty line is based on the 2019 U.S. Census poverty threshold. Income-to-needs is the household income divided by the poverty line for a given family size and composition. Income and income-to-needs have been truncated at the 99th percentile. PHQ-8=Personal Health Questionnaire Depression scale. GAD-7=General Anxiety Disorder-7. PICCOLO=Parenting Interaction with Children: Checklist of Observations Linked to Outcomes.

Poverty Reduction and Family Processes

Appendix Table 9. Summary of ITT Estimates of the Impacts of the BFY High-Cash Gift on Family Wellbeing and Family Processes Measures Using Multiple Imputation to Correct for Missing Data

Family	Outcome	Hypoth. direction		Age 1	Age 2	Age 3	Pooled Sample
Panel 1: Economic Resources							
1	Income-to-needs ratio with gift	+	Effect (Con. Interval) N Deg. Freedom <i>p</i> -value		.10 (.00 – .19) 1000 953 .05	.10 (-.01 – .21) 1000 953 .06	.10 (.02 – .19) 2000 999 .02
1	Household Income with gift (\$1000s, in 2019 dollars)	+	Effect (Con. Interval) N Deg. Freedom <i>p</i> -value		2.73 (-.13 – 5.59) 1000 953 .06	2.50 (-.59 – 5.59) 1000 953 .11	2.69 (.21 – 5.18) 2000 999 .03
Panel 2: Economic Pressure							
2	Food Insecurity Index	-	Effect (Con. Interval) N Deg. Freedom <i>p</i> -value	.22 (-.02 – .45) 1000 952 .07	.02 (-.22 – .26) 1000 953 .87	.08 (-.14 – .31) 1000 953 .48	.11 (-.07 – .29) 3000 999 .22
2	Non-food Economic Hardship Index	-	Effect (Con. Interval) N Deg. Freedom <i>p</i> -value	.04 (-.11 – .20) 1000 952 .58	.08 (-.08 – .24) 1000 953 .30	.03 (-.08 – .15) 1000 953 .57	.05 (-.06 – .17) 3000 999 .33
2	Expense Worry	-	Effect (Con. Interval) N Deg. Freedom <i>p</i> -value	.14 (-.07 – .36) 1000 952 .18	.09 (-.13 – .30) 1000 953 .43	.12 (-.08 – .33) 1000 953 .23	.12 (-.04 – .28) 3000 999 .13
Panel 3: Parent Psychological Distress							
3	Perceived Stress Index	-	Effect (Con. Interval) N Deg. Freedom <i>p</i> -value	.51 (-.28 – 1.31) 1000 952 .21	.44 (-.33 – 1.21) 1000 953 .26	.76 (-.14 – 1.66) 1000 953 .10	.60 (-.04 – 1.23) 3000 999 .07
3	Parenting Stress Index	-	Effect (Con. Interval) N Deg. Freedom <i>p</i> -value	.50 (.04 – .95) 1000 952 .03	.53 (.06 – .99) 1000 953 .03		.52 (.12 – .91) 2000 999 .01
3	Maternal Depression (PHQ-8)	-	Effect (Con. Interval) N Deg. Freedom <i>p</i> -value	.23 (-.30 – .77) 1000 952 .39	.33 (-.19 – .85) 1000 953 .22	-.03 (-.56 – .50) 1000 953 .90	.18 (-.23 – .59) 3000 999 .39
3	Maternal Anxiety (GAD-7)	-	Effect (Con. Interval) N Deg. Freedom <i>p</i> -value		.30 (-.21 – .81) 1000 953 .24	.19 (-.33 – .72) 1000 953 .47	.25 (-.18 – .69) 2000 999 .25
3	Maternal Anxiety (Beck)	-	Effect (Con. Interval) N Deg. Freedom	1.57 (.60 – 2.55) 1000 952		.00 (-1.00 – 1.01) 1000 953	.77 (-.08 – 1.62) 2000 999

Poverty Reduction and Family Processes

			<i>p</i> -value	.00		.99	.08
3	Physiological Stress (Ln Hair Cortisol)	-	Effect (Con. Interval) N Deg. Freedom <i>p</i> -value	.01 (-.26 – .28) 674 627 .92			.01 (-.26 – .28) 674 673 .92
Panel 4: Interparental Relationship Quality							
4	Co-Parenting Quality	+	Effect (Con. Interval) N Deg. Freedom <i>p</i> -value	-.39 (-.88 – .09) 790 742 .11	-.35 (-.81 – .11) 745 698 .14		-.35 (-.75 – .05) 1535 860 .08
4	Relationship Quality Index	+	Effect (Con. Interval) N Deg. Freedom <i>p</i> -value	-.31 (-.95 – .32) 674 627 .34	-.31 (-.79 – .17) 590 544 .20	-.59 (-1.15 – -.04) 879 832 .04	-.40 (-.80 – -.00) 2143 974 .05
4	Ever cut/bruised/seriously hurt by partner	-	Effect (Con. Interval) N Deg. Freedom <i>p</i> -value	-.02 (-.07 – .02) 674 627 .35	.01 (-.01 – .04) 590 544 .33		-.01 (-.03 – .02) 1264 877 .69
4	Frequency of Arguing	-	Effect (Con. Interval) N Deg. Freedom <i>p</i> -value	-.04 (-.21 – .13) 674 627 .68	.10 (-.05 – .25) 590 544 .19		.04 (-.08 – .16) 1264 877 .52
Panel 5: Parenting Quality							
5	Parent-Child Activities Index	+	Effect (Con. Interval) N Deg. Freedom <i>p</i> -value	.41 (.07 – .76) 1000 952 .02	.41 (.02 – .80) 1000 953 .04	.36 (.03 – .69) 1000 953 .03	.39 (.11 – .67) 3000 999 .01
5	Parent-Child Interaction (PICCOLO)	+	Effect (Con. Interval) N Deg. Freedom <i>p</i> -value	.44 (-.56 – 1.44) 674 627 .39			.44 (-.56 – 1.44) 674 673 .39
5	Spanking discipline strategy	+	Effect (Con. Interval) N Deg. Freedom <i>p</i> -value	.02 (-.03 – .06) 674 627 .45	-.05 (-.10 – -.01) 1000 953 .03	-.03 (-.08 – .02) 1000 953 .27	-.03 (-.06 – .01) 2674 999 .14

Note: Each block of rows presents for each outcome, the raw treatment effect with confidence intervals in parentheses; number of observations and degrees of freedom; and the *p*-values. The estimates are calculated with multiple imputation by chained equations, or MICE, using linear regression and predictive mean matching and imputing 20 datasets. For some outcomes, the multiple imputation only imputes missing values within the valid sample, which indicates the sample that is supposed to answer the question for the outcome. For example, the relationship quality is supposed to ask a participant who has a partner. The ITT estimates come from regressions with site fixed-effects, controlling for baseline covariates, child age at interview, and phone interview status. We report the degrees of freedom which is computed as the sample size minus the number of parameters estimated in the model. This statistic is complicated in the pooled sample because we cluster the standard error to adjust for non-independence. The *p*-value comes from analyses that do not correct for multiple outcomes. For simplicity, we report the default degrees of freedom reported in most software which is the number of clusters minus one. The Pooled column present estimates from analyses that pool observations across ages, adjust for age indicators, and cluster the standard error at the individual level. Preregistered, hypothesized directions of the intervention effects are presented with “+” or “-” for directional increase or decrease in the outcome, respectively. Household incomes across all years are inflation-adjusted to 2019 dollars, and the poverty line is based on the 2019 U.S. Census poverty threshold. Income-to-needs is the household income divided by the poverty line for a given family size and composition. Income and income-to-needs have been truncated at the 99th percentile. PHQ-8=Personal Health Questionnaire Depression scale. GAD-7=General Anxiety Disorder-7. PICCOLO=Parenting Interaction with Children: Checklist of Observations Linked to Outcomes.

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