

User Guide for the BFY Age-1 Data collection

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INTRODUCTION:

About this User Guide

This User Guide is for secondary analysts using the one-year follow-up data collected by the Baby's First Years project. For full information on the study's design and Baseline data collection, please see the "User Guide for the Baseline Data Collection" available on the study's [ICPSR's website](#).

We begin this User Guide with a brief description of the Baby's First Years project, followed by additional information about the Age-1 data. The Age-1 data are follow-up data collected approximately 12 months after Baseline data collection, timed to coincide with the focal child's first birthday. We then describe noteworthy features of specific variables important for analysts.

The current Age-1 data deposit includes

- this User Guide document;
- Age-1 survey instruments in English and Spanish;
- Age-1 data file that combine survey data and direct measure of hair cortisol levels;
- STATA .do file that creates the Age-1 data file; and
- ICPSR's electronic and pdf codebooks.

In the future, more elements of the Age-1 data (e.g., data from electroencephalography (EEG)) will become available with the relevant documentation.

The Age-1 deposit and documentation for the study differs from Baseline data documentation. For the Baseline data, we produced a codebook pdf file that included additional notes for specific variables for secondary users. Additionally, we included a separate section in the user guide entitled "Noteworthy Features of the Data that All Analysts Should Know About", detailing idiosyncratic features important for secondary analysts. However, in this Age-1 deposit, we do not provide a separate codebook because ICPSR provides an electronic and pdf codebook. Instead of having a single "Noteworthy Features" section, we distribute this content across several sections that follow the structure and sequence of the survey instrument.

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Title of the Study

Baby's First Years (abbreviated here as "BFY"; the study is also known as "Household Income and Child Development in the First Three Years of Life")

Funding Sources

Source	PI	Grant number
National Institutes of Health	Duncan	R01HD087384
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Data Collector

The Survey Research Center (SRC), Institute for Social Research, University of Michigan, Ann Arbor, Michigan, under a contract from the University of California, Irvine, running from September 2017 through August 2022. Data collection for Baseline data began in May 2018 (exact date suppressed to preserve participant anonymity); data collection for Age-1 began in July 2019. SRC data collection operations are overseen by: Stephanie Chardoul, Director of Survey Research Operations and Piotr Dworak, Senior Survey Specialist, Survey Research Operations.

PROJECT DESCRIPTION:

Summary description of the intervention and its data collection plan

The overall goal of the Baby’s First Years study is to assess the causal role played by household income in affecting children’s early cognitive, socio-emotional, and brain development. Recent advances in developmental neuroscience suggest that experiences early in life have profound and enduring impacts on the developing brain. Family economic resources shape the nature of many of these experiences, yet the extent to which they affect children’s development is unknown. The Baby’s First Years project is the first randomized controlled trial to provide estimates of the causal impacts of unconditional cash gifts on the cognitive, socio-emotional, and brain development of infants and toddlers in low-income U.S. families.

Specifically, 1,000 mothers of infants with incomes below the federal poverty line were recruited in 12 birth hospitals in four diverse U.S. communities and began to receive monthly cash gift payments by debit card. Mothers were initially told the gifts would last for the first 40 months of their child’s life, but we have secured funding to continue the payments for at least an additional year (i.e., for a total of 52 months). Parents in the high cash gift group (n=400 in the study sample) are receiving a cash gift of \$333 per month (\$4,000 per year), while parents in the low cash gift group (n=600) are receiving a nominal monthly gift payment of \$20 (\$240 per year), also for 52 months.

In order to measure the impacts of the unconditional cash gift income on children’s cognitive and behavioral development, we are assessing high and low cash gift group differences at ages 3 or 4 (and, for a subset of measures, we capture interim development at ages 1 and 2) in measures of cognitive, language, memory, self-regulation, and socio-emotional development. In order to understand the processes by which child impacts emerge, we are measuring a host of family process measures summarized in our pre-registration chart included in Appendix Table 1.

Our four data collection points are referred to as: “Baseline”, “Age-1”, “Age-2,” “Age-3” and “Age-4.”

Preregistration

We preregistered hypotheses for data collected at child ages 1, 2, and 3 with clinicaltrials.gov within a month after recruitment began (May, 2018). In September 2018 we preregistered hypotheses with the Registry of Effectiveness Studies. We submitted a revised set of hypotheses in July, 2019 – which was just before we began collecting age-1 impact data collection – to clinicaltrials.gov, the [Registry of Effectiveness Studies](https://www.effective-studies.com/) and the [AEA RCT Registry](https://www.aea-rct.org/). Additionally, we submitted a revised set of hypotheses in July 2020 and June 2021– which was before we began Age-2 and Age-3 impact data collection, respectively. A summary of our Age-1 preregistration is given in Appendix Tables 1 and 2.

Our core pre-registered empirical approach for deriving the preregistered impact estimates will use the pooled data across the four sites to compare family process and child outcomes for the pooled cross-site \$333/month group with the \$20/month groups. Because of the random assignment design, the average of an outcome for the low cash gift group corresponds to the counterfactual state outcome that would have occurred, on average, for the high cash gift group had they not been offered the additional \$313/month income supplement. Therefore, differences in outcomes for the high compared with the low cash gift group can be interpreted as estimates of causal treatment effects of the \$313/month higher income (regardless of how high cash gift group mothers use the cash gift). These are intent-to-treat estimates. Because randomization took place within each of the four sites, we recommend that all impact regressions include site fixed effects.

UNIVERSE, SAMPLE AND SAMPLING PROCEDURES; SUBSTANTIVE, TEMPORAL, AND GEOGRAPHIC COVERAGE OF THE DATA COLLECTION:

Universe of the BFY study sample

Between May 2018, and June 2019, 1,003 mothers with incomes below the poverty threshold in four metropolitan areas in the United States (New York City (abbreviated NY), the greater New Orleans metropolitan area (LA), the greater Omaha metropolitan area (NE), and the Twin Cities (MN)) were recruited in 12 hospitals shortly after giving birth. “Recruited” means that they were deemed eligible based on the information they provided in a screening interview, consented to and participated in a Baseline interview, and were offered and agreed to receive a debit card with a randomly assigned monthly cash gift deposit. All consent forms and data collection instruments for the Baseline and Age-1 data collections are available on the study website www.babysfirstyears.com. The Institutional Review Board of Teachers College at Columbia University served as the single IRB of record for most of the study sites. To meet local requirements, stand-alone IRB reviews were conducted in 5 of the 12 recruitment hospitals.

The construction of the sample is detailed in the Baseline CONSORT diagram (Appendix Figure 1) and in the User Guide for the Baseline Data. The final study sample consisted of 1,000 mothers, all of whom were targets of our Age-1 interviewing efforts and will be targets of our data collection efforts at focal child ages 2, 3, and 4¹.

Intervention Compliance

Although imperfect compliance is a concern in some field experiments, it does not appear to pose a significant threat in the BFY design. All mothers were randomized to receive either \$333 or \$20 monthly deposits on their cards. One possible concern are problems using the card. Reports from calls made to the BFY hotline suggest that mothers did not find it difficult to use the card, and any problems or reports of missing cards have been addressed immediately. Additional relevant information about card usage are compiled in a card transaction data (not currently scheduled for public release) for the mothers (n=945) who consented to share this information. Only 2 percent of the 945 (n=21) failed to use the card in the first 12 months. As of July 1, 2021, 12 of the 21 had used their card, leaving only 9 mothers with possible access problems. We do not know how many of these 9 mothers were unable to access their cards or were using the cards as a kind of savings account. At any rate, the number of participants who never accessed the funds is extremely low.

Age-1 follow-up sample

Between July 2019 and July 2020 we attempted to contact as many of the 1,000 study participants as possible and interview them close to their children’s first birthdays. We completed interviews with 931 participants. Our performance on the Age-1 data collection is summarized in the Age-1 CONSORT diagram in Appendix Figure 1.

Across the entire year, 6 mothers refused to be interviewed, 50 mothers were not found or were unavailable to be interviewed, and 3 mothers started but immediately stopped the interview. A small number of mothers were ineligible for the Age-1 follow-up, including sample exclusions due to infant deaths, (4) mother-child separations (2), and maternal incarcerations (4). Adjusting the denominator for ineligibility, our response rate for the Age-1 data collection was 94%.

In both the Baseline and Age-1 data collections, we sought the mother’s consent to collect state and local administrative data regarding parental employment, utilization of public benefits, such as Medicaid and Supplemental Nutrition Assistance Programs (SNAP), and involvement in child protective

¹ Target samples for follow-up waves of data collection may vary if participants are excluded from the study. These cases will be detailed in CONSORT diagrams. They could include cases of mothers or children who died or mothers who decided to be excluded from the study and stop receiving the cash gift.

services. Future data releases may include these administrative records for mothers who provided consent². Participants were pre-paid \$50 before the Age-1 interview and received an additional payment of \$50 at the end of it. Some mothers also received an additional small payment as an incentive to complete the interview if scheduling became very difficult.

Age-1 survey data collection included measures of child’s health and development, maternal health, family income, and family life, among others. In addition to the survey, three other types of data were collected: measures of hair cortisol levels taken from mothers who consented to provide a hair sample (included in the current data release); measures of language use and parent-child interactions by recording a mother and child playtime activity; and infant brain activity by using mobile EEG technology.

Adjustments to Age-1 follow-up due to the COVID-19 pandemic.

Out of concern for the safety of our participants and interviewers during the COVID-19 pandemic, we stopped all in-home data collection on March 12, 2020. We switched to telephone interviews which were conducted by the same interviewers using the same interviewing software. The first telephone interviews began on March 14, 2020 – two days after we stopped visiting families in their homes. Telephone-based field work continued apace through the end of June 2020 – which was when the Age-1 data collection was originally scheduled to end. All told, we completed 605 age-1 interviews in person and 326 by phone.³

Although the switch from in-home to telephone interviews limited the amount of data we were able to collect, our 75-minute telephone interviews continued to provide information on 34 of the 42 pre-registered family and child outcomes targeted in our Age-1 interview. Our Age-1 sample for assessments that needed to be administered in-person are also smaller than originally planned. These assessments are: EEG-based measures of child brain function; a video recording of mother/child play task; a hair sample for a biological measure of maternal stress; and several sensitive questions that were part of the survey but collected using an Audio-CASI (computer-assisted self-interviewing) approach, where mothers responded to the pre-recordings of questions read to them over personal headphones.

It is also possible that switching to telephone interviews influenced which mothers were willing to respond to the interviewer’s call, leading to differences in the sample of mothers who responded in-person, pre-pandemic, vs. by phone, during the pandemic. Overall, the baseline demographic characteristics of these groups do not differ significantly from one another (p-value=.653), as shown in Appendix Table 3. However, at the time of the switch from in-person to phone interviews, the running response rate of mothers ready for Age-1 Interview among the high-cash gift group (78%) was considerably higher than the response rate among mothers in the low-cash gift group (67%).

Given the switch from in-person to telephone interviewing mode, the fact that a number of measures could not be taken over the phone and the differential response rates between the high- and low-cash gift groups when in-person interviews ended, analysts should carefully consider the possible impacts of the onset of the pandemic in their analysis plans.

Please see section AGE-1 SAMPLE VARIABLES for how these sample details are captured in the dataset.

² Participants in Nebraska were required to provide consent using an updated process at Age-1. Due to the change in Age-1 data collection from in-person to phone at the start of the pandemic, not all participants were able to provide this, yet.

³ Of the 605 mothers who began the survey in-person, there were 7 instances in which the interview was completed in a separate session over the phone. The “Age-1 Sample Variables” section of the User Guide provides more detailed information about the phone interview measures.

Age-1 sample group equivalence

As we did when collecting Baseline data, we sought to create equivalent high- and low- cash gift groups when we collected the Age-1 data. At the end of the Age-1 data collection (n=931), the completion-rate gap was 4.5 percentage points, but the fact that the completion rate in both gift groups was very high – 91.3% and 95.8% for the low- and high-cash gift groups respectively – leaves relatively little room for differential nonresponse bias. We investigated whether the low- and high-cash gift group members that were successfully interviewed as part of the Age-1 survey were similar on the same set of baseline measures used to assess baseline equivalence. Appendix Table 4 shows that of the 26 individual tests, two were statistically significant at the $p < .05$ level. The p -value of a joint test of orthogonality across all baseline predictors is .385, which means that the null hypothesis of no group differences cannot be rejected at conventional levels of statistical significance. Just as the high and low cash gift groups were very similar at baseline, the two groups appear to be very similar at Age-1 as well.

AGE-1 DATA AND DOCUMENTS

Age-1 files

This *User Guide* provides basic documentation for the Age-1 data collection. Relevant files on deposit are:

- Age-1 data, STATA .dta file: *BFY_age1clean_public.dta*
- STATA script file (.do file) that cleans the Age-1 data: *BFY_age1cleanpublic.do*
- Age1 survey instrument, .pdf file: *BFY_Age 1 Instrument.pdf*

Other data collection instruments:

- The Baseline survey instrument can be found at the ICPSR website (<https://www.icpsr.umich.edu/web/DSDR/studies/37871/datadocumentation#>), *Baseline_Instrument_BFY.pdf*.
- All data collection instruments can be found on the study website (www.babysfirstyears.com). This includes the Baseline screening instrument, consent forms and the qualitative sub-study Interview Guide.

The Age-1 survey instrument was administered verbally at the respondent's home or by telephone, with responses record by the interviewer on a laptop computer. All prompts and visual aids used for items are described underneath the item in the Age-1 survey instrument.

Users should note that some sections of the STATA script cannot be run by analysts because they involve personally identifiable information that cannot be made publicly available. The purpose of releasing the code is to provide as much transparency, clarity, and reproducibility as we can.

Version dates

There were minor changes in the Age-1 survey throughout its administration. These are reflected in the variable `versiondateal`, which contains seven unique values corresponding to seven versions of the Age-1 instrument. The minor differences in the versions of the Age-1 instrument are described in

Appendix Table 5. The Age-1 survey instrument available on the ICPSR website, *Age1_Instrument_BFY*, is dated June 28, 2019 and is identical to the version in production on July 18, 2019.

Weighting

There was no oversampling of population subgroups and assignment to cash gift group was predetermined by an algorithm embedded in our computer-assisted interview software. Thus, no weighting is necessary to obtain Intent-To-Treat estimates for births to low-income women in the twelve hospitals distributed across four sites. The timing of interviewer shifts in the 12 hospitals was based on administrative convenience rather than any attempt to obtain a formal population sample from the hospitals. The random nature of births across interviewer shifts contributes to the population diversity of the sample.

Unit(s) of Analysis/Observation

The unit of analysis may be the mother, the focal child, the mother/child dyad, or the household, depending on the analysis and the variables.

Frequency Distributions and Weighting

Unweighted univariate frequency distributions are provided for all variables in the ICPSR electronic codebook.

GENERAL AGE-1 DATA CONVENTIONS, DECISIONS, AND PROCESSING

All respondents were asked all questions, unless the questions did not apply to their situation (e.g., mothers who reported that they did not know the identity of the father of their baby were not asked about the father or the father-mother relationship). As with Baseline data, variables in the Age-1 data file are of two types – **raw** and **generated**:

The first type of variables is considered **raw** because they are direct outputs from the Age-1 electronic survey programmed by SRC, the partner organization directing collecting data. The raw data are otherwise unprocessed, with the exception of two minor adjustments: suffix (“a1”) is added to the end of the variable *name* in the dataset (described in more detail in the “Item Naming Conventions” section below) and prefix “[raw]” is added at the start of the variable *label*. The values of these variables follow the conventions in the Screener and Baseline data. For example, SRC has a long-standing practice of coding yes/no responses as yes=1 and no=5. Those 1/5 values are used in the first, “raw” portion of the data file. Exact question wording can be found in the Survey Instrument, with the variable name listed under each question or checkpoint. The order of the variables in the dataset generally follows the order in which the questions were asked in the instrument.

The second – “**generated**” – type of variables is what we generated using the raw data. In addition to simple recoding of values (e.g., yes/no responses are recoded to yes=1 and no=0), we generated pre-registered variables and additional variables that require careful understanding and quality checks of the raw data (e.g., household roster, income, and event history). We provide important details on the data generation process the sections below. Finally, some variables serve as indicators for types of open-ended responses in the dataset but do not appear in the questionnaire.

Personally Identifiable Information (PII)

Personally identifiable information (PII; e.g., date of birth) or potentially PII (e.g., child development measure items specific to child age in months) is protected under Health Insurance Portability and Accountability Act (HIPAA). We refer to HIPAA protected information as PII. We collect PII with the survey, so we have excluded these items in the data file that we deposit to ICPSR. In order to protect PII, these variables have either been removed or converted into a dummy variable that indicate that the mother provided a response. Some of these variables may become available in the future under more restrictive terms. However, as some of these variables can be essential for analysts, in some cases, we generated new variables that partially or completely mask the sensitive information. These variables are HIPAA compliant and useful for analysis (See Table 1). Some of these variables are described in the table below.

Table 1. Masked Personal Information in Age-1 Public Release

Sensitive information	Variable Name(s)	Description
Names (e.g., Mother, Child, Household Member)	respfnamea1 childfnamea1 hhmemnamea_*	Information replaced with a dummy indicator for whether there is a response to each item.
Name (Father)	dadnamefa1	Father names are not provided in the data but this variable contains information such as whether the father is in the household. Please see “DadNameF” of Survey instrument for full details.
Child’s birthdate	monthbirtha1	A "masked" month of birth for each child. This variable consists of 14 values ranging from 17-30 to represent a month between May 2018 and June 2019. Each value corresponds to a distinct birth month but the months themselves are scrambled.
Child’s age at interview	iwdatate_age_mask_a1	Child’s age at the time of the Age-1 interview recoded to a binary indicator for whether the child was at least one-year-old.
Household members’ birthdates	month_a_X dob_mo_a_X	Information replaced with a dummy indicator for whether there is a response to each item.
ASQ Measures (age-specific)	tot_casqlanga1 casqlanga1 casqlangcutoffa1 casqlangbelowa1 casqlangclosea1	ASQ items specific to developmental age period have been dropped, and summary measures are provided.
Interviewer ID	interviewera1	Randomly generated interviewer identification number. (Not linked over time with Baseline)

Missing data

We use the following coding conventions for missing data for both the raw and generated variables:

- .d – don't know
- .r – refused
- .i – index/scale assigned missing because too many items were missing
- . – valid skip

Index/Scale missing data conventions

Generally, a generated scale or index has a value of “.i” if at least half of the individual items are missing or if there are less than 3 non-missing items. In some cases, scales or indices may have a prescribed manner for accounting for missing items, in which case we follow these conventions (i.e., BITSEA). If all the items are missing, the generated variable has a value of “.”.

Item naming conventions

- Raw variables in the data file generally match the variable names in the survey instrument, which are listed underneath each survey item in the instrument file⁴.
- Raw variables use both “mother” and “mom” interchangeably in the variable name.
- Raw variables have a “[raw]” in the variable label.
- For generated variables, we added one of the following prefixes to the variable name:
 - m – Mother item
 - c – Child item
 - hh – Household item
 - nonhh – Children who are legally related to the mother who do not live in the household, including adopted/step/biological children
 - d – Father item
- Generated variables use “mother” and “mom” interchangeably in variable names and use “father” and “dad” interchangeably as well.

Analysts are advised to take as many of their variables as possible from our set of “generated” variables because they tend to be cleaner and easier to use.

⁴ The variable names in the survey instrument excludes the two characters at the end of the variable name that indicate which data collection wave (e.g., a1 for Age-1).

- When we recoded or reverse coded raw items (often part of a composite), we added “- recoded” (or “- reverse coded”) at the end of the *variable label*. We also update the *value label* accordingly. When recoding dichotomous items, we followed the convention of a dummy variable (i.e., 1= yes, 0= no) and did not update the *variable label*.
- See the STATA script *Age1_Dofile_BFY.do*. for all recoding decisions.
- The last two characters of all variables indicate the data collection wave. These suffixes were added to all variables. They are:
 - a0 – Child Age 0 (i.e., gathered at Baseline shortly after the birth of the child; already available on the ICPSR website)
 - a1 – Child Age-1 (gathered around child age 1; this data deposit)
 - a2 – Child Age-2 (gathered around child age 2; not yet publicly available)
 - a3 – Child Age-3 (gathered around child age 3; not yet publicly available)

Treatment of Outliers

In general, we did not change values of variables that appear implausible but not impossible. In the rare occasions when we adjusted outliers, we generated new variables and documented the decisions (see survey specific sections below) so that a secondary analyst will always have both the unadjusted and adjusted variables.

Analysts should check for extreme values on key variables to ensure that they do not drive model estimates.

Survey errors

Multiple errors occurred during survey development and administration, which led to a number of constructs being measured differently than intended. These errors are described in their respective survey section below. The following indices/scales were impacted by these errors:

- Unpaid maternity leave
- Self-employment
- BITSEA
- Food stamps
- Housing quality
- Food insecurity
- Perceived stress scale

Check all that apply questions.

Several sections of the survey include a “check all that apply” type of question. Responses to these questions were stored using a particular method. The survey program created as many placeholder variables as there were options to check, then stored Mother’s *n* checked responses into the first *n* placeholder variables. For example, mothers were asked to check which race they identified with: (1)

White (2) Black/African American (3) Other. The survey program created 3 placeholder variables 1-3 (e.g., `momrace_s_1a1`– `momrace_s_3a1`), but the 1-3 index in the variable name does not correspond to the 1-3 response categories. If a mother checks Black/African American and Other, the first placeholder variable `momrace_s_1a1` would take on the value for Black/African American and the second placeholder variable `momrace_s_2a1` would take on the value for Other. If another mother checks only Other, the first placeholder variable `momrace_s_1a1` would take on the value for Other. This logic is used for all “check all that apply” type of question (e.g., language exposure at home, social service received, etc.)

AGE-1 SAMPLE VARIABLES

In addition to the survey data, the dataset includes administrative variables created by SRC that describe the Age-1 Sample.

- `AnyIwDonea1` indicates that the mother completed the Age-1 survey and is the indicator of the final Age-1 sample.
- `treat` indicates treatment group status (1 = high cash gift group; 0 = low cash gift group);
- `site` is a categorical variable indicating the 4 sites
- `phoneiwa1` indicates whether the Age-1 survey interview was done over the phone as opposed to in-person, which is also a rough indicator for data collected after the onset of the COVID-19 pandemic. For a small percentage of occasions, the survey was conducted over multiple sessions. In rare occasions, the survey was started in-person before the onset of the pandemic and completed over the phone during the pandemic. `phoneiwa1` indicates whether the survey was started on the phone (i.e., the survey is done entirely on the phone if the survey was completed). `phoneiwv2a1` indicates whether the interview was completed by phone (i.e., this includes the few mothers who started the survey in-person but completed the survey by phone). We use `phoneiwa1` in our analysis as a control variable, but none of the results are sensitive to the choice between `phoneiwa1` and `phoneiwv2a1`.
- `iwstartdate` has the date when the survey application was open (i.e., the day survey started) and `iwcurrrdate` has the date when the survey application was last “currently” open (i.e., the day survey ended).
- `iwdateage_mask_a1` is the masked age of the child at the time of the Age-1 interview. It indicates whether the child was at least 12-months.
- `FinalTaskRulea1` is an indicator of the participant’s final case status for Age-1, including reason for non-completion for the 69 mothers who did not complete an Age-1 survey. The variable `FinalTaskRulea1` was constructed by SRC to determine mother’s eligibility for participation and was based on mother’s responses in Section A of the instrument (see details in later sections) and information collected in the process of trying to reach participants. The initial values in the raw data for `FinalTaskRulea1` included “AcceptedComplete”, “AcceptedPartial”, “ChildAdopted”, “ChildDeceased”, “NotAcceptedComplete”, “NotAvailable”, “NotEligible”, and “Refusal”. We recode some of these values to make it easier to understand. The categories allow analysts to crosswalk case status with the Consort Diagram in Appendix Figure 1. In particular, we recoded the value “NotEligible” to “Incarcerated” to clearly denote that the mother is incarcerated at the time of the Age-1 interview and not eligible to participate. We recode “NotAcceptedComplete” to

“Interrupted” to more accurately reflect that these cases completed very few items and are not included in our Age-1 analytic sample due to nonresponse. We recode the item “ChildAdopted” to “NotWithChild.” Finally, we reclassified some of the cases after thorough review and in consultation with Survey Research Center to accurately reflect the final status.

IMPORTANT DATA DETAILS BY SURVEY INSTRUMENT SECTION

What follows are notes about raw and generated variables in the data, organized by survey section as seen in the instrument file. For ease of use with the Age-1 survey instrument, we follow the organization in the instrument, which does not always follow alphabetical sequence of the section labels.

We recommend that users read both these notes and the instrument for a complete description of the survey data. We also recommend that users review the STATA script for even more precise details. We assume users will refer to the pre-registration tables in Appendix Tables 1 and 2 of this user guide for details about how pre-registered outcome measures were constructed and what the source instruments were, so we do not re-iterate the same details in this section.

Below is a list of survey sections:

Age-1 Survey Sections

Section A: Intro, Voluntary Statement

Section B: Mother Demographics

Section C: Household Roster

Section D1: BioDad

Section D2: Father's Demographics

Section D3: Current Relationship

Section D4: AudioCASI (including items from: Section D Romantic Relationships; Section O Discipline Strategies; Section Q Maternal Health)⁵

Section D5: Father Involvement

Section E: Residential History, Housing Quality

Section F: Residential History and Neighborhood

Section G: Year in Review (life history)

Section H: Child Health (sleep)

Section I: Social Emotional Development (BITSEA)

Section J: Child Home Language Exposure

Section M1: Maternal Health

Section K: Income and Receipt of Public Program Benefits

Section L: Expenditures and Economics Stress

Section M2: Maternal Health (same questions as in M1 except randomized to appear after questions on economic stress)

Section N: Household Atmosphere

Section P: Parenting Stress

Section Q: Maternal Health

Section R: Language Development

Section S: Hair Cortisol Questions

Section T: Additional Info

⁵ Items considered sensitive were grouped together in the AudioCASI portion of the interview, which is Section D4 in the instrument. Because sensitive items may have originated in various survey sections, Section D4 contains items related to Section D (romantic relationships), Section O (discipline strategies), and Section Q (maternal health). In the User Guide, we combine all AudioCASI items into Section D4, following the organization of the instrument.

Section-by-Section Variable Details

Section A: Intro, Voluntary Statement

- **About this Section:** This section is used to determine which version of the survey instrument, if any, would be administered to the mother. The full version of the survey is “Instrument A” and the shortened version that exclude child-focused items is “Instrument B”.
 - Instrument A is administered to the mother if the child is well (i.e., not hospitalized) and lives with the mother at the time of the Age-1 interview. Instrument B is administered to the mother if the child has an out-of-home placement (i.e., is in foster care). Instrument B was administered to just two participants at Age-1 and only one of the two completed the survey. Please refer to the survey instrument document to see which items were excluded from Instrument B.
 - The survey instrument was not administered if the child lived with adoptive parents, the child was hospitalized or otherwise not well, if the mother was institutionalized, or if the child had passed away. Analysts can consult the consort diagram (Appendix Figure 1) and the variable `FinalTaskRulea1` as described in section AGE-1 SAMPLE VARIABLES of the User Guide for more information.

Section B: Mother Demographics

- **About this section:** In this section, we first asked about mother’s ethnicity and then their race. Section D2 asked about the focal child’s biological father’s demographics in the same way.
 - Please note that race/ethnicity questions were asked differently in Baseline and at Age-1. At Baseline, mothers were first asked about race and then their ethnicity. As the ordering may have affected how mothers responded, Age-1 asked about ethnicity first then race. Additionally, at Age-1, mothers who identified as Hispanic, Latino, or Spanish were also asked about their specific ethnic identity (e.g., Mexican); and at Age-1 mothers were given 2 race options (White, Black) and an “other” option with open response, whereas at Baseline mothers were given 4 (add Asian, American Indian) race options and an “other” option with open response.
 - Most mothers provided consistent responses about their racial and ethnic identities at Baseline and Age-1. Some of the mothers who identified as “Other” race and Hispanic ethnicity at Baseline identified as Hispanic ethnicity and as Black at Age-1 (e.g., mothers who identified being Dominican).
- **Raw Variables:** Mothers were able to select more than one race or specific ethnicity. Please see subsection “Check all that apply” for details on how raw variables get stored for these types of questions.
- **Generated Variables:**
 - We generated `mracea1` that combines race and ethnicity to create the categories used in many analyses and a dummy for each of these categories.
 - non-Hispanic White only `mwhitea1`

- non-Hispanic Black *mblackal*
- non-Hispanic Other Race only *mraceotheral*
- non-Hispanic Multiple Race *mracemultipleal*
- Hispanic regardless of Race *mhispanical*
- We also generated an expanded version race-ethnicity category (*mraceexpal*) which is effectively a cross-tabulation of Race and Ethnicity in one variable, and we also generated dummies for each specific ethnic identity (e.g., Cuban) for mothers that identified as Hispanic or Latinx.

Section C: Household Roster

Note: the household roster section is organized differently than other section because of its length and complexity. We also do not use `_a1` suffix in the variable names as we do in other sections so users can focus on the unique features of the household roster variable name.

Overview

The household roster section of the Age-1 survey asked the mother to provide basic information about each household member that she had named during the previous year’s Baseline survey and about each new member that was added to her household since Baseline that currently live with her at Age-1. Basic information about each member included name, gender, date of birth, relationship to the mother, whether they contribute to household income, and, when applicable, whether they still currently live in that household. In this section of the user guide, we describe the structure and processing of raw household data and our generated household variables. Personally identifiable information (e.g., name or date of birth) from the roster have been removed from the publicly released dataset.

Raw Data

Age-1 Survey Instrument’s section C carefully documents what household roster questions were asked, in which order, and with what skip logic. As such, we refer the users to the instrument documentation for complete details of each survey item. However, survey programming of the household roster section was complex, so the raw data exported from the survey program requires further explanations for users interested in using the raw data or in examining our cleaning procedures. Users who want to focus on understanding and using our generated household variables can skip to the subsection “Generated Variables” below.

There are three key phases of the household roster survey programming relevant to processing the raw data: (1) preloading of a subset of Baseline roster information (Age-1 survey asks questions about previously named household members from Baseline); (2) administration of Age-1 rostering (in which the Age-1 survey questions are asked of old and new household members); and (3) storing of the pre-loaded and newly collected roster information into variables with some variable naming conventions. Each phase presented some complications that required our attention for cleaning, which we describe in detail. We begin by describing the naming conventions of the raw variables and how the Age-1 roster information were stored into variables by the survey program so that you understand the raw variables that you see in the dataset.

Raw Variable Naming and Storing Conventions

Distinguishing variables for different household members

The survey program repeated the household roster question sequence for each old and new member (apart from the mother and child) and assigned each member a roster position which was used in the variable name. For example, the first person on the household roster would be assigned position 1, and so numeric “1” would be used at the end of each household variable name (e.g., hhmemname_1 is short for household member name of person in position 1, hhmemgender_1 refers to gender of person in position 1, and so forth). The survey program at Age-1 used positions 1-25 separately for adults and for children such that there is position 1 for adults and position 1 for children. Not all positions get used, and these positions are not fixed across rosters (explained below).

Distinguishing variables from different rosters

Table 2 presents a crosswalk of the pre-loaded Baseline household variables and the newly collected Age-1 household variables for each piece of the household roster information. To distinguish between Preloaded Baseline Survey variables, Age-1 Survey Adult variables, and Age-1 Child variables, the program sometimes used a different “stem” in the variable name and/or a different range of roster position numbers (e.g., 26-50 instead of 1-25), or what we will refer to as the position “suffix”. For example, to distinguish the household member name variables between the Preloaded Baseline Roster (adult and child) and Age-1 Adult roster, the program used position suffix 1-25 (e.g., hhmemname_1) and 26-50 (e.g., hhmemname_26) respectively; to distinguish between member name in Age-1 Survey Adult roster and Child roster, variable stems hhmemname and childhhmemname were used, respectively. Different rules were applied to distinguish the 3 rosters, depending on the roster information. See Table 2 for a detailed display of the rules. For example, while Adult and Child rosters of the Age-1 Survey have a different variable stem for household member name, they share variable stem for member month of birth. Also, you will notice that only a single roster of adults and children was preloaded from the Baseline survey. This is because the adult and child rosters were merged and forced to use the same variable naming conventions during the pre-loading process. This merging has important implications for understanding roster positions. As an important side note, the name variables had been masked even prior to most data cleaning procedures and made available only to a select staff in secure servers. The variable itself is still made available with a binary indicator of whether the surveyed mother provided a response.

Relative Roster Positions

As can be seen from Table 2, some variables use position suffix that ranges 26-50. The relative positions of 26-50 map onto positions 1-25 such that position 26 correspond to position 1, 27 to 2, 28 to 3, and so forth. For example, childhhmemname_1 and dob_mo_26 are variables that belong to the same member.

Variable stems hhothadult and hhothchildren range only from 1-24. These variables refer to the question where the survey administrators asked the participating mother if there are other adults or children in the household who were either unnamed in the Baseline roster or unmentioned during the Age-1 survey. The first time this question is asked, the information is stored in otheradultinhh or otherchildinhh which do not have a position suffix. You can think of these variables as having position suffix of 0 (zero) on variable stems hhothadult and hhothchildren, giving them an effective range from 0-24 with 25 positions. Adjusting the 0-24 positions by adding 1, makes these position line up with the 1-25 relative positions used in other variables.

When Baseline Survey roster data were pre-loaded for the Age-1 survey, the adult and child rosters were merged into a single roster which used the same variable naming conventions. The child roster was appended to follow the adult roster. For example, if there were 3 adult members and 2 child members in the household at Baseline and there were no changes to the household by Age-1 survey, the preloading process placed the 3 adults into positions 1-3 and the 2 children into positions 4-5 of the Preloaded Baseline roster. Except for a few special cases, these relative positions in the preloaded Baseline roster are retained through the Age-1 Survey Adult and Child roster. See Table 3.a for a stylized example. In the presented example, Age-1 child roster positions 1-3 remain empty because children's starting position was 4.

Tracking existing members that leave and new household members

During the Age-1 Survey administration, for each named member in the Baseline household roster the survey program asked the mother whether that member was still in the household or if they left the household. At the end of reviewing the Baseline household roster, the survey program asked whether there were other adults or children in the household living with her now at Age-1 who did not live with her at Baseline. If there were other members, the survey proceeded with the sequence of household roster questions and then repeated until the mother confirmed that there were no other adults or children in the household. Table 3.b shows a stylized example of how the information of leavers and new members were stored. When an existing member from Preloaded Baseline Survey was reported as having left the household by the Age-1 Survey, that member continued to retain their position. For example, if Adult C in position 3 of the Baseline roster left the household and a new adult, Adult D, entered the household, position 3 of the adult roster remained reserved for this adult that left and Adult D was slotted into position 4 of the adult roster. This procedure of handling leaving and entering household members was identical for children. There were a handful of exceptions to this procedure, and we discuss them in later sections.

Survey Programming that Affected Raw Variable Creation

There were a couple of survey programming decisions that affected the preloading of the Baseline roster and implementation of the Age-1 Survey rostering based on the nature of the Baseline Roster information. First, older children who became legal adults (i.e., 18 years old) by the Age-1 Survey data collection were part of the Preloaded Baseline Roster but placed into the Age-1 Adult Roster, as opposed to retaining their position in the Age-1 Child Roster. However, these children who aged into adults were not asked the first question of the rostering sequence for existing members, "Is [this member] still living with you?", and instead were given a missing value to the corresponding variable, `hhmemlivingwith`.

Second, in a small number of cases, the mother did not share the name of the household member on the Baseline Survey and only their characteristics (e.g., gender) were collected. Although these unnamed household members were part of the Preloaded Baseline Survey roster, the Age-1 Survey program treated these unnamed household members as if they were not part of the roster and did not follow the usual sequence of roster questions for existing members. As a result, for these cases, it may appear that mothers reported that there was a new child or adult in the household when, in fact, the same unnamed individual remained in the household and was just being named during the Age-1 Survey. For these handful of special cases, we compared the characteristics of the unnamed member during Baseline and characteristics of a new, named member at Age-1. When the information obviously matched (i.e., all characteristics matched

exactly or nearly exactly), we presumed that these were the same individuals and made corresponding adjustments to the generated household variables that count who is new. Otherwise, we did not assume them to be the same individual.

In the following sections, we describe how we dealt with these programming decisions to get to an accurate count of household members.

Counting

The immediate objective of understanding and processing the raw variable was to create various household roster counts, such as the number of household members, adults, or children:

- at Baseline
- at Baseline that stay through Age-1
- at Baseline that leave before Age-1
- at Age-1
- at Age-1 that are new to household since Baseline

There are other variants of household roster counts (e.g., number of grandparents or number of members contributing income) which were generated, and they all rely on the same cleaning procedures and methods described in this section.

Basic method of counting

The basic strategy of counting was two-fold. First, we created “individual member flags”—a 0/1 binary variable for each roster position—to indicate whether the given member fits the criteria of interest (e.g., is a Baseline member who stayed through Age-1). This created a set of 25 flags, one for each roster position. Second, we took the sum of the 25 flags to generate a subtotal count of interest. Typically, we created counts for adults and children separately, then summed across the two counts to get the total household counts. Any exceptions to these procedures are described below.

Baseline. Starting with the Preloaded Baseline Roster, we created individual member flags, indicating whether a member was part of the Baseline Roster. The rule was to assign a 1 if there was any non-missing value in the household roster variables (e.g., name, gender, relationship to mother, month of birth, etc.) in the given position number. We took the sum of the flags to directly count the *total* number of household members (i.e., adults and children combined) at Baseline. We were not able to directly count adults and children separately because the two rosters were merged during the preloading process, but we were able to derive this number because we could count how many of the household members from Baseline stayed through Age-1 Survey or left before Age-1 Survey, separately for adults and children.

Baseline that stayed through Age-1. We created individual member flags, indicating whether a member was part of the Baseline Roster and stayed through Age-1. The rule is to assign a 1 if the mother reports that the member was still living with her. We summed across the flags the separately count the number of children and adults.

Baseline that left before Age-1. We created individual member flags, indicating whether a member was part of the Baseline Roster and left before Age-1. The rule was to assign a 1 if the mother reported that the member was NOT still living with her. We summed across the flags and then separately counted the number of children and adults.

Age-1. We created individual member flags, indicating whether a member was part of the Age-1 Roster using a similar method as Baseline roster with two modifications to the rule. The rules were to assign a 1 if there was any non-missing value in a selection of Age-1 household roster variables (i.e., gender, relationship to mother, contributes income, and age; for the child roster, whether employed) in the given position number; and did NOT report having left the household since Baseline. The reason for looking at select Age-1 household roster variables was because some variables were non-missing for household members who were not present at Age-1. Name of the member at Baseline was loaded into the Age-1 member name variable. When date of birth information of the member was missing at Baseline, the survey program asked the mother to provide this information during Age-1 Survey even if that member was no longer living there. The reason for conditioning on whether the member was NOT reported to have left the household since Baseline is that some household roster questions were asked about the biological father of the focal child regardless of whether he was still present in the household at Age-1 Survey. We summed across the flags the separately count the number of children and adults.

Age-1 that is new. We created individual member flags, indicating whether a member that was part of the Age-1 Roster was a new member. The rule was to assign a 1 if the mother reported that there was someone else living in the household, which indicates that this member in the corresponding position was a new member unnamed in the Baseline Roster. We summed across the flags that separately counted the number of children and adults.

Checking internal consistency

We used two types of methods to check the reliability of our counts. First, as described above, we have direct counts from the snapshot of the household roster at the time of the Baseline Survey and Age-1 Survey and the household flow counts that track members who leave, stay, and newly enter the household in between the two snapshots. Algebraically, we can use a different combination of flow counts and one of the snapshot counts (e.g., count of Baseline members) to derive the other snapshot count (e.g., count of Age-1 members) to check how internally consistent our counts are. For example, the number of Age-1 household members can be derived by taking the Preloaded Baseline roster counts, subtracting the number of members that leave, and adding the number of new members that enter the household. Likewise, we can add the number of members who stayed between Baseline and Age-1 Survey and the new members at Age-1 Survey. We used different algebraic combinations to check the internal consistency of our household-level counts.

Second, we checked the reliability of our household flow indicators (i.e., stay, leave, enter) at the household member level by comparing the household roster position information across the two survey snapshots. As explained above (see subsection Relative Roster Position), the relative roster positions were stable and permanent, excluding a few exceptions. For example, an Adult at Position 1 in the Baseline Roster that had been flagged as having “stayed” in the household should reappear in Position 1 of the Adult Roster in the Age-1 Survey (See Table 2C.a for a stylized example). Likewise, Adult 1 who had been flagged as having “left” the household should not reappear in Age-1 Survey and Adult 1 Roster in the Age-1 Survey should remain empty (See Table 2C.b for a stylized example). Using a series of several Boolean expressions, we could verify whether flow counts agreed with what the comparison of snapshot records suggested.

We found disagreements for a small proportion of our records because of two peculiar types of cases that we could systematically adjust for: (1) children who turned 18 years old and became a legal adult by Age-1 Survey and (2) members that the mother mentioned but did not name during Baseline Survey6. There were also a handful of special cases requiring manual adjustments, which are described below.

Counting Adjustments

Systematic Adjustments

When child members in the roster at Baseline turned 18 and became a legal adult, the survey program treated them differently during survey administration. They were still loaded as a child in the Preloaded Baseline Roster, but slotted into the adult roster for the Age-1 Survey implementation (this is not visible in the stored raw data). They were not asked the household “flow” questions. We programmed a search for child household members in the Preloaded Baseline Roster who unexpectedly did not reappear in the Age-1 child roster (i.e., unexpected because they were not indicated to have left the household) but unexpectedly there was a new adult in the Age-1 Adult roster (i.e., unexpected because they were not indicated to be a new household member) that matched their year of birth. We also visually examined that other member characteristics matched between rosters to confirm this phenomenon and adjustment. We ensured that these child members who recently became adults contributed a 1 for staying and 0 for leaving or being new to the household to adjust the counters accordingly. Using similar logic, we identified children who recently became adults and left the household, and ensured they were contributed a 1 for leaving and 0 for staying or being new.

The second peculiar cases were household members that the mother had mentioned during Baseline Survey but did not name. Unlike the previous case with children who age into an adult, these unnamed members were simply dropped during the Age-1 Survey administration and thus treated somewhat like a new household member for the Age-1 Roster. We were able to identify these records because they still appeared in the Preloaded Baseline Roster without a name, and unexpectedly reappeared in the Age-1 Roster, but were not indicated as a new member (i.e., they were given “NO” or missing). We also visually examined that other member characteristics matched between rosters to confirm this phenomenon and adjustment. We ensured that these once unnamed members who recently became adults contributed a 1 for staying and 0 for leaving or being new to the household to adjust the counters accordingly.

After executing systematic adjustments, we ran our internal reliability checks of all of our counts. We found 13 special records requiring close manual review and manual adjustments.

Manual Adjustments

For these cases, we worked with a key staff member on the survey programming team at the Survey Research Center who reviewed keystroke files—a log file of every keystroke taken by the interviewer administering the survey) and staff member with high level of security clearance and full access to all of the personally identifying information (PII).

In four cases (P3126029, P3821481, P2363520, P5768434), child members appeared to have been dropped from the Age-1 roster, but a new child member had taken their roster position. For each case, we confirmed that these two members were two different individuals by reviewing their PII and other characteristics. As an existing child member had left, we ensured

that the “stay” indicators were adjusted down by 1 and the “leave” indicators were adjusted up by 1. The “new” indicators were already assigned a 1 and no adjustments were necessary.

In another four cases (P50814, P1896292, P6000588, P835453), member positions were shifted because one of the members listed in an earlier position of the Baseline Roster was unnamed. As described above, unnamed members were practically dropped during the Age-1 Survey rostering so members in later positions would be moved up. For example, if the child member in Position 1 was unnamed, Child members 2 and 3 would subsequently take positions 1 and 2. We reviewed PII and other characteristics to confirm this phenomenon. We adjusted the flow counters (i.e., stay, leave, and new) for each case as necessary.

For two cases (P1972735, P874515), the mother reports that a child left the household, but the child reappears as a recent adult. We adjusted down the “new” counter and the “leave” counter and adjusted up the “stay counter.

For three cases (P3110336, P7280839, P7770529), the mother reported there were no other members in the household (i.e., there is no new member to add), but the previous adjustments had flagged these members as being new, given their particular keystrokes during data entry. We reviewed PII and other characteristics to confirm that these were not new members. We adjusted down the “new” indicators and “new” counters.

After executing the manual adjustments, we ran our internal reliability checks of all of our counts and found that all were internally consistent.

Generated Variables

The above sections describe in detail how the household roster raw data were processed to generate counts and description of the household structure. We anticipate most users will only use the cleaned, generated variables which are described in this section.

Variables containing snapshot counts of adult members, child members, and all members (adult + child) during the Baseline Survey (based on data preloaded into the Age-1 data) are respectively

- hhpbase_adultsa1
- hhpbase_childsa1
- hhpbase_alla1

Variables containing snapshot counts of adult members, child members, and all members during the Age-1 Survey are, respectively

- hhage1_adultsa1
- hhage1_childsa1
- hhage1_alla1

Variables containing counts of adult members, child members, and all members who stayed, left, or were new between Baseline Survey and Age-1 Survey are

- Stayed between Baseline and Age-1
 - hhstayadultsa1
 - hhstaychildsa1
 - hstaymembersa1
- Left between Baseline and Age-1

- hhleaveadultsa1
- hhleavechilds1
- hhleavemembers1
- New between Baseline and Age-1
 - hhnewadultsa1
 - hhnewchilds1
 - hhnewmembers1

There was a special case of household members: those who become legal adult members between Baseline and Age-1 Survey straddle the two categories (i.e., child and adult). They were treated as “children” and only contributed to “child counts” (i.e., did not contribute to “adult counts”) for the Baseline snapshot count and the count of children who stayed/left between Baseline and Age-1. However, they were treated as adults for the Age-1 snapshot count. By construction, there was a minor limitation that followed. Algebraically, the sum of the number of household members at Baseline Survey that stay and the number of new household members that enter the household by Age-1 Survey equals the number of household members at Age-1. This same logic cannot be applied to adult counts and child counts. Because of these older children who become legal adults, the sum of the number of child members at Baseline Survey that stay and the number of new child members that enter the household by Age-1 Survey *does not* equal the number of child members at Age-1.

Additionally, the following additional household structures variables were created from the household roster variables.

- lives with no other adults in Age-1 (hhnoadultsa1),
- lives with romantic partner in Age-1 (hhromanticpa1)
- lives with baby’s biological father in Age-1(mhasspousea1).
- lives with unrelated adults (hhunrelatedadultsa1)
- Count of unrelated adults (hhcount_unrelatedadulta1)
- Count of grandparents in Baseline / Age-1 (hhbasegrandpaa1 / hhage1grandpaa1)
- Count of contributing partners at Baseline / Age-1 (hhbasecontrpartnera1 / hhage1contrpartnera1)
- Count of Contributing grandparents at Baseline / Age-1 (hhbasecontrgrandpaa1 / ggage1contrgrandpaa1)
- Count of Contributing other adults at Baseline / Age-1 (hhbasecontrotheradulta1 / hhage1controtheradulta1)
- Count of Contributing child at Baseline / Age-1 (hhbasecontrchilda1 / hhage1contrchilda1)
- Biodad contributes income at Age-1 (hhage1contrbiodad)

Finally, the month of birth variables (dob_mo*) have been masked for data security reasons.

Table 2 Crosswalk of the pre-loaded Baseline variables and newly collected Age-1 rostering variables.

Roster Information	<u>Preloaded Baseline Survey</u>		<u>Age-1 Survey (Adults)</u>		<u>Age-1 Survey (Child)</u>	
	Variable Stem	Position Suffix	Variable Stem	Position Suffix	Variable Stem	Position Suffix
Name	hhmemname	1-25	hhmemname	26-50	childhhmemname	1-25
Gender	hhmemgender	1-25	hhmemsex	1-25	childhhmemgender	1-25
Relationship to the mother	hhmemrel	1-25	hhmemrel	26-50	childhhmemrel	1-25
Contributes to household income	hhmemcontr	1-25	hhmemcontr	26-50	hhchildcontr	1-25
Month of Birth	month	1-25	dob_mo	1-25	dob_mo	26-50
Year of Birth	year	1-25	dob_yr	1-25	dob_yr	26-50
Age	hhmemage	1-25	hhmemage	26-50	childhhmemage	1-25
Member still lives in household	n/a	n/a	hhmemlivingwith	1-25	childhhmemlivingwith	1-25
There are other members	n/a	n/a	otheradultinhh + hhothadult	1-24	otherchildinhh + hhothchildren	1-24
Employed in the last month	n/a	n/a	n/a	n/a	hhchildjob	1-25

Note: Two variable stems were used for “there are other members”. The second variable stem hhothadult_a, for example, is numbered 1-24 and the first variable stem otheradultinhh is not numbered and serves as position 0 as this variable gets filled first.

Table 3.a Stylized Example Household Roster’s Relative Position and Member list when household roster does not change between Baseline to Age-1 Survey

Preloaded Baseline		Age-1 Survey Adult		Age-1 Survey Child	
1	Adult A	1	Adult A	1	(empty)
2	Adult B	2	Adult B	2	(empty)
3	Adult C	3	Adult C	3	(empty)
4	Child A	4	(empty)	4	Child A
5	Child B	5	(empty)	5	Child B

Table 3.b Stylized Example Household Roster’s Relative Position and Member list when existing members leave, and new members enter between Baseline and Age-1 Survey

Preloaded Baseline		Age-1 Survey Adult		Age-1 Survey Child	
1	Adult A	1	Adult A	1	(empty)
2	Adult B	2	Adult B	2	(empty)
3	Adult C	3	Adult C (empty)	3	(empty)
4	Child A	4	Adult D*	4	Child A
5	Child B	5	(empty)	5	Child B (empty)
				6	Child C*

Notes: New household members are **bolded** with an asterisk, and existing members who leave the household are ~~struck out~~ and *italicized*.

Table 3.c Stylized Example Household Roster’s Relative Position and Member list when a Child at Baseline becomes a legal adult by Age-1 Survey

Preloaded Baseline		Age-1 Survey Adult		Age-1 Survey Child	
1	Adult A	1	Adult A	1	(empty)
2	Adult B	2	Adult B	2	(empty)
3	Adult C	3	Adult C	3	(empty)
4	Child A	4	Adult D (Child A)	4	(empty)
5	Child B	5	(empty)	5	Child B

Notes: The child at Baseline who becomes a legal adult by Age-1 Survey is bolded and highlighted in yellow.

Section D1: Biodad

- **About this section:** This section collects information about mother’s current relationship with the baby’s biological father, or “biodad”, and whether this has changed since Baseline.
- **Generated Variables:** *dunknowna0* and *dunknowna1* indicate if the focal child’s father was unknown at Baseline and at Age-1, respectively. We created several variables but refer users to the survey instrument and the STATA programming file for details. For example, we create an indicator for whether the mother was married to the biodad at Age-1 (*mmarriedtodadal*), which include mothers who were married to the biodad at Baseline as well as mothers who may have gotten married to the biodad since Baseline.

Section D2: Father’s Demographics

- **About this section:** In this section, we first asked about the focal child’s biological father, regardless of whether the father was in the household. Please see Section B which describes the raw and generated variables for mother’s demographics for full details. Father’s demographic variables are handled and created in the same way.
- **Generated Data:** *draceal* combines race and ethnicity to create the categories used in many analyses, which is to have a single Hispanic category and several non-Hispanic race categories. *dethnicitya1* is a categorical variable that describes the specific ethnic origins of fathers that the mother considered Hispanic, Latino, or Spanish.

Section D3: Current Relationship

- **About this Section:** This section has information on mother’s current relationship status with her partner.
- **Raw Data:** Mothers who did not identify a spouse or domestic partner in the household roster section were asked whether they were currently in a relationship in section D3 (Current Relationship). *mromantica1* identifies whether the mother is in a relationship at Age-1. The item is pre-filled for participants who identify a spouse or domestic partner on the household roster section of the survey. Participants who did not identify a spouse or partner in the household roster section, or participants who may have identified both a spouse and a partner, are asked whether they are currently in a relationship. Additional variables identify the mother’s partner’s gender and the length of the relationship.
- **Generated Data:** We generate one categorical variable that identifies the mother’s current relationship status (*mrelationshipa1*); mothers are coded as not in a current relationship, in a relationship with someone outside the household, or in a relationship with a household member.

Section D4: AudioCASI

- **About this Section:** This section used Audio Computer-Assisted Self-Interview (ACASI) for the 605 mothers who completed in-person interviews. ACASI intended to provide additional privacy for mothers when they responded to sensitive items pertaining to romantic relationships; child discipline strategies; and maternal health questions related to substance use and sexual health. We describe each in turn. Items in this section are missing for mothers who were interviewed by phone after the onset of the pandemic.

- **Romantic Relationships Subsection:** This subsection contains three pre-registered outcomes: (1) physical abuse; (2) frequency of arguing; and (3) relationship quality index. These items were asked to all mothers who completed in-person interviews, regardless of current relationship status; mothers who were not in a relationship at the time of the Age-1 interview were asked to think about their prior relationship.
 - **Raw Variables:** The pre-registered relationship quality index was intended to be an additive index of 11 items, with each item on a 3-point scale (Often, Sometimes, Never). However, one of the items, “Has your partner ever threatened to spank or slap your child or children?” (*pviolent1*), was deemed to be too sensitive to be on a 3-point scale for one site and had to be collapsed into a binary (yes/no) indicator on the survey. Consequently, we excluded the item in later versions of the pre-registration, resulting in a 10-item index.
 - **Generated Variables:**
 - The pre-registered binary outcome of whether the mother was ever physically abused is (*mphysicalabuse1*).
 - The pre-registered outcome of frequency of arguing (*margin1*) is generated by reverse coding a single raw variable (*rargin1*) such that higher values indicate more frequent arguing.
 - The pre-registered relationship quality index (*mrelationquality1*) is an additive index of 10 items that ask how often the participant’s partner was fair and willing to compromise, expressed affection or love, insulted or criticized the participant for ideas, made the participant feel down or bad about herself during an argument, encouraged or helped her to do things that were important to her, isolated the participant, hurt her physically, sexually abused her, listened to her, or made her feel afraid. The positive relationship items were reverse coded (*mprcompromise1*, *mpaffection1*, *mpencourage1*, and *mplisten1*) such that higher values indicated more positive relationship quality.

- **Discipline Strategies Subsection (Section O):** This subsection includes one pre-registered outcome: whether the participant has used spanking as a discipline strategy in the past month at Age-1. The preregistered variable is *hhspanka1*.

- **Maternal Health Subsections (Section Q):** These subsections contain items related to mother’s use of cigarettes, alcohol, and opioids in the last year as well as a section focused on mother’s reproductive health and contraception use. These subsections contain two pre-registered outcomes: (1) alcohol and cigarette use and (2) opioid use.
 - **Generated Variables:**
 - The pre-registered variable *malcciga1* is a 2-item additive index of mother’s self-report of smoking and drinking frequency (*cigsmokepy1* and *alcoholpy1*), each of which has 5 response options (every day, several times a week, several times a month, less than once a month, never in the last year). Higher values indicate more frequent smoking/drinking.

- The pre-registered variable `mopioida1` is a single-item outcome indicating mothers frequency of opioid use, with higher valued indicating more frequent use.
- We have generated variables for mother’s reproductive health (e.g., use of single-use contraception `mshortertermcontraa1`) for internal purposes and have kept them for secondary analysts. Please see the `.do` file for details of these generated variables.

Section D5: Father Involvement

- **About this Section:** This section has items related to father involvement and co-parenting. There are no pre-registered outcomes included in this section. Additionally, this section contains no generated variables.
- **Raw variables:** Mothers are also asked the same co-parenting items about the focal child’s biological father and her current partners living in the household at the time of the Age-1 survey. To distinguish between items asked about the biological father and current partners, the items for current partners end with 2 in their variable name (e.g., `prolemodel2a1` refer to mother’s current partner and `prolemodela1` refer to child’s biological father).

Section E: Residential History, Housing Quality

About this Section: This section of the survey includes items for three pre-registered outcomes: (1) Excessive Residential Mobility, (2) Index of Housing Quality, and (3) Homelessness.

Raw variables

- Items on housing quality are asked only to participants who are currently living in a home, mobile home, or apartment. Participants with temporary living conditions or who are currently unhoused are not asked these items.

Generated Variables:

- **Excessive Residential Mobility.** Pre-registered variable `hhexcessivemovea1` is a binary indicator for whether the mother 3 or more times since the focal child was born.
- **Index of Housing Quality.** The intended pre-registered variable `hhhousingqualitya1` is an 8-item additive index with higher values indicating better housing quality. We had mistakenly excluded an item (`hhbadlocks1`) from this index in the pre-registration document, “Broken locks or no locks on the door to your home: would you say that is no problem, a small problem, or a big problem?”. When we update the pre-registration document in the future, we will make sure this item is included. Secondary analysts can create the 7-item index by excluding the item `hhbadlocks1`.
- **Homelessness.** We had previously pre-registered this outcome to be an additive index of the two items (ever homeless, ever in a group shelter). We have since updated this outcome to be a binary outcome, ever homeless or in a group shelter (`hhhomelessorshelter`). We will update in a future version of the pre-registration. Analyst wanting to use the additive index can create it with variables `rhomeless1` and `rgroupshelter1`.

Section F: Residential History and Neighborhood

- **About this Section:** This section includes one pre-registered outcome: Index of Perceptions of Neighborhood Safety.
- **Generated Variables:** Pre-registered variable `hhneighbsafetya1` is a 2-item additive index of perceptions of neighborhood safety during the day and evening, with higher values indicating more safety.

Section G: Year in Review (life history)

- **About this Section:** This section of the survey asked the mother about her various “life events” (e.g., employment) in each of the months between the study baby’s birth and the Age-1 Survey (e.g., in which months she had been employed) and her “life event” at the time the Age-1 Survey (e.g., whether she was employed at Age-1 Survey). Life events recorded on a “month-by-month” basis include employment, maternity leave, breastfeeding, childcare, and mother-child ever living apart. Life events recorded at the time of the Age-1 Survey include childcare, employment, and mother’s education and training attainment. We describe these two sets of variables in the two subsections below. This section includes four pre-registered outcomes: (1) time to labor market entry since baby’s birth, (2) cost of paid childcare, (3) use of center-based care, and (4) mother’s education and training attainment.
- **Life events month-by-month subsection:** Mothers were first asked to report whether they had a “life event” (e.g., worked full time) between the study baby’s birth and the Age-1 Survey. If so, they are then asked to report on which months between the study baby’s birth and the Age-1 Survey this life event occurred or in which months the life event started/ended. We provide special notes for these life events below, but please refer to the survey instrument to get the specific variable details for each life event.
 - **Raw Variables:** For example, mothers who reported working for pay (`rworka1`) or full time (`rworkfta1`) since their baby was born were asked to report on which months they worked. Their responses are recorded in raw variables indexed from 1-21, which have the following suffix: `_s_1a1`, `_s_2a1` ... `_s_21a1`.

However, the 1-21 index in the *variable name* suffix do NOT correspond to specific months; rather, the 21 variables are merely arbitrary placeholders for the mother’s responses about each potential month between baby’s birth and Age-1. For example, consider a mother who reported working for two months since the baby’s birth, specifically month 7 and 8 of the baby’s life. Her responses would be recorded in the first two variables with suffix `_s_1a1` and `_s_2a1` because she only worked 2 months. The first variable ending in `_s_1a1` would be assigned the value “Month 7” and the second variable ending in `_s_2a1` would be assigned the value “Month 8”. All other `s_Xa1` variables would be assigned a missing value.

Very important: the month values start at 1 (not 0). If the baby was born in January, January would be month 1 for the baby, and the baby would be 0 months old (or less than 1 month old) during this January. For some life events (i.e., formula and childcare), the survey instrument reads “how old was the baby”

instead of “in which months” of the baby’s life did a life event occur. Although the questions are different, the values of the mother’s response are stored using the same rules.

If a mother reported starting the baby on formula when the baby was 0 months old, that would be stored as Month 1, the first month of the baby’s life.

A value of 95 is used if a mother reported a life event for all months (e.g., having worked all the months) between the baby’s birth and the Age-1 Survey. The first variable ending in `s_1a1` would be assigned a value of 95 and all other `s_Xa1` variables would be assigned a missing value.

The same logic of raw data storage applies to maternity leave, breastfeeding, childcare, and baby not living with mother for more than week.

- **Special note for maternity leave:** All mothers were supposed to be asked about *paid* maternity leave and *unpaid* maternity leave where they knew they would be returning. All mothers were asked the paid maternity leave questions. However, due to a survey administration error, only 774 mothers were asked the unpaid maternity leave questions.
- **Special note for breastfeeding.** If mothers reported that they ever breastfed, they were asked in which months they breastfed the study baby between the baby’s birth and Age-1. Then, if mothers reported that they ever breastfed but they were not currently breastfeeding, they were asked in which month they stopped breastfeeding. Some interviewers indicated just the one month when the mother stopped breastfeeding and other interviewers checked that one month and all subsequent months. In the latter case, even though they have multiple months listed, the first month indicates when breastfeeding stopped, as shown in the generated variable `mstoppedbfa1`. For example, if months 7-11 were checked, month 7 indicates the month that the mother stopped breastfeeding. Lastly, secondary analysts should not that the last month the mother reported breastfeeding usually corresponds to the first month that the mother reported stopped breastfeeding (i.e., the two months are identical or off by 1). In a handful of cases, they do not correspond well and the secondary analyst will have to decide how to resolve this for their analysis.
- **Special note for formula, non-relative childcare, center-based childcare.** The survey asks when the baby *started* receiving (1) formula or other milk regularly, (2) when the baby *first* spent 5 or more hours per week with a non-relative who cares for him/her in their home, (3) *started* day care or childcare center as opposed to in which months of the baby’s life the life event applied. Like in the case of stopping breastfeeding, some interviewers indicated just the one month when the mother *started* (or first had) the life event and other interviewers checked that one month and all subsequent months. The first month indicates when the event *started*, and it is the only valid value. We do not know when these life events ended or for how long it continued.

- **Generated Variables:** For all of these life events, we generated dummy variables to indicate whether the mother had a life event in first, second, third, or fourth baby's first 12-months. For example, `workq1a1` indicates whether mother was working in the first quarter (Months 1-3, when baby is 0-2 months old), which was created by checking if any of the month-by-month work variables indexed 1-21 contained values 1, 2, 3, or 95 (recall 95 indicated the mother worked all months). We did not create these quarterly variables for when formula, non-relative childcare, and center-based childcare *started*. We created additional variables for our internal analytic purposes and have kept them in the public data in case they were helpful to secondary analysts. These additionally generated variables have been labeled with details, but please refer to the STATA `.do` file to see the full details.
- **Pre-registered generated variables**
 - **Employment:** `mworkstarta1` and `mftworkstarta1` indicate the number of months since baby's month that passed before mother began working or began working full time, respectively. For example, if the baby was born in January and the mother started working in February, the mother started work on the 2nd month of the baby's life when approximately one full month has passed, so `mworkstarta1` gets a value of 1. These variables are assigned a missing value if the mother had not worked in the months between the baby's birth and Age-1 Survey.
 - **Childcare:** `hhusecentercare` indicates whether the child spent any time in center-based care.
- **Life events "At time of the Age-1 interview" sub-section:**
 - **Raw variables.** This subsection is more straight forward than the month-by-month section. When responding to the questions, mothers are asked to think of the typical 7-day week in the last month, which we will refer to as the "time of the Age-1 interview".
 - **Special note for maternal employment:** Due to an error in programming the survey, participants who were interviewed at the beginning of the data collection period and said that they were not working for pay were not asked whether they were self-employed.
 - **Generated Variables.** We generate several variables for internal purposes but leave them for secondary analyst in case they are useful (e.g., who exactly provided childcare). We refer analyst to the STATA `.do` file for the full details of these generated variables. We highlight just a few variables that are affected programming error in maternal employment. Mothers are considered as employed (`memployeda1`) whether they work for pay or are self-employed. As a result of the survey error, potentially some mothers who are self-employed are assigned a 0. We operationalized full-time employment as working 35 hours or more per week across all jobs (see `mworkparttimea1` and `mworkfulltimea1`)
 - **Pre-registered generated variables.**
 - **Childcare:** Mothers reported on how much they spent out-of-pocket for childcare arrangements in the last week (`hhpaidcccosta1`) for the

study baby. We asked the mother to confirm whether that amount was for the study baby or for other children. When the mother reported that the amount was for other children as well, we created a new variable that adjusted the cost of childcare by the number of children involved (hhpaidcost_adj1)

- **Mother's education and training attainment:** medjobtrain1 indicates whether the mother participated in education (edutrain1) or job training (jobtrain1) activities since the baby's birth.

Section H: Child Health

- **About this Section:** There are two subsections (Child Sleep and Child Health) with two pre-registered outcomes (1) Sleep Disturbance and (2) Child Health.
- **Child Sleep Raw Variables:** The PROMIS sleep disturbance index in an additive index of the four items on a five-point scale (1: Never, 2: Almost Never, 3: Sometimes, 4: Almost Always, 5: Always). Mothers responded to four items that asked about difficulty falling asleep, sleeping through the night, problem with sleep, and trouble sleeping. Sleeping through the night was reverse-coded.
- **Child Sleep Generated Variables:** The pre-registered outcome cPROMISa1 is an additive index of 4-items, with higher scores indicating more sleep problems. The 4-item scale cPROMISa1 is the originally intended pre-registered outcome that match the source scale, but by mistake, we left off one of the items in the pre-registration document and effectively pre-registered a 3-item scale. When we update the pre-registration in the future, we will add this item back in. However, secondary analyst can create the 3-item scale by excluding csleeptroub_b_2a1.
- **Child Health Raw Variables:** This section asks twelve questions about the child's overall health, and we use six of them to generate a pre-registered additive index of child overall health. The six raw variables that are used to create the additive index of child poor health include: chealth1, cdocsick1, cdochurt1, csickera1, certimesa1, and cdisabilitya1. In addition to these six items, there are six additional raw variables (cdiagnosea1, cmedicatea1, conmedsa1, cvaccinatea1, missmedcare1, and whymissmedcare1) that include further information on child diagnoses, medications, vaccination status, and missed medical care.
- **Child Health Generated Variables:** The pre-registered outcome csickhealth1 is an additive index of the 6-items that represents child overall poor health, with higher scores indicating poorer health. These original six items use various scales. Two of the items asked mothers about the number of times they went to the doctor or the emergency room because the child was injured (cdochurt1 and certimesa1). These were open-ended items, so we cdochurt1 into a 3-point scale and certimesa1 into 4-point scale prior to creating the additive index. Please see the do file for details. We pre-registered these items as an additive index subject to factor analysis. Our analysis suggests that this index does not conform to a one or two factor structure and we suggest that users consider this in their work with these data.

Section I: Social Emotional Development (BITSEA)

- **About this Section:** This section includes the pre-registered measure of child socio-emotional problems: the Brief Infant Toddler Social Emotional Assessment (BITSEA). Analysts should note discrepancies between the original source scale and the implemented scale due to an error in survey administration. The original BITSEA scale has 42 items and two additional questions (“A” and “B”). From the 42 items, 11 are part of the “Competence scale” and 31 are part of the “Problems” scale. In all 42 items, the parent is asked to answer on a 3-point scale (Not true/rarely, Somewhat true/sometimes, Very true/Often) “what best describes the child’s behavior in the last month”. The two additional questions (Items “A” and “B”) asks the parent how worried they were of child’s behavior and language development on a 4-point scale. These two additional questions are part of the BITSEA questionnaire but not the scoring of the scale. Below we describe the survey administration error that deviates from this source scale.
- **Raw Variables:** We asked the 31 Problems scale items and the two additional questions (i.e., *cemotconca1* and *clangconca1*; items “A” and “B” in the original scale). For 8 of the 31 items in the Problem scale, we administered a different question stem. Instead of asking “what best describes the child’s behavior in the last month”, we asked “For each behavior, please do your best to tell me what extent you have worried about it in the last month”. In other words, we used the logic of the additional questions “A” and “B” in some of the scale items (*crepordera1*, *crepactiona1*, *crepmovea1*, *coblivioua1*, *cnoeyecona1*, *cnotphysa1*, *churtsselfa1*, and *cweirdeatsa1*).
- **Generated Variables:** To generate the BITSEA Problems total score, we recoded the items in the following ways (identified with the suffix “_rec”):
 - Following BITSEA scoring guidelines, all items are recoded from a 1 to 3 scale to a 0 to 2 scale.
 - Items 19 and 27 from the original scale refers to the child’s relationship with other children. Following BITSEA scoring guidelines, the option “*Circle N if there is no contact with other children*” was treated as a missing value in the total score. It is coded as “4” in the raw item variables. We recoded 4 to “.n”.
 - Items that were affected by the survey error mentioned above were recoded, top-coding the 4th response option: “*Not at all worried*” = “*Not true/rarely*” (0), “*A little worried*” = “*Somewhat true/sometimes*” (1), “*Worried*” or “*Very worried*” = “*Very true/Often*” (2).
 - *BITSEA Problems Total Score:* Following BITSEA scoring guidelines, we summed the response values from the 31 Problem recoded items. If more than 5 Problem items were scored as missing, the total score was assigned missing.
 - *BITSEA cutoff:* Following BITSEA scoring guidelines, we created an indicator of “Possible Problem”, comparing the total score with a cutoff that is based on the child’s age (variable *iwdateagea1*) and child’s gender (variable *cfemalea1*). Note: *iwdateagea1* is partially masked in the publicly released data.

Section J: Child Home Language Exposure

- **About this Section:** This section contains no pre-registered variables and asks about languages the focal child may hear. The mother is first asked about the language the child hears most often at home, which gets identified as the primary language. Mothers can choose

from English, Spanish, French, Somali, Creole, or Other. Participants are then asked about any other language the child hears, with the option to choose as many as are applicable.

- **Raw Variables:** The raw variables in this section identify the child's primary language (`cprimlanga1`), and, for the children who responded affirmatively to hearing other languages, up to 6 additional languages the child hears at home. The survey stored the raw participant responses into 6 placeholder variables (`cotherlangspec_s_1a1-cotherlangspec_s_6a1`), such that n placeholder variables would be filled if the mother provided n language options. The variable `cprimlangta1` identifies how often the child hears the primary language compared to other languages.
- **Generated Variables:** The variable `clanguagea1` is a generated variable that identifies whether the child's home environment is: English only, Spanish only, any other language alone, English/Spanish bilingual, English/other language bilingual, another combination of two languages, or multilingual.

Section M1: Maternal Health

- **About this Section:** This section includes two pre-registered outcomes: (1) global happiness and (2) maternal agency. Placement of this section in the survey administration was randomized for participants. Half of the mothers were asked these items before the income items (Section K), and the other half were asked these items after income questions.
- **Raw Variable:** Because of the randomization in survey order, mother's responses were stored in two sets of variables, one set for each randomization block. For example, the response to the item about maternal happiness is stored in two variables `mhealth1a1` and `mhealth2a1`. In addition, the responses were stored on different values for the different randomization blocks. For example, the 3-point response options to happiness (Not Happy, Pretty Happy, Very Happy) were stored in values 1-3 for the first randomization block and stored in values 4-6 in the second randomization block. This is also true of the maternal agency items. We adjust the response options accordingly.
- **Generated Variable:** The pre-registered outcome global happiness (`mhappya1`) is a one-item outcome on 3-point response scale (0: Not Happy; 1: Pretty Happy; 2: Very Happy). The pre-registered outcome maternal Agency (`mHOPEa1`) is an additive index of nine items on a 5-point response scale (1: Definitely false; 2: Mostly false; 3: Sometimes true and sometimes false; 4: Mostly true; 5: Definitely true), with higher values indicating more agency.

Section K: Income and Receipt of Public Program Benefits

About this Section: This section includes two subsections: (1) income and (2) receipt of public benefits. We do not include poverty threshold measures in our public Age-1 dataset due to complications arising from the imperfect match between the calendar year for which mothers reported income (e.g., 2019) and the months in which the mother was receiving the cash gift from the study (e.g., 2020). These complications are resolved in subsequent data processing waves as more income data over multiple years are collected.

Income

- **About this Subsection:** To estimate total household income, this section asks participants to report five components of income: (1) mothers' earned income, (2) spouse's earned income (if living with a spouse or partner determined by the mother's responses in the household roster section), (3) others' earned income (if living with other adults determined by the mother's responses in the household roster section), (4) government income, and (5) all other income (such as money from any businesses, help from friends or relatives, child support and any other money income).
- **Raw Variables:** Mothers are first asked to report a dollar value for each component of their income. If they do not provide a dollar value, then the value is estimated through a series of "unfolding questions" that approximate the income component amount. The income component values are then stored for all mothers (i.e., those who provided a dollar value and those whose amount was estimated through the unfolding sequence) in the following raw variables: `totalearnedincome1`, `totspouseincome1`, `totothhhmemincome1`, `totgovincome1`, and `totallotherincome1`. The five components are automatically added up by the survey program and stored in another raw variable (`combinedincome1`), and then mothers are asked if this total income value is about right for their household income. If the answer is "no" or "don't know", they are asked to provide a best estimate, including all sources (`estimatedincome1`).
- **Generated Variables:** All generated income variables were adjusted for inflation to 2019\$ values. We generated variables to represent the total for each of the five income components with two key differences from the versions calculated in the raw variables: (1) we assigned \$2,500 if mothers report less than \$5,000 in the unfolding sequence (they were assigned \$0 in the raw version), and (2) we maintain missing values (.d, .r, and .). Note: the raw versions do not have missing values. The generated income variables by component are: `hhomeearned1`, `hhspouseearned1`, `hhotherearned1`, `hhgovtincome1`, and `hhothereincome1`. We also generated alternative variables for two of these components (`hhspouseearnedexp1` and `hhothereearnedexp1`) that replace missing values with 0 for mothers who report no spouse or no other household members, respectively.
 - To estimate total household income (`hhrevisedincome1`), we applied the following rules:
 - If the mother confirmed the "combined income" value as being correct (`calculatedincome1==1`), then the household income is the sum of each component (using our adjustment for values less than \$5000).
 - If the mother did not confirm the "combined income" value and provided a new estimate (`estimatedincome1`), then the household income (`hhrevisedincome1`) is the new estimated income that the mother provided.
 - If the mother did not confirm the "combined income" and then did not offer an alternative estimate from the one calculated from her previous responses, then this household income variable is missing.
 - We generated an alternative version of the total household income variable (`hhincome1`) where we use the combined income value that mothers did not

confirm (`calculatedincomeal==5`) for the mothers who did not provide an alternative estimate to minimize missing values for these mothers.

Receipt of Public Benefits

- **About this Subsection:** This section asks whether the mother receives public benefits and includes the pre-registered outcome social services receipt index.
- **Raw Variables:** Mothers are asked whether they receive 10 social services (i.e., food stamps/SNAP, Free or Reduced Child Care, Early Head Start, Head Start, Women, Infants, and Children (WIC), State Unemployment, Cash Assistance/TANF, Medicaid coverage for self, Housing Assistance, and LIHEAP/Heat/AC Assistance). Mothers were asked about these social services using a checklist. Please see subsection “Check all that apply” for details on how raw variables get stored for these types of questions.
- **Generated Variables:** The pre-registered outcome social services receipt index (`hhsocialservicesal`) is an additive index of the 10 social service items. Although our preregistration originally had Early Head Start and Head Start combined as a single item on the social services receipt index, our survey asked about Early Head Start and Head Start separately. Rather than combining these two items for the purpose of creating the index, we decided to keep them as separate items and construct the index using all ten public benefits. If mothers said that they received “other” benefit, they were asked to specify which services or supports they received in an open-ended response. If the open-ended response corresponded to one of the services on the list, they were recoded in our generated variable. We recoded the following open-ended responses as receiving housing assistance for the respective sampleIDs:
 - “Section 8” (n=1; P934724)
 - “FHEPS” (Rental assistance program in NY). (n=1; P6588722)
 - “Help to pay rent from welfare which is \$900” (n=1; P3837497)
 - “It’s like section 8 but it’s attached to the building” (n=1; P3930845)
 - “Hud” (n=1; P623563)
 - “FEP (like public assistance)” (this is FHEPS, in NY). (n=1; P2405664)
 - “RENTAL ASSISTANCE” (n=1; P936359)
 - “aID FOR RENT” (n=1; P4249172)
 - “Yo tengo un programa de renta” (n=1; P6992998)
 - “Drie” (this is “disability rent increase exemption”, in NY). (n=1; P3174129)

Section L: Expenditures and Economics Stress

- **About this Section:** This section asks about child focused expenditures, economic stress, food expenditures, food insecurity, and assets and expenditures. It includes the following pre-registered outcomes: (1) purchases for child since birth, (2) index of child-focused expenditures in last 30 days, (3) food insecurity, and (4) index of economic stress.
- **Child Focused Expenditures:** We measured child focused expenditures in two ways: purchases since the child’s birth and purchases in the last 30 days.
 - Mothers are first asked about specific items purchased since birth. These items used “yes” or “no” response categories except for the item that asked about the number of books purchased, which used an ordinal categorical scale. We generated a binary variable for this item that equals 1 if mothers bought at least 1 book and equals 0 if mothers bought no books. The pre-registered index of child

focused expenditures since birth (`hhchilditemssincebirth1`) is an additive index of the eight possible items.

- For the five items of the index of child focused expenditures in the last 30 days, mothers are first asked if they purchased any of the items. If mothers say yes, then they are asked how much money they spent on the item. Due to the skip pattern, these variables have missing values if mother said “no” to having purchased the item in the last 30 days. We generated variables where the amount is equal to 0 (instead of missing) if they have not purchased the items. The pre-registered index of child-focused expenditures in last 30 days (`hhchildexpense30days`) is an additive index of the total amount spent on all five items.
- **Economic Stress:** This subsection asks mothers about their experiences with economic worries and hardships, and it includes five of the nine items that are used to construct our index of economic stress. The other four items for this index were asked in Section E, Section H, and in the assets and expenditures subsection below. The items were dichotomized and reverse coded as described in the pre-registration table. The pre-registered index of economic stress (`hheconstress1`) is an additive index of all nine items, with higher values indicating more economic stress.
- **Food Expenditures:** This subsection asks mothers how much they and their household spend on food and how much is received in food stamps. Whether the mother receives food stamps is asked in Section K. In this subsection, mothers are asked whether someone else in their household receives food stamps (`foodstamps1`).
 - Due to an error in the survey, there are complications with the interpretation of the variables in this subsection. Analysts should be aware of the following:
 - If mothers reported receiving food stamps themselves but nobody else in their household received them (responded “no” to `foodstamps1`), they were not asked how much they received in food stamps (`foodstampamt1`). Additionally, they were not asked if they spent money out-of-pocket on food in addition to what they buy with food stamps (`ofoodamt1`). Thus, the valid responses to `ofoodamt1` include only mothers who reported that they have a household member receiving food stamps.
 - All mothers received two versions of the question, “How much do you and everyone else in your family spend on food that you use at home in an average week?” (`ofoodamtwk1`).
 - For mothers who reported that someone else in their household receives food stamps, the question was preceded by the preamble, “In addition to food stamp benefits.”
 - For mothers who received food stamps but nobody else in their household received them, they did not receive the preamble. As such, it is not clear whether their answers include their food stamps benefits or not, as it could be subject to their own interpretation.
 - Three other expenditures are included in this subsection: amount spent eating out in an average week, amount spent on alcohol in an average week, and number of packs of cigarettes purchased in an average week. We created indicators for having spent any money eating out, on alcohol, or any cigarettes in an average week (`hheatout1`, `hhalcohol1` and `hhciga1`).

- **Food Insecurity:** This subsection asks mothers about their experiences of food insecurity. The intended food insecurity scale includes 6 items, but we only administered 5 items at Age-1. The item asking about hunger was erroneously excluded from the survey and we do not have data on this item. Additionally, the item about the frequency of missing meals was asked in the Age-1 survey and is available in the Age-1 data, but the item was mistakenly excluded from the pre-registration document. Future pre-registration document will be updated to correct this typo. Future waves of data will include all 6 items. Our pre-registered food insecurity scale (`hhfoodinsecuritya1`) in the Age-1 data is an additive index of the 5 available items (recoded as binary indicators as described in the pre-registration table), with higher values indicating more food insecurity.
- **Assets and Expenditures:** This subsection asks mothers about other items related to their assets and expenditures, including transportation, home appliances, computers, utilities, and whether they give economic support to anyone outside of their home.
 - The home appliances and home computers questions used a checklist format. Please see subsection “Check all that apply” for details on how raw variables get stored for these types of questions. We generated binary variables to indicate whether the mother owns each appliance and type of computer.
 - Mothers were asked if their household gave any economic support to anyone outside the household, and if so, what was the amount. We generated a variable (`hhosupportamt1`) that uses a value of zero if they did not give economic support (instead of missing).
 - This subsection includes two of the items that are used in the index of economic stress: an indicator for missing a utility payment in the last twelve months and an indicator for having utilities turned off during the last twelve months.

Section M2: Maternal Health (same questions as in M1 except randomized to appear after questions on economic stress)

Section N: Household Atmosphere

- **About this Section:** This section includes the pre-registered Home Environment Chaos Scale, which is an adaptation of the Chaos, Hubbub, and Order Scale (CHAOS) with five additional items.
- **Raw Variables:** Mothers responded to twenty statements by saying True if the item happens more than half the time or False if it happens less than half the time. Note that instrument B intentionally does not ask mothers three of the items (`hhroutinea1`, `hhbedrouta1`, and `hhbedtimea1`) because the child was not living in the mothers’ household.
- **Generated Variables:** To construct the pre-registered scale, some items were reverse scored and recoded. The generated variable for the pre-registered Home Environment Chaos Scale (`hhchaosa1`) is an additive index of all 20 items, with higher scores indicating more chaos.

Section P: Parenting Stress

- **About this Section:** This section contains 7 items that comprise the pre-registered parenting stress index. Four of these items measure parenting competence and three are taken from the parenting aggravation scale.
- **Raw Variables:** Participants are asked whether they (1) strongly agree, (2) agree, (3) are not sure, (4) disagree, or (5) strongly disagree to the seven individual items. The raw variables use the same response scale across all seven items.
- **Generated Variables:** The generated variables reverse score the response scales for the variables that comprise the competence items in the scale (`mpconfidential`, `mgoodparental`, `mpadmitflawsa1`, and `mpwondera1`). The parenting stress index (`mparentingstressa1`) then sums all seven items so that higher scores indicate higher parenting stress.

Section Q: Maternal Health

- **About this Section:** This section asks mothers about their physical and mental health. There are five preregistered outcomes in this section: (1) global health; (2) depression; (3) anxiety; (4) sleep; and (5) perceived stress. There are two additional items that ask about mothers' incarceration history during the last year.
- **Global Health:** The pre-registered outcome of mothers' overall health (`mghealtha1`) is measured using a single item with a 5-point response scale (1: Poor; 2: Fair; 3: Good; 4: Very Good; 5: Excellent).
- **Index of Maternal Depression:** Mothers' depressive symptoms were measured using the Patient Health Questionnaire (PHQ-8) scale, which includes 8 common symptoms of depression. The raw variables use a scale from 1 to 4 (1: not at all; 2: several days; 3: more than half of days; 4: every day), and we generated recoded variables that use a scale from 0 to 3 (0: not at all; 1: several days; 2: more than half of days; 3: every day). The pre-registered generated index (`mphq8a1`) is an additive index of the eight recoded PHQ-8 items, with higher values indicating more depressive symptoms.
- **Index of Maternal Anxiety:** Mothers' anxiety symptoms were measured using the Beck Anxiety Inventory (BAI), which includes 21 common anxiety symptoms. The raw variables use a scale from 1 to 4 (1: not at all; 2: mildly; 3: moderately; 4: severely bothersome), and we generated recoded variables that use a scale from 0 to 3 (0: not at all; 1: mildly; 2: moderately; 3: severely bothersome). The pre-registered generated index (`mbecka1`) is an additive index of the 21 recoded BAI items, with higher values indicating more anxiety symptoms.
- **Sleep:** Mothers' sleep was measured using three items, each on a five-point scale. The first item asked about sleep quality (1: Very Poor; 2: Poor; 3: Fairs; 4: Good; 5: Very Good). The two other items asked about the extent to which the mother experiences sleep challenges and used the same scale (1: Not at all; 2: A little bit; 3: Somewhat; 4: Quite a bit; 5: Very Much). These two items were reverse coded (1: Very Much; 2: Quite a bit; 3: Somewhat; 4: A little bit; 5: Not at all). The pre-registered generated index (`msleepa1`) is an additive index of the three items, with higher values indicating better quality sleep.
- **Perceived stress:** Mothers' perceived stress was measured using the Perceived Stress Scale (PSS), which assesses the degree to which the respondent has perceived situations as stressful within the last month. The nine raw variables use a scale from 1 to 5 (1: Never; 2: Almost never; 3: Sometimes; 4: Fairly often; 5: Very often). We generated recoded variables using a

revised scale from 0 to 4 (0: Never; 1: Almost never; 2: Sometimes; 3: Fairly often; 4: Very often). Three of the items were reverse scored (0: Very often; 1: Fairly often; 2: Sometimes; 3: Almost never; 4: Never). The pre-registered generated scale (`mperceivedstressal`) is an additive index the nine items, with higher values indicating more perceived stress.

- Note: One item was erroneously omitted from the survey, leaving a total of 9 items drawn from the intended 10-question scale.

Section R: Language Development

- **About this Section:** This section includes three subsections: language development, parent-child activities, and life satisfaction. There are two pre-registered items in this section: (1) language milestones, and (2) self-report of parent-child activities.
- **Language Development:** Language development was measured using the Ages and Stages Questionnaire (ASQ-3) Communication Scale, which is a parent self-report of the child's progress towards language milestones. Mothers were assigned one of four questionnaires based on their children's age: 12-month (n=690), 14-month (n=141), 16-month (n=54), or 18-month (n=17). The raw items (and their recoded versions) were deleted from the public-use file because they provide information about the child's month of birth. The following variables were generated using the recoded items:
 - ASQ Communication Language Scale (total value): `tot_casqlangal`.
 - ASQ Communication Language Scale (standardized): `casqlangal`.
 - We used the mean and standard deviation for each age range reported in the ASQ-3 User's Guide:
 - 12-month: mean = 43.22, sd = 13.79
 - 14-month: mean = 45.85, sd = 14.23
 - 16-month: mean = 44.08, sd = 13.64
 - 18-month: mean = 42.30, sd = 14.62
 - ASQ 1-SD and 2-SD Cutoff Variables:
 - `casqlangcutoffal`: categorical variable for cutoff categories: (1) Score below cutoff (2 SD below mean), (2) score close to cutoff (between 1 and 2 SD below mean), (3) development appears on schedule (score above 1 SD below mean).
 - `casqlangbelowal`: Indicator variable for ASQ score below cutoff (<2 SD below mean).
 - `casqlangcloseal`: Indicator variable for ASQ score below or close to cutoff (<1SD below mean).
- **Parent-Child Activities:** Parent-child activities were measured using the Parent Child Activities Index, which is a self-report of how often parents engage in a series of activities with their child. The four items were asked on a four-point scale: (1) rarely or not at all, (2) a few times a month, (3) a few times a week, (4) every day. The following variables were generated:
 - Pre-registered parent child activities index: `mparentchildactal`. This is an additive index of four items, with higher values indicating higher frequency of parent-child activities.
 - We generated additional dummy variables for internal analysis and include them in the public dataset. For example, we generated a variable that indicates whether books

were being read daily (`mreadbooksdaily1`). See the do-file for more information on those generated variables.

- **Life satisfaction:** This non-pre-registered item asked mothers about their life satisfaction. Although the raw variable is named `happiness` in the instrument, we renamed the raw variable as `msatisfaction1` in the dataset to distinguish it from the global happiness item in Section M. The generated variable `msatisfactionda1` is a dummy variable for being very much satisfied with life.

Section S: Hair Cortisol

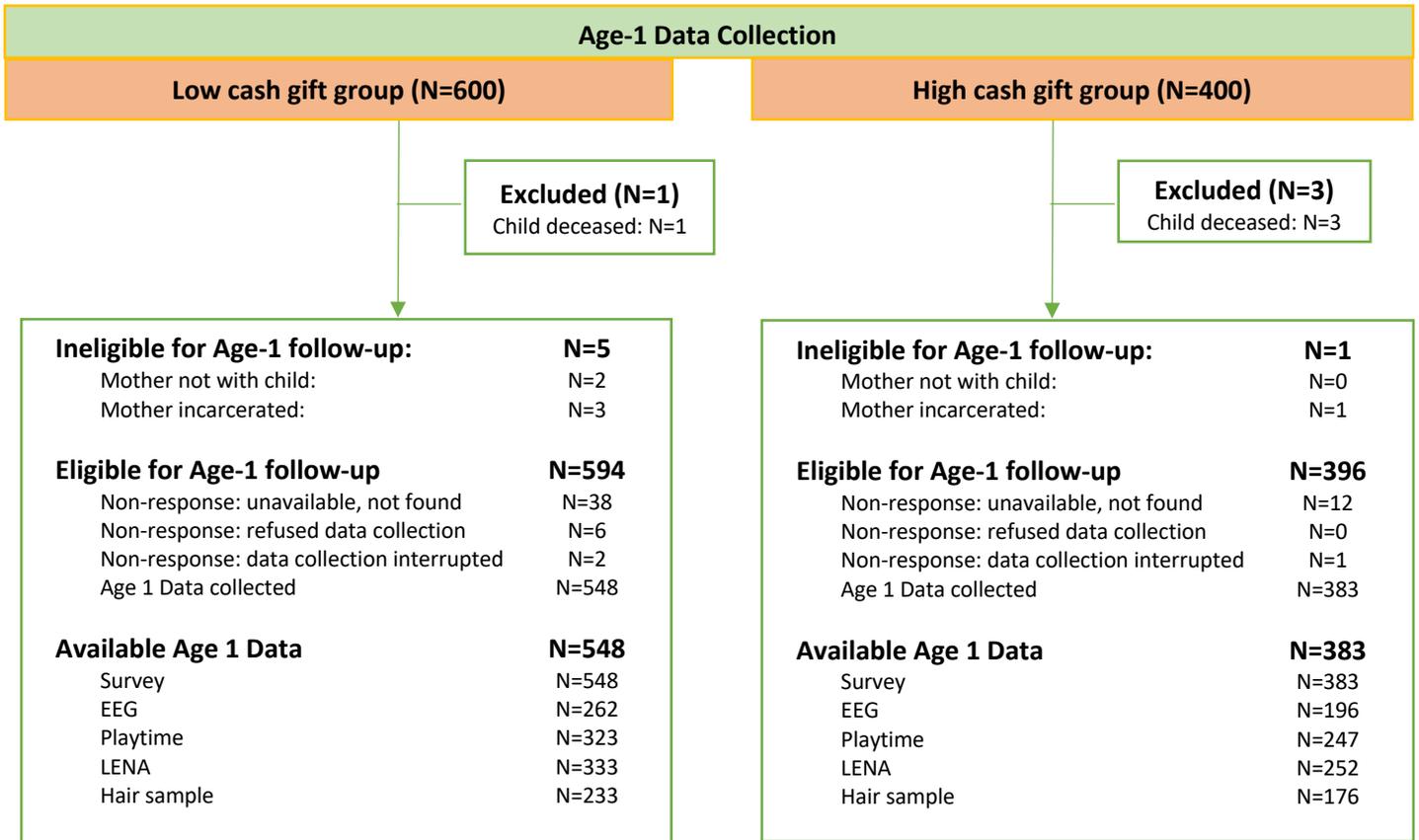
- **About this Section:** Although not a survey measure, the Age-1 data release also includes variables that measure maternal hair cortisol concentration, which is a pre-registered outcome. All mothers who participated in an in-person interview (interviews that occurred prior to March 14, 2020) were asked to provide a hair sample. If the mother agreed to provide a sample of her hair, the interviewer then completed screening for use of any steroids or other factors that may disrupt the ability to measure cortisol levels. If the mother was able to provide a usable hair sample, the interviewer collected a sample of hair which was then sent to a lab to measure the level of cortisol. Hair samples were received from 409 mothers, resulting in 372 hair samples with usable cortisol values (the remaining hair samples were not able to be analyzed due to too little hair being collected or other technical reasons).
- **Raw Variables:** There are a series of raw variables related to the administration of the hair collection protocol and screening for eligibility to provide hair. These variables are being released as is. In addition to the administration variables from the survey instrument, the public data also contain measures of hair weight and hair cortisol level of the hair sample obtained for all hair with analyzable samples. The variable `hair_cortol` identifies the raw values of hair cortisol in pg/mg (picograms per milligram) for all hair with analyzable sample levels. If a participant either did not provide a hair sample, or the hair sample did not result in a measurable cortisol level, there is missing data on this variable.
- **Generated Variables:** To ensure hair cortisol levels are within an expected range, values above 750 and equal to or less than 0 are assigned a missing value. To account for potential outliers, values below 750 are winsorized to the 99th percentile. The generated variable `mcortisol1` contains the values once these steps have occurred. The variable `mcortlog1` is the log-transformed, pre-registered measure of maternal stress as measured by hair cortisol.

Section T: Additional Info

No notes for this section

APPENDIX TABLES AND FIGURES

Appendix Figure 1. Age 1 Consort Diagram



Appendix Table 1: Maternal and Family Focused Pre-Registered Hypotheses

Domains (in gray) and sub-domains	Measure/Item source	Psychometrics	Age preregistered Primary Outcome	Age preregistered Secondary Outcome	Measures (All measures between grey lines will be subject to multiple testing adjustments)
Household Economic Hardship					
Index of economic stress	MTO; Kling, Liebman, Katz, 2007			1, 2, 3	Additive index of dichotomous variables (higher score=more stress): 1. worried about expenses? (0: occasionally or never; 1: frequently or more) 2. whether spent more than income? (0: no; 1: yes) 3. missed rent or mortgage (0 if homeless or not missed; 1 if missed rent or mortgage) 4. Set aside rainy day funds for 1 mo (0: Yes 1: No) 5. Ability to cover expenses for 1 mo with loss of income (0: Yes; 1: No) 6. in past 12 mos, missed payments for water, gas, oil, electricity? (0: no or not applicable; 1: yes) 7. in past 12 mos, gas, water, electricity ever shut off? (0: no; 1: yes) 8. Since child's birth, have you ever been evicted or forced to leave? (0: No; 1: Yes)* 9. needed medical or dental care and did not get it? (0=no; 1=yes) *changes to "in the past 12 months" for surveys at ages 2 and 3
Household Poverty rate	US Census Bureau			1, 2, 3	Measured using the Census Bureau's poverty thresholds by size of family and number of children
Index of food insecurity	Economic Research Service, USDA, 2012			1, 2, 3	Additive index of 5 dichotomized items (higher score=more food insecurity): 1. Food didn't last, no \$ for more (0: Never true, 1: sometimes or often true) 2. Can't afford balanced meals (0: Never true, 1: sometimes or often true) 3. Cut size or skip meals (0: No; 1: Yes) 4. Eat less than should (0:No; 1: Yes) 5. Hungry (0:No; 1: Yes)
Social Services Receipt					
Number of Benefits received by mother	Study PIs			1, 2, 3	Additive index of dichotomized items (higher score=more benefits received): 1. Food stamps SNAP (0: not currently receiving; 1: currently receiving) 2. Free or reduced childcare* 3. Early Head Start or HS* 4. Women, Infants and Children (WIC) 5. State Unemployment 6. Cash assistance/TANF* 7. Medicaid coverage for self 8. Housing assistance 10. LIHEAP/ heat/AC assistance* *Indicates benefits that are not being asked about at age 3.
Mother's Labor Market and Education Participation					
Time to labor market reentry from birth	Current Population Survey			1	Continuous outcome: # of months until mom's reentry into labor market from birth of child derived from the following items: 1. did you ever work for pay since child's birth? 2. in what months did you work for pay?
Time to full-time labor market reentry from birth	Current Population Survey			1	Continuous outcome: # of months until mom's full-time reentry into labor market from birth of child derived from the following items: 1. did you ever work full time since child's birth? 2. in what months did you work full time?
Mother's education and training attainment	Current Population Survey			1, 2, 3	Dichotomous variable indicating that mother participated in education and/or job training activities since birth* *changes to "in the past 12 months" for surveys at ages 2 and 3
Child-Focused Expenditures					
Index of child-focused expenditures (since birth)	Lugo-Gil, Yoshikawa, 2006			1	Additive index of the following dichotomous items (higher score=more purchased): Since child's birth, purchased... 1. Crib? 2. Car seat? 3. High chair? 4. Safety covers for outlets? 5. Latches for cabinets? 6. Gate? 7. Smoke detector? 8. books (yes/no)?
Index of child-focused expenditures (in past 30 days)	Lugo-Gil, Yoshikawa, 2006			1, 2, 3	Continuous dollar amount of age-relevant items*: Past 30 days, total \$ amount spent on... 1. books 2. toys 3. clothes 4. diapers 5. videos for age 1; 1. books 2. toys 3. clothes 4. activities 5. videos for ages 2 and 3
Cost of paid child care	National Study of Early Care and Education			1, 2, 3	Out of pocket spending on child care last week. 1. altogether, about how much money did you spend out-of-pocket on all of [CHILDNAMEF]'s child care arrangements last week?
Use of center-based care	National Study of Early Care and Education			1	1. Has child spent any time in childcare or day care? (Y/N)
				2, 3	1. Has child spent 5 or more hours in a child care or day care center last week? (Y/N)
Housing and Neighborhoods					
Index of perceptions of neighborhood safety	MTO; Kling, Liebman, Katz, 2007			1, 2, 3	Additive index of two items (higher score=feels more safe). 1. how safe during day? (3: very safe, 2: safe, 1: unsafe, 0: very unsafe) 2. how safe during night? (3: very safe, 2: safe, 1: unsafe, 0: very unsafe)
Index of housing quality	MTO; Kling, Liebman, Katz, 2007			1	Additive index of 7 items (higher score=higher quality): 1. Bad walls (0: big problem; 1: small problem; 2: not problem) 2. bad plumbing 3. rodents 4. cockroaches 5. bad windows 6. bad heat 7. overall condition (3: excellent, 2: good 1: fair, 0: poor)
				2	Additive index of 8 items (higher score=higher quality): 1. Bad walls (0: big problem; 1: small problem; 2: not problem) 2. bad plumbing 3. rodents 4. cockroaches 5. bad windows 6. bad heat 7. bad air condition 8. bad locks 9. overall condition (3: excellent, 2: good 1: fair, 0: poor)
Homelessness	MTO; Kling, Liebman, Katz, 2007			1, 2, 3	Additive index of two dichotomized items (higher score=more homelessness): 1. Since child's birth, have you been homeless?* (0: Yes; 1: No) 2. Since birth, have you been in a group shelter? (0: Yes; 1: No) *changes to "in the past 12 months" for surveys at ages 2 and 3
Excessive Residential mobility	MTO; Kling, Liebman, Katz, 2007			1, 2, 3	Moved three or more times since birth of baby* (Y/N) *changes to "in the last 12 months" for surveys at ages 2 and 3
Neighborhood poverty	Kling, Liebman, Katz, 2007			1, 2, 3	# of residents below poverty line in census tract divided by total number of residents in census tract

Appendix Table 1: Maternal and Family Focused Pre-Registered Hypotheses

Domains (in gray) and sub-domains	Measure/Item source	Psychometrics	Age preregistered Primary Outcome	Age preregistered Secondary Outcome	Measures (All measures between grey lines will be subject to multiple testing adjustments)
Family and Maternal Perceived Stress					
Perceived stress	Cohen et al., 1994, 1983	alpha: .86		1, 2	Perceived Stress Scale (PSS): additive index of 9 items (0: never; 1: almost never; 2: sometimes; 3: fairly often; 4: very often) 1. upset because of something unexpected 2. felt unable to control important life things 3. felt nervous and stressed 4. confident in ability to handle personal probs (reverse coded - rc) 5. couldn't cope with all things to do 6. control of irritations in life (rc) 7. "on top of things" (rc) 8. angered bc of things outside control 9. could not overcome difficulties
				3	Perceived Stress Scale (PSS): additive index of 10 items (0: never; 1: almost never; 2: sometimes; 3: fairly often; 4: very often) 1. upset because of something unexpected 2. felt unable to control important life things 3. felt nervous and stressed 4. confident in ability to handle personal probs (reverse coded - rc) 5. couldn't cope with all things to do 6. control of irritations in life (rc) 7. "on top of things" (rc) 8. angered bc of things outside control 9. could not overcome difficulties 10. felt things were going "your way" (rc)-
Parenting stress	Items 1-4: Project GAIN Items 5-7: PSID-Child Development Supplement			1, 2	Aggravation in Parenting Scale: additive index of 7 items (0: Strongly agree-5: Strongly disagree): 1. confidence in parenting abilities 2. feels good about parenting abilities 3. thinks good parent 4. kids will say she was wonderful 5. giving up more for kids than ever expected 6. feels trapped (rc) 7. unable to do different things bc of kids (rc)
Maternal Happiness and Optimism					
Global happiness	The General Social Survey from NORC			1, 2, 3	One-item with 3-point response scale "Taken altogether, how happy are you these adys?" (0: not happy; 1: pretty happy; 2: very happy)
Maternal Agency	Snyder et al., 1991	alpha: .86 test-retest: .81		1, 2, 3	HOPE Scale: additive index of 8 items with 5-point response scale (0: definitely false; 5: definitely true) 1. think of ways to get out of a jam 2. energetic pursuit of goals 3. lot of ways around any problem 4. ways to get what's important 5. solves problems 6. past has prepared me for future 7. pretty successful in life 8. meets goals set for oneself
Maternal Physiological Stress					
Maternal hair cortisol	Ursache et al., 2017		45-48 months	1	Measured using a sample of hair that is >=15mg in weight and ~3cm long; analyzed with sensitive and specific enzyme-linked immunosorbent assay; assay readout converted to pg cortisol per mg dry hair weight
Maternal Mental Resources					
Maternal cognitive resources	Zelazo et al., 2013	test-retest: .92		45-48 months	Flanker Inhibitory Control and Attention Test: additive score of two outcome vectors (accuracy and response time)
Maternal Mental Health					
Index of maternal depression	Kroenke & Spitzer, 2002			1, 2, 3	PHQ-8: additive index of 8 items (0: not at all; 1: several days; 2: more than half of days; 3: every day) 1. little interest or pleasure doing things 2. feeling down, depressed, hopeless 3. trouble sleeping or sleep too much 4. feel tired and no energy 5. poor appetite or overeating 6. feel like a failure 7. trouble concentrating 8. moving slowly or fidgety
Index of maternal anxiety	Steer & Beck, 1997	alpha: .92 test-retest: .75		1, 3	Beck Anxiety Inventory: additive index of 21 common anxiety symptom items (0: not at all; 1: mildly; 2: moderately; 3: severely bothersome)
	Spitzer et al., 2006	alpha: .92 test-retest: .83		2, 3	GAD-7: additive index of 7 items (0: not at all; 1: several days; 2: more than half the days; 3: nearly every day)
Maternal Substance Abuse					
Alcohol and cigarette use	MTO; Kling, Liebman, Katz, 2007			1, 3	Additive index of the following items (0: never in last year; 1: less than 1x per month; 2: several times per month; 3: several times per week; 4: everyday): 1. How often do you smoke cigarettes? 2. How often drink alcohol?
Opioid use	MTO; Kling, Liebman, Katz, 2007			1, 3	Number of times of opioid use in the past year (0: never in last year; 1: less than 1x per month; 2: several times per month; 3: several times per week; 4: everyday):
Chaos in Home					

Appendix Table 1: Maternal and Family Focused Pre-Registered Hypotheses

Domains (in gray) and sub-domains	Measure/Item source	Psychometrics	Age preregistered Primary Outcome	Age preregistered Secondary Outcome	Measures (All measures between grey lines will be subject to multiple testing adjustments)
Index of chaos in the home	Evans et al., 2005	alpha: .77 test-retest: .93		1, 2	Home Environment Chaos Scale: additive index of 20 items (higher score=more chaos): (0: not true; 1: true) 1. can find things (reverse coded - rc) 2. little commotion in home (rc) 3. always rushed 4. can "stay on top of things" (rc) 5. always late 6. "zoo" in home 7. can talk w/o interruption (rc) 8. always a fuss 9. family plans don't work out 10. can't hear oneself think at home 11. drawn into others' arguments 12. can relax at home (rc) 13. phone takes up a lot of time 14. atmosphere is calm at home (rc) 15. regular morning routine (rc) 16. eat together during daily (rc) 17. evening routine with child (rc) 18. regular late afternoon routine with child (rc) 19. child goes to bed at regular time (rc) 20. set aside for talking with child daily (rc)
Maternal Relationships*					
Physical Abuse	Fragile Families and Child Wellbeing Study			1,2	1. Ever abused? (1: yes; 0: no)
Frequency of Arguing	Fragile Families and Child Wellbeing Study			1,2	1. How often argue about things that are important to you? (1: never; 2: almost never; 2: sometimes; 3: fairly often; 4: very often)
Relationship quality	Fragile Families and Child Wellbeing Study			1	Additive index of the following items (higher score=higher qual rel) 1. Partner fair and willing to compromise? (3: Often; 2: sometimes; 1: never) 2. partner expressed affection or love? (3: Often; 2: sometimes; 1: never) 3. partner insulted or criticized you or your ideas (0: Often; 1: sometimes; 2: never) 4. partner made you feel down or bad about yourself during an argument? (0: Often; 1: sometimes; 2: never) 5. partner encouraged or helped you to do things that were important to you? (2: Often; 1: sometimes; 0: never) 6. partner isolated you? (0: Often; 1: sometimes; 2: never) 7. partner hurt you physically (0: Often; 1: sometimes; 2: never) 8. partner sexually abused you? (0: Often; 1: sometimes; 2: never) 9. partner listened to you? (3: Often; 2: sometimes; 1: never) 10. partner made you feel afraid? (0: Often; 1: sometimes; 2: never) 11. partner threatened or hurt your child/children? (0: Often; 1: sometimes; 2: never)
				2, 3	Dichotomous indicator of relationship quality, where poor quality is defined as 1 if the mother is in a relationship and has a score of 26 or below on the relationship quality scale (approximately the bottom tercile of the low cash gift group distribution of scores) and a 0 either if the mother is not in a relationship or is in a relationship and has a relationship quality index score of 27 or above (approximately in the top two terciles of the distribution).
Maternal Physical Health					
Global health	Idler & Benyamini, 1997			1, 2	One item with 5-point response scale "overall, how would you describe your health..." (0: excellent-5: poor)
Sleep	Yu et al., 2012			1, 3	Additive index of the following items (higher score=higher qual sleep): 1. Quality of sleep (0: very poor-5: very good) 2. Difficulty falling asleep (0: not at all; 5: very much) (rc) 3. Felt tired (0: not at all-5: very much) (rc)
Mother's BMI	CDC scales			45-48 months	Calculated by dividing weight by stature
Parent-Child Interaction Quality					
Adult word count	Xu et al (2009), LENA foundation			1	Measured using LENA processing software
Conversational turns	Xu et al (2009), LENA foundation			1	Measured using LENA processing software
Index of mother's positive parenting behaviors	Roggman, et al., 2013; Griffen & Friedman, 2007; Belsky, et al., 2007	inter-rater reliability varies by domain: .69-.80; alpha: .78	45-48 months	1	Measured using PICCOLO coding of parenting behaviors from three sub-scales (affection, responsiveness, encouragement and teaching) with responses ranging from 0: absent, 1: barely, 2: clearly (at age 1); will be replaced at age 45-48 months using NICHD parent-child interaction task, following pilot testing
Maternal Epigenetic Age^					
Epigenetic age	Fiorito et al., 2017			45-48 months	Measured by the Horvath Method
Maternal DNA Methylation^					
DNA methylation	Hughes, et al., 2018; Cao-Lei et al., 2014			45-48 months	Analyzed using genomic-wide differences
Frequency of Parent Child Activity					
Self-Report of Parent-child activities	Rodriguez & Tamis-LeMonda, 2011			1	Additive index of 4 items with response scale (higher score=higher frequency of activities): 1. read books (0: rarely or never; 1: a few times/month; 2: a few times/week ; 4:everyday) 2. tell stories 3. play together 4. play groups
				2, 3	Additive index of 5 items with response scale (higher score=higher frequency of activities): 1. read books (0: rarely or never; 1: a few times/month; 2: a few times/week ; 4:everyday) 2. tell stories 3. play together 4. play groups 5. play pretend games
Maternal Discipline*					
Spanking discipline strategy	Reichman et al., 2001			1, 2, 3	Dichotomous indicator using the following item: 1. In past month, have you spanked child due to misbehavior (1: yes; 2:no)
Notes. The previous version of this table referred to "waves" of data collection. For clarity, we have replaced "wave" with "age", with both referring to the age of the baby at planned data collection.					
Minor, non-substantive changes may be made to the wording of specific items across data collection years.					
* indicates that items were omitted or programmed incorrectly in the age 1 survey administered to mothers and cannot be used to calculate outcomes. These include item 5 from the index of food insufficiency ("hungry"), and item 11 from the relationship quality index ("partner threatened or hurt your child/children?").					
^ indicates outcomes that were not administered at age 1 once in-person interviews switched to phone interviews due to COVID-19.					
Indicates that item was omitted from previous pre-registrations but was administered to mothers and is being included in the outcome analyses.					
*Indicates that the sub-domain was called something different in previous versions of this table. The sub-domain "Food Insecurity" was previously referred to as "Food Insufficiency".					

Appendix Table 1: Maternal and Family Focused Pre-Registered Hypotheses

Domains (in gray) and sub-domains	Measure/Item source	Psychometrics	Age preregistered Primary Outcome	Age preregistered Secondary Outcome	Measures (All measures between grey lines will be subject to multiple testing adjustments)
Due to COVID-19, the age 2 and age 3 data collection wave is in the form of a phone survey. Thus, sub-domains that were supposed to be measured in-person at ages 2 or age 3 are being postponed to ages 45-48 months. These domains include: index of mother's positive parenting behaviors, epigenetic age, DNA methylation, BMI, physiological stress, cognitive resources. Additionally, sub-domains that we had not intended to include in pre-registration at age 3 have been added to the phone survey at age 3 and to the pre-registration table. These include: self-report of parent-child activities, spanking discipline strategy, anxiety.					
Certain sub-domains were pre-registered at age 3 and are no longer preregistered because they are not being included in the age 3 data collection (due to time constraints). These include: global health, physical abuse, index of chaos in the home, parenting stress, index of housing quality.					

Preregistered measures	Source 1	Source 2
Household Economic Hardship		
Index of economic stress	Kling, J.R., Liebman, J.B., Katz, L.F. (2007). Experimental analysis of neighborhood effects. <i>Econometrica</i> , 75(1), 83-119.	http://www2.nber.org/mtopublic/
Index of food insecurity	https://www.ers.usda.gov/media/8282/short2012.pdf	
Household poverty rate	Fontenot, Kayla, Jessica Semega, and Melissa Kollar, U.S. Census Bureau, Current Population Reports, P60-263, Income and Poverty in the United States: 2017, U.S. Government Printing Office, Washington, DC, 2018.	
Social Services Receipt		
Number of Benefits received by mother	Study PIs	
Mother's Labor Market and Education Participation		
Time to labor market reentry from birth	Current Population Survey, retrieved from:	
Time to full-time labor market reentry from birth	https://www.census.gov/programs-surveys/cps/technical-documentation/questionnaires.html	
Mother's education and training attainment		
Child-Focused Expenditures		
Index of child-focused expenditures	Lugo-Gil, J., Yoshikawa, H. (2006). Assessing expenditures on children in low-income, ethnically diverse, and immigrant families. National Poverty Center Working Paper Series, 06-36.	
Child-focused expenditures		
Cost of paid child care	National Study of Early Care and Education	
Use of center-based care		
Housing and Neighborhoods		
Index of perceptions of neighborhood safety		
Index of housing quality	Kling, J.R., Liebman, J.B., Katz, L.F. (2007). Experimental analysis of neighborhood effects. <i>Econometrica</i> , 75(1), 83-119.	
Residential mobility		
Homelessness		
Neighborhood poverty		
Family and Maternal Perceived Stress		
Perceived stress	Cohen, S., Kamarck, T., & Mermelstein, R. (1994). Perceived stress scale. <i>Measuring stress: A guide for health and social scientists</i> .	Cohen, S., Kamarck, T., Mermelstein, R. (1983). A global measure of perceived stress. <i>Journal of Health and Social Behavior</i> , 24(4), 385-396.
Parenting stress	PSID-CDS Aggravation in Parenting Scale https://psidonline.isr.umich.edu/cds/cdsi_usergd.pdf for items 5-7 5. giving up more for kids than ever expected 6. feels trapped (rc) 7. unable to do different things bc of kids (rc)	Project GAIN (Gaining Access to Income Now) https://preventionboard.wi.gov/Pages/OurWork/ProjectGAIN.aspx for items 1-4 1. confidence in parenting abilities 2. feels good about parenting abilities 3. thinks good parent 4. kids will say she was wonderful
Maternal Happiness and Optimism		
Global happiness	The General Social Survey from NORC at the University of Chicago, retrieved from: http://gss.norc.org/Get-Documentation/questionnaires	
Maternal Agency	Snyder, C.R., Harris, C., Anderson, J.R., Holleran, S.A., Irving, L.M., Sigmon, S.T., Yoshinobu, L., Gibb, J., Langelle, C., Hamey, P. (1991). The will and the ways: development and validation of an individual-differences measure of hope. <i>Journal of Personality and Social Psychology</i> , 60(4), 570-585.	
Maternal Epigenetic Age		
Epigenetic age	Fiorito, G., Polidoro, S., Dugue, P.-A., Kivimaki, M., Ponzi, E., Matullo, G., Guarera, S., Assumma, M.B., Georgiadis, P., Kyrtopoulos, S.A., Krogh, V., Palli, D., Panico, S., Sacerdota, C., Tumino, R., Chadeau-Hyam, M., Stringhini, S., Severi, G., Hodge, A.M., Giles, G.G., Marioni, R., Karlsson Linner, R., O'Halloran, A.M., Kenny, R.A., Layte, R., Baglietto, L., Robinson, O., McCrory, C., Milne, R.L., Vineis, P. (2017). Social adversity and epigenetic aging: a multi-cohort study on socioeconomic differences in peripheral blood DNA methylation. <i>Nature</i> , 7(16266), doi: 10.1038/s41598-017-16391-5.	
Maternal DNA Methylation		

DNA methylation	Hughes, A., Smart, M., Gorrie-Stone, T., Hannon, E., Mill, J., Bao, Y., Burrage, J., Schalkwyk, L., Kumari, M. (2018). Socioeconomic position and DNA methylation age acceleration across the life course. <i>American Journal of Epidemiology</i> , 187(11), doi: 10.1093/aje/kwy155.	Cao-Lei, L., Massart, R., Suderman, M.J., Machnes, Z., Elgbeili, G., Laplante, D.P., Szyf, M., King, S. (2014). DNA methylation signatures triggered by prenatal maternal stress exposure to a natural disaster: Project ice storm. <i>PLOS ONE</i> , https://doi.org/10.1371/journal.pone.0107653 .
Maternal Physiological Stress		
Maternal hair cortisol	Ursache, A., Merz, E.C., Melvin, S., Meyer, J., Noble, K.G. (2017). Socioeconomic status, hair cortisol and internalizing symptoms in parents and children. <i>Psychoneuroendocrinology</i> , 78, 142-150.	
Maternal Mental Resources		
Maternal cognitive resources	Zelazo, P.D., Anderson, J.E., Richler, J., Wallner-Allen, K., Beaumont, J.L., & Weintraub, S. (2013). II NIH Toolbox Cognitive Battery (CB): Measuring executive function and attention. Monographs of the Society for Research in Child Development, 78(4), 16-33.	
Maternal Mental Health		
Index of maternal depression	Kroenke, K. & Spitzer, R.L. (2002). The PHQ-9: a new depression diagnostic and severity measure. <i>Psychiatric annals</i> , 32(9), 509-515.	
Index of maternal anxiety	Steer, R.A. & Beck, A.T., (1997). Beck Anxiety Inventory. In C.P. Zalaquett & R.J. Wood (Eds), <i>Evaluating stress: A book of resources</i> (pp. 23-40). Lanham, MD, US: Scarecrow Education	
Index of maternal anxiety	Spitzer R.L, Kroenke K, Williams J.B.W, Löwe B. A Brief Measure for Assessing Generalized Anxiety Disorder: The GAD-7. <i>Arch Intern Med</i> . 2006;166(10):1092–1097. doi:10.1001/archinte.166.10.1092	
Maternal Physical Health		
Global health	Idler, E. L., & Benyamini, Y. (1997). Self-rated health and mortality: a review of twenty-seven community studies. <i>Journal of health and social behavior</i> , 21-37.	
Sleep	Yu, L., Buysse, D. J., Germain, A., Moul, D. E., Stover, A., Dodds, N. E., ... & Pilkonis, P. A. (2012). Development of short forms from the PROMIS™ sleep disturbance and sleep-related impairment item banks. <i>Behavioral sleep medicine</i> , 10(1), 6-24.	
Mother's BMI	Kuczumski, R. J. (2000). CDC growth charts; United States.	
Maternal Substance Abuse		
Alcohol and cigarette use	Kling, J.R., Liebman, J.B., Katz, L.F. (2007). Experimental analysis of neighborhood effects. <i>Econometrica</i> , 75(1), 83-119.	
Opioid use		
Chaos in Home		
Index of chaos in the home	Evans, G.W., Gonnella, C., Marcynyszyn, L.A., Gentile, L., & Salpekar, N. (2005). The role of chaos in poverty and children's socioemotional adjustment. <i>Psychological Science</i> , 16(7), 560-565.	
Maternal Relationships		
Physical Abuse	User's Guide for the Fragile Families and Child Wellbeing Study Public Data, Year 3. (2018). Retrieved from: https://fragilefamilies.princeton.edu/sites/fragilefamilies/files/year_3_guide.pdf#page=84	
Frequency of Arguing Relationship quality Parent-Child Interaction Quality		
Adult word count	Xu, D., Yapanel, U., & Gray, S. (2009). Reliability of the LENA Language Environment Analysis System in young children's natural home environment. <i>LENA Foundation</i> .	
Conversational turns Index of mother's positive parenting behaviors	Roggman, L.A., Cook, G.A., Innocenti, M.S., Norman, V.J., Christiansen, K. (2013). Observations Linked to Outcomes (PICCOLO) Of Diverse Ethnic Groups. <i>Infant Mental Health Journal</i> , 34(4), 290-306.	Griffin, J. A., & Friedman, S. L. (2007). NICHD Study of Early Childcare and Youth Development. <i>National Institute of Health</i>
Frequency of Parent Child Activity		
Self-Report of Parent-child activities	Rodriguez, E. T., & Tamis-LeMonda, C. S. (2011). Trajectories of the home learning environment across the first 5 years: Associations with children's vocabulary and literacy skills at prekindergarten. <i>Child development</i> , 82(4), 1058-1075.	
Maternal Discipline		
Spanking discipline strategy	Reichman, N.E., Teitler, J.O., Garfinkel, I., McLAnahan, S.S. (2001). Fragile Families: Sample and design. <i>Children and Youth Services Review</i> , 23(4-5), 303-326.	

Domains (in gray) and sub-domains	Measure source	Psychometrics	Age preregistered Primary Outcome	Age preregistered Secondary Outcome	Measures (All measures between grey lines will be subject to multiple testing adjustments)
Language Development					
Language Milestones	Squires et al., 2009	sensitivity .86 specificity .85		1	Measured using ASQ- Communication Subscale
Language Processing	Golinkoff et al., 2017		45-48 months		Measured by Quick Interactive Language Screener (QUILS)- Language Processing Subscale
Vocabulary*	Fenson, 2002	internal consistency .85		2	Measured by short-form versions of the MacArthur Communicative Development Inventories
	Martin & Brownell, 2011 Martin & Brownell, 2010			45-48 months	Measured by Receptive One Word Picture Vocabulary Test (ROWPVT) and Expressive One Word Picture Vocabulary Test (EOWPVT)
Maternal concern for language delay	Glascoe, 1997		3		Measured by the sum of the two questions included in the PEDS on expressive language and articulation and receptive language: 1. Do you have any concerns about how your child talks and makes speech sounds? (0: No; 1: Yes or a little) 2. Do you have any concerns about how your child understands what you say? (0: No; 1: Yes or a little)
Executive Function & Self-Regulation					
Self-Regulation	Smith-Donald et al., 2007	internal consistency of assessor report (not full assessment) .82-.93	45-48 months		Measured by the Preschool Self-Regulation Assessment - PSRA (examiner report at end of lab)
Executive Function	Carlson, 2017	MEFS: validity .92 test- retest .93	45-48 months		Measured by the Minnesota Executive Function Scale
Socio-Emotional Processing					
Social-Emotional Problems	Briggs-Gowan et al., 2004	internal consistency .65-.79 test-retest reliability .87		1, 2	Measured by the Brief Infant-Toddler Social and Emotional Assessment (BITSEA)
Behavior/Emotional Problems	Achenbach et al., 2000	parent report reliability .80	3		Measured by a shortened version of the Child Behavior Checklist measuring the following areas: emotionally reactive, anxious/depressed, attention problems, and aggressive behavior
Social-Emotional Behavior*	Roggman et al., 2013; Griffen & Friedman, 2007; Belsky, 2007			1, 45-48 months	Measured using NICHD SECCYD parent-child-interaction task coding scheme, with child codes Positive Mood, Negative Mood, Activity Level, Sustained Attention, Positive Engagement at age 1 and agency, negativity, persistence, affection at ages 45-48 months
Maternal concern for behavioral and social- emotional problems	Glascoe, 1997		3		Measured by the sum of the two questions included in the PEDS on behavior and social-emotional: 1. Do you have any concerns about how your child behaves? (0: No; 1: Yes or a little) 2. Do you have any concerns about how your child gets along with others? (0: No; 1: Yes or a little)
IQ					
IQ*	Wechsler, 2012	internal consistency .95 test-retest reliability .86-.92	45-48 months		Measured by the Wechsler Nonverbal Scale of Ability
Brain Function					
Resting Brain Function	Tomalski et al., 2013; Otero et al., 2013; Marshall et al., 2004	n/a	45-48 months	1	Measured by electroencephalogram
Auditory Discrimination Brain Function*	Choeur et al., 2000; Garcia- Sierra et al., 2011; Kuhl et al., 2005	n/a		45-48 months	Measured by mismatch negativity (MMN) ERP
Health: BMI					
Body Mass Index (BMI)	Kuczmarski, 2000	n/a	45-48 months		Measured by CDC scales
Health: Physiological Stress					
Physiological Stress	Ursache et al., 2017; Meyer et al., 2014; Davenport et al., 2006	n/a		45-48 months	Measured by hair cortisol
Health: Sleep					
Sleep problems	Yu et al., 2012	reliability .9	3	1, 2	Measured by PROMIS Sleep Disturbance- Short Form adapted from ECHO; Additive index of the following items: 1. trouble falling asleep (0: never; 1: almost never; 2: sometimes; 3: almost always) 2. sleeping through night (reverse coded) 3. problem with sleep
Health: Other Indicators					
Overall Health, Medical Care, Diagnosis of Condition or Disability	Child's overall health item source: Idler & Benyamini, 1997 Halim et al., 2013	n/a	3	1, 2	Additive index of the following items*: 1. Child's overall health? (4: excellent, 3: very good, 2: good, 1: fair, or 0: poor) 2. About how many times in the last year did you take child to a doctor because [he/she] was sick? 0-1 times, 2-5 times, 6+ 3. About how many times in the last year did you take child to a doctor because [he/she] was hurt or injured? 4. Did you ever have to take child to the Emergency Room because [he/she] was sick, hurt or injured? (Y/N) 5. How many times ER? 6. Has child been diagnosed with any health condition or disability since birth? (Y/N) *factor analysis of items will be conducted to scale the index
Child Epigenetic Age					

**Appendix Table 2: Child Focused
Pre-Registered Hypotheses**

Domains (in gray) and sub-domains	Measure source	Psychometrics	Age preregistered Primary Outcome	Age preregistered Secondary Outcome	Measures (All measures between grey lines will be subject to multiple testing adjustments)
Epigenetic age Child DNA Methylation	Fiorito et al., 2017	n/a		45-48 months	Measured by the Horvath Method
DNA methylation	Hughes, et al., 2018; Cao-Lei et al., 2014	n/a		45-48 months	Analyzed using genomic-wide differences
Child Nutrition					
Consumption of healthy foods	Los Angeles County WIC Survey, 2017			2	Additive index of the number of times per day consumed the following items*: 1. eat fruits 2. eat vegetables
Consumption of unhealthy foods	Los Angeles County WIC Survey, 2017			2	Additive index of the number of times per day consumed the following items*: 1. juice, soda, chocolate milk or other sweet drinks 2. eat sweets
Any Maternal Concern for Developmental Delay					
Parents' Evaluation of Developmental Status (PEDS)	Glascoc, 1997			3	Measured by the total score across categories of components of the PEDS, which includes 10 survey items.
Total "predictive concerns" in the PEDS	Glascoc, 1997			3	Measured by the total number of maternal-reported concerns that are "predictive of developmental delay" in the PEDS
School Achievement & Behavior					
School test scores for target children and siblings	Administrative data	n/a	School age (target child)	School age (siblings)	
Student behavioral data for target children and siblings	Administrative data	n/a		School age (target child and siblings)	
<p><i>Notes.</i> The previous version of this table referred to "waves" of data collection. For clarity, we have replaced "wave" with "age", with both referring to the age of the baby at planned data collection. Minor, non-substantive changes may be made to the wording of specific items across data collection years.</p> <p>Due to COVID-19, the age 3 data collection wave is in the form of a phone survey. Thus, sub-domains that were supposed to be measured in-person at ages 2 or age 3 are being postponed to ages 45-48 months. These domains include: epigenetic Age, DNA methylation, BMI, physiological stress, language processing, self-regulation, executive function, social-emotional behavior, IQ; resting brain function, auditory discrimination brain function. The sub-domain of child vocalizations was not measured in-person at age 2 (due to COVID-19) and is not being measured at later ages, so it is removed from the pre-registration table.</p>					
<p>*Indicates that the sub-domain was called something different in previous versions of this table. The changes are listed below: -Previously "Communicative Development (Vocabulary)"; presently "Vocabulary". -Previously "Intelligence"; presently "IQ". -Previously "Language Related Brain Function"; presently "Auditory Discrimination Brain Function".</p>					
<p>Domains and sub-domains that were not previously included in this table for pre-registration at age 3 and were added include: Any Maternal Concern for Developmental Delay (domain); Maternal Concern for Behavioral and Social-Emotional Problems (sub-domain); Maternal Concern for Language Delay (sub-domain); Maternal "Predictive Concern" for Language Delay (sub-domain).</p>					

Language Development	
Language Milestones	Squires, J., Bricker, D. D., & Twombly, E. (2009). <i>Ages & stages questionnaires</i> . Baltimore, MD: Paul H. Brookes.
Language Processing	Golinkoff, R. M., De Villiers, J. G., Hirsh-Pasek, K., Iglesias, A., Wilson, M. S., Morini, G., & Brezack, N. (2017). <i>User's Manual for the Quick Interactive Language Screener (QUILS): A Measure of Vocabulary, Syntax, and Language Acquisition Skills in Young Children</i> . Paul H. Brookes Publishing Company
Vocabulary*	Fenson, L., Pethick, S., Renda, C., Cox, J. L., Dale, P. S., & Reznick, J. S. (2000). Short-form versions of the MacArthur Jackson-Maldonado, Donna, Virginia A. Marchman, and Lia C. H. Fernald. 2012. "Short-Form Versions of the Spanish MacArthur-Bates Communicative Development Inventories." <i>Applied Psycholinguistics</i> 34 (4): 837-68. Martin, N. A., & Brownell, R. (2011). ROWPVT-4: Receptive One-Word Picture Vocabulary Test. Martin, N., & Brownell, R. (2010). EOWPVT-4: Expressive One-Word Picture Vocabulary Test.
Maternal concern for language delay	Glascoe FP. <i>Parents' Evaluations of Developmental Status: A Method for Detecting and Addressing Developmental and Behavioral Problems in Children</i> . Nashville, TN: Ellsworth & Vandermeer Press, 1997.
Executive Function & Self-Regulation	
Self-Regulation	Smith-Donald, R., Raver, C. C., Hayes, T., & Richardson, B. (2007). Preliminary construct and concurrent validity of the Preschool
Executive Function	Carlson, S. M., & Zelazo, P. D. (2014). <i>Minnesota Executive Function Scale: Test Manual</i> . St. Paul, MN: Reflection Sciences, Inc. Carlson, S. M. (2017). <i>Minnesota Executive Function Scale: Technical Report, v. 2</i> . St. Paul, MN: Reflection Sciences, Inc.
Socio-Emotional Processing	
Social-Emotional Problems	Briggs-Gowan, M. J., Carter, A. S., Irwin, J. R., Wachtel, K., & Cicchetti, D. V. (2004). The Brief Infant-Toddler Social and Emotional Assessment: screening for social-emotional problems and delays in competence. <i>Journal of pediatric psychology</i> , 29 (2), 143-155.
Behavior/Emotional Problems	Achenbach, T. M., & Ruffle, T. M. (2000). The Child Behavior Checklist and related forms for assessing behavioral/emotional problems and competencies. <i>Pediatrics in review</i> , 21(8), 265-271.
Social-Emotional Behavior^	Roggman, L. A., Cook, G. A., Innocenti, M. S., Jump Norman, V., & Christiansen, K. (2013). Parenting interactions with children: Checklist of observations linked to outcomes (PICCOLO) in diverse ethnic groups. <i>Infant Mental Health Journal</i> , 34(4), 290-306. Belsky, J., Vandell, D. L., Burchinal, M., Clarke-Stewart, K. A., McCartney, K., Owen, M. T., & NICHD Early Child Care Research Network. (2007). Are there long-term effects of early child care?. <i>Child development</i> , 78 (2), 681-701. Griffin, J. A., & Friedman, S. L. (2007). NICHD Study of Early Childcare and Youth Development. National Institute of Health. Adapted script from mother-child-interaction at 15 months.
Maternal concern for behavioral and social-emotional problems	Glascoe FP. <i>Parents' Evaluations of Developmental Status: A Method for Detecting and Addressing Developmental and Behavioral Problems in Children</i> . Nashville, TN: Ellsworth & Vandermeer Press, 1997.
IQ	
IQ*	Wechsler, D. (2012). <i>Wechsler preschool and primary scale of intelligence—fourth edition</i> . San Antonio, TX: The Psychological Corporation.
Brain Function	
Resting Brain Function	Tomalski, P., Moore, D. G., Ribeiro, H., Axelsson, E. L., Murphy, E., Karmiloff-Smith, A., ... & Kushnerenko, E. (2013). Socioeconomic status and functional brain development—associations in early infancy. <i>Developmental Science</i> , 16 (5), 676-687. Otero, G. A., Pliego-Rivero, F. B., Fernández, T., & Ricardo, J. E. E. G. (2003). EEG development in children with sociocultural Marshall, P. J., Fox, N. A., & Group, B. C. (2004). A comparison of the electroencephalogram between institutionalized and community children in Romania. <i>Journal of Cognitive Neuroscience</i> , 16(8), 1327-1338.
Auditory Discrimination Brain Function*	Cheour, M., Leppänen, P. H., & Kraus, N. (2000). Mismatch negativity (MMN) as a tool for investigating auditory discrimination and sensory memory in infants and children. <i>Clinical neurophysiology</i> , 111 (1), 4-16. Garcia-Sierra, A., Rivera-Gaxiola, M., Percaccio, C. R., Conboy, B. T., Romo, H., Klarman, L., ... & Kuhl, P. K. (2011). Bilingual language learning: An ERP study relating early brain responses to speech, language input, and later word production. <i>Journal of Phonetics</i> , 39(4), 546-557. Kuhl, P. K., Coffey-Corina, S., Padden, D., & Dawson, G. (2005). Links between social and linguistic processing of speech in preschool children with autism: behavioral and electrophysiological measures. <i>Developmental science</i> , 8(1), F1-F12.

Health: BMI	
Body Mass Index (BMI)	Kuczumski, R. J. (2000). CDC growth charts; United States.
Health: Physiological Stress	
Physiological Stress	Ursache, A., Merz, E. C., Melvin, S., Meyer, J., & Noble, K. G. (2017). Socioeconomic status, hair cortisol and internalizing symptoms in parents and children. <i>Psychoneuroendocrinology</i> , <i>78</i> , 142-150.
	Meyer, J., Novak, M., Hamel, A., & Rosenberg, K. (2014). Extraction and analysis of cortisol from human and monkey hair. <i>Journal of Endocrinology</i> , <i>181</i> , 1-11.
	Davenport, M. D., Tiefenbacher, S., Lutz, C. K., Novak, M. A., & Meyer, J. S. (2006). Analysis of endogenous cortisol in hair. <i>Psychoneuroendocrinology</i> , <i>31</i> , 103-111.
Health: Sleep	
Sleep problems	Yu, L., Buysse, D. J., Germain, A., Moul, D. E., Stover, A., Dodds, N. E., ... & Pilkonis, P. A. (2012). Development of short forms from the PROMIS™ sleep disturbance and sleep-related impairment item banks. <i>Behavioral sleep medicine</i> , <i>10</i> (1), 6-24.
Health: Other Indicators	
Overall Health, Medical Care, Diagnosis of Condition or Disability	Halim, M. L., Yoshikawa, H., & Amodio, D. M. (2013). Cross-generational effects of discrimination among immigrant mothers: Perceived discrimination predicts child's healthcare visits for illness. <i>Health Psychology</i> , <i>32</i> (2), 203.
	Idler, E. L., & Benyamini, Y. (1997). Self-rated health and mortality: a review of twenty-seven community studies. <i>Journal of health and social behavior</i> , <i>21</i> , 21-37.
Child Epigenetic Age	
Epigenetic age	Fiorito, G., Polidoro, S., Dugue, P.-A., Kivimaki, M., Ponzi, E., Matullo, G., Guarrera, S., Assumma, M.B., Georgiadis, P., Kyrtopoulos, S.A., Krogh, V., Palli, D., Panico, S., Sacerdota, C., Tumino, R., Chadeau-Hyam, M., Stringhini, S., Severi, G., Hodge, A.M., Giles, G.G., Marioni, R., Karlsson Linner, R., O'Halloran, A.M., Kenny, R.A., Layte, R., Baglietto, L., Robinson, O., McCrory, C., Milne, R.L., Vineis, P. (2017). Social adversity and epigenetic aging: a multi-cohort study on socioeconomic differences in peripheral blood DNA methylation. <i>Nature</i> , <i>546</i> (7666), doi: 10.1038/s41598-017-16391-5.
Child DNA Methylation	
DNA methylation	Hughes, A., Smart, M., Gorrie-Stone, T., Hannon, E., Mill, J., Bao, Y., Burrage, J., Schalkwyk, L., Kumari, M. (2018). Socioeconomic position and DNA methylation age acceleration across the life course. <i>American Journal of Epidemiology</i> , <i>187</i> (11), doi: 10.1093/aje/kwy155.
	Cao-Lei, L., Massart, R., Suderman, M.J., Machnes, Z., Elgbeili, G., Laplante, D.P., Szyf, M., King, S. (2014). DNA methylation signatures triggered by prenatal maternal stress exposure to a natural disaster: Project ice storm. <i>PLOS ONE</i> , https://doi.org/10.1371/journal.pone.0107653 .
Child Nutrition	
Consumption of healthy foods	Los Angeles County WIC Survey. (2017). Retrieval from: http://lawicdata.org/wp-content/uploads/2014/09/WIC-Parents-Quex-English-FINAL.pdf
Consumption of unhealthy foods	Los Angeles County WIC Survey. (2017). Retrieval from: http://lawicdata.org/wp-content/uploads/2014/09/WIC-Parents-Quex-English-FINAL.pdf
Any Maternal Concern for Developmental Delay	
Parents' Evaluation of Developmental Status (PEDS)	Glascoe FP. Parents' Evaluations of Developmental Status: A Method for Detecting and Addressing Developmental and Behavioral Problems in Children. Nashville, TN: Ellsworth & Vandermeer Press, 1997.
Total "predictive concerns" in the PEDS	Glascoe FP. Parents' Evaluations of Developmental Status: A Method for Detecting and Addressing Developmental and Behavioral Problems in Children. Nashville, TN: Ellsworth & Vandermeer Press, 1997.

Appendix Table 3. Age-1 Sample Equivalence by Pre and Post COVID (n = 931)

	Pre-COVID		Post-COVID		Std Mean Difference		p-value
	Mean (sd)	N	Mean (sd)	N	Hedges' g	Cox's Index	
Child is female	0.481	605	0.518	326		0.090	0.273
Child weight at birth (pounds)	7.1	604	7.1	325	0.019		0.811
Child gestational age (weeks)	(1.033) 39.0	602	(1.099) 39.1	325	0.087		0.201
Mother age at birth (years)	(1.297) 27.1	605	(1.128) 27.3	326	0.034		0.843
Mother education (years)	(5.826) 11.9	600	(5.774) 11.8	322	-0.051		0.379
Mother race/ethnicity:							
white, non-Hispanic	0.096	605	0.095	326		-0.007	0.709
non-Hispanic	0.430	605	0.371	326		-0.149	0.178
multiple, non-Hispanic	0.043	605	0.028	326		-0.269	0.310
other or unknown	0.038	605	0.031	326		-0.128	0.743
Hispanic	0.393	605	0.475	326		0.203	0.087
Mother marital status:							
never married	0.476	605	0.402	326		-0.182	0.043
single, living with partner	0.245	605	0.252	326		0.023	0.875
married	0.203	605	0.236	326		0.117	0.326
divorced/separated	0.035	605	0.046	326		0.172	0.497
other or unknown	0.041	605	0.064	326		0.284	0.109
Mother health is good or better	0.899	605	0.896	326		-0.020	0.916
Mother depression (CESD)	0.7	605	0.7	326	-0.003		0.798
	(0.429)		(0.474)				
Cigarettes per week during pregnancy	4.4	602	3.3	322	-0.067		0.485
	(18.065)		(15.280)				
Alcohol drinks per week during pregnancy	0.0	603	0.2	325	0.130		0.158
	(0.485)		(2.093)				
Number of children born to mother	2.5	605	2.5	326	0.001		0.790
	(1.357)		(1.452)				
Number of adults in household	2.1	605	2.1	326	-0.011		0.807
	(0.993)		(0.948)				
Biological father lives in household	0.365	605	0.423	326		0.147	0.108
Household combined income	21,551	566	22,176	304	0.032		0.562
	(18250.018)		(21142.901)				
Household income unknown	0.064	605	0.067	326		0.030	0.846
Household net worth	-2,034	540	-3,742	291	-0.065		0.309
	(28306.182)		(21582.030)				
Household net worth unknown	0.107	605	0.107	326		0.000	0.871

Joint Test: Chi2(30)= 25.48, p-value= 0.653, n=931.

Notes: 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 bivariate regressions were also run without site-level fixed effects, and the p-values differed on average by 0.011. The p-values without fixed effects do not appear in the table. 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. 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>0.05

Appendix Table 4. Baseline Balance by High and Low Cash Gift Groups at Age 1 sample (n = 931)

	<u>Low Cash Gift</u>		<u>High Cash Gift</u>		<u>Std Mean Difference</u>		
	Mean (sd)	N	Mean (sd)	N	Hedges' g	Cox's Index	p-value
Child is female	0.505	548	0.478	383		-0.065	0.402
Child weight at birth (pounds)	7.1 (1.080)	547	7.1 (1.020)	382	-0.024		0.724
Child gestational age (weeks)	39.1 (1.234)	544	39.0 (1.251)	383	-0.048		0.486
Mother age at birth (years)	26.9 (5.838)	548	27.4 (5.754)	383	0.082		0.190
Mother education (years)	11.9 (2.832)	541	11.9 (2.978)	381	0.017		0.782
Mother race/ethnicity:							
white, non-Hispanic	0.106	548	0.081	383		-0.180	0.159
Black, non-Hispanic	0.387	548	0.441	383		0.135	0.071
multiple, non-Hispanic	0.042	548	0.031	383		-0.191	0.369
other or unknown	0.044	548	0.023	383		-0.406	0.070
Hispanic	0.422	548	0.423	383		0.002	0.769
Mother marital status:							
never married	0.418	548	0.496	383		0.191	0.017
single, living with partner	0.270	548	0.214	383		-0.186	0.049
married	0.215	548	0.214	383		-0.004	0.998
divorced/separated	0.046	548	0.029	383		-0.290	0.181
other or unknown	0.051	548	0.047	383		-0.052	0.763
Mother health is good or better	0.880	548	0.924	383		0.306	0.022
Mother depression (CESD)	0.7 (0.443)	548	0.7 (0.448)	383	-0.009		0.846
Cigarettes per week during pregnancy	4.7 (20.316)	544	3.1 (11.100)	380	-0.091		0.118
Alcohol drinks per week during pregnancy	0.2 (1.662)	546	0.0 (0.389)	382	-0.097		0.091
Number of children born to mother	2.4 (1.372)	548	2.5 (1.416)	383	0.079		0.242
Number of adults in household	2.1 (0.984)	548	2.0 (0.966)	383	-0.062		0.351
Biological father lives in household	0.411	548	0.350	383		-0.157	0.061
Household combined income	22,313.09 (21,282.42)	514	20,984.60 (16,008.41)	356	-0.069		0.300
Household income unknown	0.062	548	0.070	383		0.079	0.616
Household net worth	-2,187.56 (29,365.99)	489	-3,267.96 (20,722.26)	342	-0.041		0.537
Household net worth unknown	0.108	548	0.107	383		-0.006	0.996

Joint Test: Chi2(30)= 29.55, p-value= 0.385, n=927.

Notes: 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 p-values without fixed effects do not appear in the table. 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 Hedge's g for continuous variables and Cox's Index for dichotomous variables. 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>0.05 All respondents with missing data on gestational age are in the control group. Thus, this dummy was removed from the joint test due to perfectly predicting failure. This results in a slightly smaller sample for the joint test.

Appendix Table 5. Age 1 Instrument Versions

Versiondatea1	Description
7/18/2019	Released to production.
7/29/2019	Spanish released to production.
10/2/2019	<ol style="list-style-type: none"> 1. Updated ACASI section so data would not need to be re-entered if Iwer suspends during ACASI 2. Updated Spanish text
11/18/2019	<ol style="list-style-type: none"> 1. Updated Mother’s Employment section so that all R’s were asked if they were self-employed (G44). 2. Updated ClinCard replacement Section U: <ul style="list-style-type: none"> • U1: Revised text and added image of 4MyBabyCard sticker • Added question to record mom’s phone number (U1a) and enter the TokenID# associated with mom’s replacement card (U1b) • Revise text for ClinCard reminder (U4) and changed from Y/N to Continue (01). • Removed U5 & U6
01/14/2020	<p>Updated Spanish translations to Section U:</p> <ul style="list-style-type: none"> • Replaced “month and year” with “month and day” when specifying the 4 digit pin R’s replacement card will be set to (U1)
4/23/2020	<p>Updated “Emergency Funds” (L19) Spanish version to include 1 month time frame instead of “3 months”.</p> <ul style="list-style-type: none"> • Added a timestamp field before L19 to capture date/time when L19/L20 was asked.