

**Study Title:** Connect to Baby: A Pilot Study of a Parenting and Coparenting Program for New Parents

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## Specific Aims

Responsive, contingent interactions between parents and infants (i.e., “serve and return” exchanges) profoundly shape infant brain architecture and thus children’s socioemotional, language, and cognitive development.<sup>1</sup> Poverty, and its associated contextual stressors, can undermine parents’ capacity to engage in contingent interactions by negatively affecting parents’ mental health<sup>2–4</sup>; as a result, children growing up in low-income families without strong buffering relationships may experience lifelong repercussions.<sup>5–7</sup> Although parenting interventions can increase parenting quality and improve child development in low-income contexts,<sup>8</sup> — such as the ones funded by the federal Maternal, Infant, and Early Childhood Home Visiting (MIECHV) program — the vast majority of programs for parents in poverty yield only modest effects that often fade.<sup>9</sup> Existing research suggests that these findings may stem, in part, from three key weaknesses in existing parenting programs: 1) a focus on mothers, rather than **mothers and fathers**; 2) a focus on the parent-child relationship to the exclusion of **the coparenting relationship**; and 3) **low program retention rates**.

Our team—which includes the developers of Just Beginning (JB) and Family Foundations (FF)—have leveraged selected JB and FF content in combination with unique technological features to create a novel intervention: Connect to Baby (CTB), a 6-session manualized intervention. Parenting and coparenting quality are selected as targets for their strategic influence on infant and child development: contingent, responsive interactions between parents and infants are associated with better lifelong socioemotional and cognitive outcomes.<sup>10</sup> Similarly, supportive coparenting relationships and coordination are associated with enhanced parent mental health, parenting quality, and children’s socioemotional and cognitive outcomes.<sup>11</sup> CTB thus serves **mother and father dyads**, focuses on **the coparenting relationship** alongside the parent-child relationship, and **bolsters recruitment and retention using innovative technological strategies**.

A key innovation of CTB lies in the introduction and rehearsal of four interaction skills — Noticing, Following, Talking, and Encouraging (NiFTE, pronounced “nifty”) — to foster serve and return interactions with infants as well as supportive, cooperative coparenting interactions between mothers and fathers. To engage both fathers and mothers, CTB recruits parents soon after the child’s birth, capitalizing on the “magic moment” of childbirth<sup>12</sup> and uses father-inclusive digital media content to engage men.<sup>13</sup> To maximize program reach and sustainability, CTB is designed to be delivered within Early Head Start (EHS), a family-serving agency parents already use and trust. Finally, our approach is innovative in that we propose to test a hybrid in-person and remote delivery modality using both **video-enabled tablets** and **a custom-built application** to schedule sessions and share digital content. Both technology features – hybrid delivery and the custom-built application – aim to boost retention and engagement in the program by ameliorating both structural (scheduling and logistical) and cognitive barriers to participation that plague many existing parenting interventions. Using a randomized controlled trial, we will compare the efficacy of CTB delivered as part of EHS (EHS-CTB hybrid) to EHS with the digital content only (EHS-digital only); both groups will be given access to the customized application and digital content that CTB offers, but only the EHS-CTB hybrid group will receive program sessions with guided practice and feedback on NiFTE skill development. The overarching goal of the present study is to assess the efficacy of CTB’s approach to family strengthening through the following aims:

**Aim 1.** *To assess the **efficacy** of CTB at improving program targets.* Two hundred families will be recruited and randomized to one of two conditions: 1) EHS-CTB hybrid or 2) EHS-digital only. We hypothesize EHS-CTB hybrid will increase coparenting communication quality and parenting quality relative to EHS-digital only at 3- and 6-months post-random assignment (RA); **comparing results at each timepoint will distinguish immediate from sustained effects of the program.** Analyses will include both intent-to-treat (ITT) and treatment-on-the-treated (TOT) analyses to determine the importance of program dosage for program efficacy.

**Aim 2.** *To assess the **efficacy** of CTB at enhancing secondary program outcomes.* CTB will also be assessed with regard to parent mental health (assessed using parent self-report and a short diagnostic interview at 3- and 6-months post RA), and child socioemotional and language outcomes at 3- and 6-months post RA (assessed using parent-report and objective ratings). In exploratory analyses, parenting and coparenting quality will be tested as mediators and child sex as moderator of effects on secondary outcomes.

If demonstrated to be efficacious, CTB will provide EHS, among the nation’s largest federally-funded early education programs, with a brief, cost-effective, manualized preventive intervention that could be used in conjunction with EHS center and home-visiting services to improve parenting quality and coparenting, engage fathers in programming and caregiving, and, ultimately, enhance child development. This study will also offer some of the first evidence as to the feasibility and efficacy of recruiting and retaining fathers, irrespective of parents’ relationship status, in parenting programs at every stage of an intervention.

## A. Significance

Fostering sensitive, contingent responses between parents and infants is a key goal for infant programs in low-income communities for two reasons: (1) these interactions are the building blocks of infant brain development and impact all domains of child development,<sup>14,15</sup> including socioemotional and language development<sup>1</sup>; and (2) because economic strain can undermine parents' ability to provide contingent responses due to the emotional stress that often accompanies this hardship.<sup>2-4</sup> The largest public investment in enhancing parenting among low-income families are the home visiting programs funded through the federal Maternal, Infant, and Early Childhood Home Visiting (MIECHV) program. Although many programs, including Early Head Start (EHS), have been shown to improve parenting behavior in the short term,<sup>8,16,17</sup> their effects are small and often fade.<sup>18,19</sup> The CTB program is a short-term, manualized intervention that can be easily incorporated into programs like EHS to enhance effects on parenting by addressing the three key weaknesses common to early parenting programs. Below, we describe these weaknesses and how CTB redresses them, offering a novel approach to enhancing the quality of parent-child interactions and early child development.

**A1. Father Engagement is Essential to Success of Parenting Interventions.** All large, federally-funded home visiting programs primarily target mothers, whereas no large-scale parenting programs are consistently successful at engaging fathers.<sup>20</sup> This shortcoming persists despite the fact that a large and growing literature demonstrates that fathers play important roles in the promotion of healthy development in children,<sup>21,22</sup> with fathers' positive involvement in children's care predicting better socioemotional and cognitive outcomes, particularly during the first three years of life.<sup>23,24</sup> Positive father involvement, particularly during the transition to parenthood, concurrent with a strong working relationship with mothers, can lower maternal stress and depression and even offset the negative sequelae of maternal depression as well as insensitive maternal parenting in children.<sup>25-28</sup> Without including fathers in parenting interventions, programs forego any chance to realize the benefits to children and mothers of fathers' positive involvement.

**A2. Enhancing Coparenting Relations is Essential to Success of Parenting Interventions.** To integrate young, at-risk fathers successfully in a parenting program, it is essential to enhance coparenting relations – the extent to which parents support and coordinate their childrearing – alongside parenting skills. Overall, research highlights that among high-risk and economically vulnerable populations, positive mother-father coparenting relations are crucial for father involvement, maternal adjustment (stress, depression), fathers' and mothers' positive parenting, and child adjustment.<sup>29-31</sup> In Feinberg's empirically-supported theoretical model, improved coparenting relations reduce parent stress and depression, which in turn positively influence parenting quality, as undermining and competitive coparenting dynamics can distract a parent from a child's needs and spillover to increased parenting harshness and diminished warmth.<sup>32,33</sup> By ignoring coparenting, programs undermine gains achieved through the sole focus on parenting skills.<sup>29,34</sup> Improvements in coparenting relationship quality can improve parents' own mental health,<sup>40</sup> thereby directly and indirectly (via parenting quality) fostering children's greater socioemotional wellbeing.<sup>35-39</sup>

**A3. Virtual Sessions and Technological Supports Can Increase Program Retention.** A final problem plaguing many parenting programs is low take-up and retention.<sup>19</sup> One reason is that low-income families are more likely than affluent ones to work nonstandard hours,<sup>33,35</sup> making scheduling and attendance difficult. This is especially true for fathers, who often work multiple jobs, which can include irregular shifts that do not overlap with mothers' work hours.<sup>41</sup> There is also evidence that cognitive biases, such as the tendency to focus on present versus future rewards, may make parents less likely to participate in home visiting even if they intend to do so,<sup>36-38</sup> a strong barrier to program engagement for low-income parents for whom the stress of parenting amid economic strain makes short-term challenges particularly salient.<sup>39</sup>

Hybrid delivery combined with technology-assisted prompts addresses these issues and holds promise for maintaining higher recruitment and retention rates in parenting programs. A hybrid delivery system, where initial sessions are conducted in-person to establish the relationship between facilitator and parents and subsequent sessions are conducted remotely, would allow parents to have sessions during non-standard hours and remove the logistical hurdles around scheduling in-person sessions. Moreover, evidence collected both before and during the pandemic suggests that remote delivery can be effective for both physical<sup>42</sup> and mental health treatment.<sup>43-45</sup> Additionally, if cognitive biases are key barriers to participation, recent research indicates they are highly modifiable through a light-touch text messaging approach. For example, weekly text-message reminders and planning prompts sent to Head Start parents substantially decreased young children's chronic absenteeism from preschool<sup>46</sup> and enhanced participation in home visiting.<sup>47</sup>

## B. Innovation

Connect to Baby (CTB) addresses the three major weaknesses described above that plague typical parenting programs by building on two evidence-based programs: Just Beginning (JB),<sup>48</sup> a psychoeducational program for teen fathers, and Family Foundations (FF),<sup>11</sup> which together target coparenting relations alongside parenting behavior. CTB harnesses the strengths of both programs and adds a hybrid, technology-enhanced delivery method to maximize program engagement and retention.

**B1. Engaging Both Fathers and Mothers Effectively.** A number of parenting programs actively seek to include fathers, for instance by inviting them to participate in sessions, including EHS and Dozier's attachment-based parenting program, Attachment and Biobehavioral Catch-up (ABC).<sup>49</sup> None use recommended strategies designed specifically to engage men, however, nor do they include fathers at every stage by design. To recruit and retain fathers and mothers, CTB contacts parents at the "magic moment" just after birth when parents – fathers, in particular – are uniquely motivated to be involved in caregiving.<sup>12</sup> Moreover, fathers are recruited directly by facilitators and program staff, rather than through mothers as is the case in many programs, ensuring that fathers feel valued and welcomed.<sup>20,34</sup> Although EHS prioritizes engaging fathers in programming, a study of over 200 early care providers found that only 14% of fathers participate in home visits because of resistance they feel from teachers and mothers as well as logistical challenges they face such as irregular work schedules. Many fathers also argue they do not know how to become involved because few programs explicitly invite them to participate.<sup>41,50</sup> Similarly, the ABC program recruits 10-15% fathers into their program (Dozier personal communication, February 2022). With a willing population of fathers, alongside inclusive strategies, implementing a program to engage fathers is feasible and likely to enhance the success of parenting interventions within EHS.

**B2. Integration of Coparenting and Parenting Intervention Content.** Although many programs exist that target parenting behavior, such as ABC,<sup>49</sup> and there are a few that target coparenting relations (albeit without strong evidence, except for FF), we know of no programs that blend both targets into a conceptually-driven, integrated curriculum. Because it draws content from two evidence-based programs, one that targets parenting and one that targets coparenting, CTB targets all three inter-related dyadic relationships in the family system – mother-father, mother-infant, and father-infant – synergistically optimizing the programs' efficacy. CTB harnesses two key strategies – NiFTE skills and video feedback – to simultaneously and cohesively enhance parents' coparenting behaviors and parenting quality, an innovative integration that is unique to CTB.<sup>40</sup> CTB uses the same four key interaction skills – NiFTE – to promote positive coparenting and parent-infant interactions. For example, in sessions focused on enhancing the quality of parent-infant play, we coach parents to *notice* their baby's cues and to *follow* those cues, while in coparenting focused sessions we coach parents to *notice* and *follow* their parenting partner's cues. The "NiFTE" curriculum was drawn from the core content of the JB program, which has been shown to enhance fathers' emotional responsivity, warmth, and language stimulation with children ages 3–36 months, but also applies those skills to the coparenting relationship, which is unique to CTB.<sup>13,48,51</sup> CTB also extends and enhances JB's play-based curriculum by incorporating strengths-based video-feedback to reinforce parents' use of NiFTE skills, which neither JB nor FF includes. Evidence suggests that video-feedback (showing parents with videos where they demonstrated specific skills), rather than just verbal feedback, is particularly effective at improving parenting among high-risk families.<sup>52–54</sup> In this way, CTB harnesses two key strategies – NiFTE skills and video feedback – in novel ways to simultaneously and cohesively enhance both parenting and coparenting behaviors.

**B3. Enhancing Recruitment, Retention and Engagement in Program using Technology.**

**B3.1. Hybrid Delivery.** The proposed study will evaluate a novel delivery approach to increase scheduling flexibility and reduce logistical hurdles and participant burden. The first session will be in-person to build an initial connection between the facilitator and co-parents and configure the technological components of the program (e.g., download the app onto parents' phones, conduct a test Zoom session), avoiding initial technical barriers that have occurred with other remote delivery and app-based interventions. For remote sessions, CTB families will be provided with video-enabled tablets with data plans to obviate device and Wi-Fi issues. A handful of parenting interventions for at-risk mothers, including Dozier's ABC program, have incorporated remote sessions via Zoom successfully,<sup>55</sup> suggesting remote delivery is feasible for this population. CTB's remote sessions will additionally include video content tailored to engage fathers. Specifically, CTB's digital media includes video clips drawn in part from the Sesame Beginnings video series that use images of fathers, including Sesame Street's "Baby Elmo" and his father, to signal the importance of fathers to the program and their babies' development. Parenting interventions that utilize educational videos, such as JB, in combination

with active practice and video feedback, have been effective at enhancing parenting quality among young, low-income mothers.<sup>51,56–59</sup> Direct recruitment and use of father inclusive content are among strategies recommended by fatherhood experts for engaging men in early childhood programming.<sup>34</sup> We will also incorporate video feedback into this modality using automatic cloud uploads of recorded play sessions and immediate play-back via screen-sharing.

**B3.2. CTB App.** To enhance retention, we will also use an adapted version of an application custom built for JB to facilitate and coordinate sessions and facilitate and track home practice.<sup>60</sup> The app will reduce the difficulty of scheduling sessions by easing communication between the facilitator and co-parents, providing reminders for sessions, and embedding links to remote sessions. The scheduling and reminder features should, according to existing research on text-message “nudges,”<sup>61,62</sup> increase program retention. The app also allows mothers and fathers to review program content and encourages them to practice activities between sessions. Specifically, through the app parents can review session lessons, re-watch session digital content, and track their progress via a visual “progress tree.” The latter tracking feature will also be used by the evaluation team to assess program engagement. The use of the app has been transferred to Georgetown and modified for the CTB program to allow both parents to have access to the scheduling component.<sup>63,64</sup> **The EHS-digital only group will have access to the digital content through the app but not progress or scheduling components.**

## C. Approach

**C1. CTB Program Development and Pilot Study.** CTB was co-developed by the three co-PIs by drawing program content from JB and FF and enhancing it with video-feedback, a custom app, and a hybrid delivery. The resulting intervention is an entirely novel, manualized curriculum in both English and Spanish that sequentially builds upon each session to teach, train, and coach mothers and fathers on coparenting approaches that facilitate cooperation and reduce conflict, and parenting approaches that facilitate serve and return interactions. In collaboration with the family engagement team at Martha’s Table (MT), a private non-profit food assistance and early education provider serving low-income families in Washington, DC, we piloted the program between October 2018 and June 2019 with 10 mother-father dyads recruited from MT’s infant classrooms. Parents were 90% African-American and living in poverty – and live in many of the same neighborhoods as the target population in the proposed study (i.e., families served by EHS in the Washington, DC area). Parent-reported measures of coparenting relationship quality,<sup>65</sup> father engagement in caregiving,<sup>66</sup> parenting stress (Parenting Stress Index; PSI),<sup>67</sup> and depression (Center for Epidemiological Studies Depression Scale – Short Form; CES-D-SF)<sup>68</sup> were gathered before the first (pretest) and after the sixth (posttest) sessions. Even with this underpowered sample, we found significant increases in both mother- and father-reported coparenting quality ( $M_{pre} = 5.07$  vs.  $M_{post} = 5.37$ ,  $p < .02$ ;  $d = .31$ ) and fathers’ reports of caregiving ( $M_{pre} = 2.66$  vs.  $M_{post} = 3.44$ ,  $p < .10$ ;  $d = .55$ ) from pre to posttest. Mothers’ reports on the Parent-Child Dysfunctional Interaction subscale of the PSI and on the CESD-SF also decreased ( $d = .25$  and  $.17$ , respectively), albeit not significantly.

## C2. Randomized Control Trial Design with EHS-CCP

The present study proposes to test the efficacy of CTB embedded in the services of 16 Early Head Start providers in Washington, DC (see EHS-CCP letter of support).

**C2.1. Study Design.** Mother-father dyads will be recruited from 16 EHS Child Care Partnership (EHS-CCP) providers in Washington, DC. Once recruited, dyads will be randomly assigned to one of two conditions: 1) EHS-CTB hybrid; 2) EHS-CTB digital only. Dyads will be randomized within each center to ensure center characteristics do not bias estimated effects. Measures of all targets and outcomes will be collected from dyads just before random assignment, before any sessions have occurred for treatment group families, and again 3- (posttest) and 6-months (follow-up) after random assignment. The posttest will coincide with program completion for EHS-CTB families. Families will be recruited from among families enrolled in EHS who have recently entered or will soon enter an EHS classroom; thus, infants will be between 2 and 8 months old at enrollment. One hundred fifty dyads will be recruited, about 9 from each EHS center. Thus, approximately 4-5 families will be randomly assigned to each condition at each EHS center each year. This recruitment schedule is feasible given the number of families served by EHS-CCP each year (approximately 320 families with infants enroll each year). An ongoing trial of FF has a participation rate of about 50% of eligible couples, and approximately 50% of contacted parents participated in our CTB pilot. Thus, the projected recruitment rate (~25%) is conservative relative to close benchmarks.

**C2.2. Recruitment and Participants.** EHS staff at each site will facilitate recruitment through flyers, direct invitations to families, introductions at drop-off and pick-up to CTB facilitators, and during EHS home visits. Each of the 3 CTB facilitators will be assigned to 8 EHS-CCP centers to conduct recruitment and program delivery, with the only limitation that one facilitator is assigned to each family. Only EHS-enrolled families will be able to enroll. If parents are interested, informed consent will occur, and the pre-test assessment will be scheduled. To increase participation, we will conduct assessments via phone or Zoom and use survey software. Parents will be eligible for the study who are aged 18-40 years, have an infant between 2 and 8 months of age enrolled at EHS; parents or partners do not have to be married or in a romantic relationship, but both must be committed to working together to raise their child. Father figures can include mothers' boyfriends or cohabiting partners who are not the biological father but are committed to caring for the infant. If the mother's coparenting partner is a same-sex partner or relative (e.g., grandmother), we will include them as co-parents in lieu of a father figure. Dyads can be English- or Spanish-speaking. Dyads will be ineligible if at the pre-test assessment their score on the WAST Interpersonal Violence (IPV) screener<sup>69</sup> indicates ongoing sexual or physical abuse; these cases will be referred to an EHS caseworker for assistance.

**C2.3. Procedures.** Dyads in the EHS-CTB hybrid condition will receive 6 joint sessions of CTB conducted by trained facilitators. Dyads in the EHS-CTB digital only group will receive EHS early education, as well as EHS home visitation, and will have access to the CTB content via the CTB app but will receive no CTB sessions. Because we theorize guided practice of and video-feedback on NiFTE skills to be the active components of the program, EHS-CTB digital content only will provide a suitable control group to test the program's effectiveness. The first session will be at the EHS center, the second through fifth would be remote, and last would be at the center as a group session with other families. Sessions will occur approximately one to two weeks apart, allowing for program completion by 10 weeks. During the first in-person session, families will receive tablets with data plans and with the Zoom and CTB apps preloaded. They will receive a welcome pack that includes baby gifts that are used to support each session.

Facilitators will conduct remote sessions using tablets at EHS centers or another location where participant confidentiality can be maintained. Facilitators will use screen sharing to show digital media clips, including those from Sesame Workshop's Baby Elmo series, which are designed to demonstrate the skills of Notice, Follow, Talk, and Encourage. Sessions will be recorded by facilitators and automatically saved to the Zoom cloud server to be viewed for supervision as well as to assess program fidelity. In order to facilitate video feedback during CTB sessions, there will be a session break after the facilitator has recorded the communication and play sessions. During the break, the recorded portion of the session will upload. Once the break is over, the facilitator and parents will reconnect to the Zoom call to provide short video feedback clips to parents via share screen. Each session – in-person and remote – comprises four parts: 1) recap last session's skill (a NiFTE skill); 2) introduce new skill; 3) discuss skill, enabled via digital media; and 4) practice skill. Because some participants will not attend all planned sessions, the total number of sessions attended, specific sessions attended, and communications within the app will all serve as measures of compliance. The app will allow easy tracking of parents' use of it.

**C3. Training, Supervision and Fidelity.** Facilitators will be graduates from social work programs at Catholic and Howard Universities and the early education program at the University of the District of Columbia. The lead facilitator from the pilot study will serve as the lead facilitator and trainer for the two other facilitators. At least one facilitator will be fluent in Spanish, and we will recruit candidates who match parents' cultural backgrounds. Each CTB facilitator will participate in a two-day training, led by the lead facilitator and developers, to learn to use the manual and the technology to deliver the content remotely. Once facilitators complete training, the first six sessions each facilitator delivers will be video recorded for fidelity review. During implementation, all sessions will be recorded to allow for video feedback and supervision and 20% of sessions will be reviewed for fidelity. The trainer will provide feedback on the extent to which the facilitator followed the manual and engaged parents effectively. Feedback will be based on video review and a fidelity coding scheme created for CTB in which facilitators are scored for session component completion, as well as 7 positive and 7 negative engagement criteria every 30 seconds. Pilot data showed that reliability of the fidelity scheme was high ( $\kappa > .7$ ) as was session fidelity and facilitator quality. Any facilitator not delivering CTB with fidelity will receive a refresher training before resuming program delivery.

**C4. Data Collection.** For dyads in the program and control groups, all key program targets and outcomes will be measured just after enrollment and before random assignment (RA; pretest), at 3 months post RA

(posttest), which would occur just after program completion for treatment families, and again at a 6-month follow-up after RA (approximately 3 months after program completion for EHS-CTB hybrid families). Children will thus range from 2 to 8 months at pretest, 5 to 11 months at posttest and 8 to 14 months at follow-up.

## **C5. Intervention Target and Outcome Measures.**

**C5.1. Program Targets.** CTB aims to enhance two key targets: **parenting** and **coparenting quality**. We will assess both outcomes primarily using videotaped **family interactions (25 min recorded Zoom)** comprising a) 5 minutes of the mother (or father) playing alone with the infant, b) 10 minutes of triadic family interaction, and c) another 5 minutes of the father (or mother) playing alone with the infant using a standard set of toys. The order of mother- and father-infant interactions will be counterbalanced across families. In the final 5 minutes, one parent will use a standard script designed to elicit child expressive language. The interaction will be coded using Datavyu software.<sup>51,70–72</sup> **Coparenting** will be coded using the coding scheme from Feinberg's FF RCT trials,<sup>11</sup> with coders trained to meet the specific criteria. In the second RCT of FF,<sup>11</sup> roughly 25% of cases were coded by at least two raters; interrater intraclass correlations of scores on parenting and coparenting ranged from .66 to .85, respectively. Coparenting positivity will combine three codes: coparental warmth, cooperation, and inclusiveness ( $\alpha = .63$  for mothers; .69 for fathers). Coparenting negativity will include separate ratings of observed coparental triangulation, competition, withdrawal, hostility, and endorsement of the partner (reverse scored). **Parenting behaviors** will be coded using the Individual Growth and Development Indicators for Infants and Children (IGDI) Indicator of Parent-Child Interaction (IPCI)<sup>47,70</sup> a measure of the sensitivity and responsiveness of caregivers to children ages 2 to 42 months. It is reliable, replicable, and sensitive to known differences in various at-risk populations of parents and children.<sup>47,73</sup> Positive engagement codes include acceptance and warmth, following a child's lead, commenting, labeling, asking questions, modeling, repeating, and praise; negative engagement codes include intrusiveness, criticism, and ignoring bids for attention. Composite scores ranging from 1 to 4 are used to index positive engagement and negative. We will also gather survey measures of key constructs using the **Coparenting Relationship Scale**, a 35-item scale capturing coparental agreement, support, undermining and exposure of the child to conflict (reverse scored) ( $\alpha = .90$ )<sup>74</sup>, and the **Father Engagement Scale**, measuring fathers' engagement in 11 activities with infants.<sup>66</sup>

**C5.2. Program Outcomes.** The program targets are hypothesized, in turn, to promote parent mental health and child language and socioemotional development. **Parent mental health** will be assessed in terms of parenting stress (PSS),<sup>67</sup> depression and anxiety symptoms (20-item CES-D and General Anxiety Scale short-form, respectively),<sup>68,75</sup> and parent self-efficacy (Parental Sense of Competence Scale)<sup>76,77</sup> gathered at pretest, and 3 and 6 months post-RA. **Child language** will be assessed at 3 (posttest) and 6 months (follow-up) after RA by coding the family interactions using the IGDI Early Communication Indicator (ECI),<sup>78</sup> which codes expressive communication for children between 3 and 36 months. During the pilot of CTB, reliability of the ECI with the Preschool Language Scale-3 (PLS-3) and a caregiver report yielded correlations of .75 or higher. Overall inter-observer reliability on the ECI was .90.<sup>78</sup> At 6 months post RA, child language will also be assessed using the MacArthur-Bates Communicative Development Inventories (MCDI), which measures vocabulary.<sup>79</sup> Finally, **child socioemotional** development will be measured at 3 and 6 months post RA using the Brief Infant Toddler Social Emotional Assessment (BITSEA),<sup>80</sup> which assesses behavior problems and competencies.

**C5.3. Additional Measures** will include demographic characteristics (income, education, race/ethnicity), pregnancy and childbirth complications, and household/family context changes including changes in co-residential status, income, employment, siblings, and family moves. We will also survey program parents about program satisfaction after sessions 1, 3, and 6 using an adapted version of the survey used in FF trials.

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