



# University-Community Partnerships to Support Responsive Caregiving: The Hearts and Minds on Babies Implementation Story

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## Abstract

Consistent, sensitive caregiving across home and childcare contexts supports optimal development. In this paper, we share the story of the development of Hearts and Minds on Babies (HMB) for Early Head Start (EHS) administrators, teachers, and parents. HMB was designed to support caregiver reflective functioning and sensitivity and reduce caregiver stress. This paper describes a series of Plan-Do-Study-Act cycles used to adapt an existing parenting intervention into the HMB programming for EHS. Throughout the paper, we present HMB concepts and learning objectives and share teachers' and parents' feedback and adaptations to content and delivery options that support implementation by EHS programs. Feedback from the final cycle suggests that HMB supports EHS administrators, teachers, and parents in their roles and improves relationships. The paper highlights the importance of research-practice partnerships in developing programming that meets the needs of EHS.

**Keywords** Early Head Start · Professional development · Parent engagement · Early care and education · Implementation

Early care and education professionals need access to quality professional development that supports their well-being and caregiving skills to meet the needs of diverse young children and their families. Early Head Start (EHS) recognizes parents as children's first teachers and encourages high-quality interactions between children and their teachers *and* parents. Yet many center-based programs struggle to involve parents in the classroom or in programming to support interactions at home (see Mendez, 2010 & Miller et al., 2020). Further, professional development (PD) that simply shares knowledge is insufficient to change practice (Hamre et al., 2017; Lonigan et al., 2011). Therefore, developing effective and

feasible programming for teachers and parents is essential. The Parent Teacher Intervention Consortium, comprised of four research teams using implementation science, has been working with EHS programs to develop and test integrated programming that is feasible for EHS to deliver and effectively supports responsive adult-child interactions. Our team worked collaboratively with EHS partners to build and refine Hearts and Minds on Babies (HMB). This paper describes the need for coordinated programming and how EHS partners' input drove adaptations to ensure implementation success.

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## The Need for Coordinated Programming

Center-based EHS programs support school readiness by encouraging high-quality interactions in the classroom and promoting family engagement, including families' involvement in EHS program activities, high-quality parent-child interaction at home, and parent-teacher relationships. Unfortunately, EHS programs struggle with family engagement (Golas et al., 2006), and it is unclear how programs can support parenting behavior in the home (Ansari & Gershoff, 2016). Structural barriers impact family involvement in programming, including a lack of flexibility in

parents' work schedules and difficulty arranging family involvement activities outside of program hours (Golas et al., 2006; Spoth & Redmond, 2000). Interpersonal barriers also exist, including a lack of trust between EHS staff and parents, family stress, teachers' job stress and dissatisfaction, and parent-teacher differences in caregiving beliefs (Hooper et al., 2022). For center-based EHS programs to impact caregiving across home and school contexts, it is necessary to develop coordinated programming that addresses these barriers.

In 2015, the Administration for Children and Families, Office of Planning Research and Evaluation established the EHS Parent-Teacher Intervention Consortium through the Early Head Start University Partnerships: Building the Evidence Base for Infant/Toddler Center Based Programs mechanism. The consortium includes four research sites from across the United States.

Each site partnered with EHS programs to develop and test coordinated teacher- and parent-focused programming delivered as part of teachers' PD and parent engagement requirements. A description of the consortium, measures used across sites, and shared research questions have been published elsewhere (see Stacks et al., 2022; Sheridan, 2020).

Our team used an implementation science lens to build and adapt HMB. Implementation science aims to close the gap between what is known about effective interventions and how they are translated into real-world settings by identifying and addressing barriers that prevent programs' use of the interventions (Downer & Yazejian, 2013). We developed research-practice partnerships with seven EHS programs and used an iterative implementation process to *build a program* to enhance responsive caregiving with adaptations informed by ongoing EHS feedback. We utilized standard implementation benchmarks of acceptability (i.e., content and delivery format are satisfactory), appropriateness (i.e., content is relevant to caregivers), and feasibility (i.e., the program is doable) (Proctor et al., 2011), to establish that our program was well-matched to EHS needs, and engaged in ongoing, data-driven decision-making (Aarons et al., 2011; Kellogg, 2020).

We used Plan-Do-Study-Act (PDSA) improvement cycles (Jackson et al., 2018) with our EHS partners over a five-year period to ensure that the final iteration of the training would be acceptable and appropriate to caregivers and that it would be feasible for EHS sites to deliver. PDSA cycles increase the chances of building well-matched, effective interventions by allowing developers to learn quickly whether the intervention works in a particular setting. PDSA is a four-stage problem-solving cycle where internal and external stakeholders plan strategies

for offering the intervention (plan), offer the intervention (do), monitor acceptability, appropriateness, and feasibility (study), and make adjustments to the intervention (act). Cycles are repeated until the intervention is well-matched to the program's needs (Leis & Shojania, 2016). In the following sections, we describe our process in more detail, starting with the foundations and subsequent adaptations of HMB, and moving into a description of the four PDSA cycles in our research-practice partnerships with EHS (see Fig. 1).

## Foundations of the HMB Program

HMB is grounded in the philosophy of a menu of programs developed by a University-based group of clinician-researchers within Zero to Thrive's Strong Roots™ programs ([www.zerotothrive.org](http://www.zerotothrive.org)), that aim to increase children's social-emotional development by promoting strong relationships between caregivers and children and enhancing caregiver reflective capacity and responsive caregiving. Concepts support caregivers to meet children's needs for exploration and connection, repair relationship disruptions, co-regulate children's emotions, create an atmosphere of warmth in which children can grow and learn, and explore the impact of trauma on both caregiving and children's behaviors. In addition, caregivers are introduced to mindfulness-based self-care skills to facilitate emotional wellness. Critical to the delivery of Strong Roots™ programs is how caregivers experience the program facilitators as a secure base and safe haven and have the felt experience of being held in mind, thereby supporting their capacity to offer the same for children (Muzik et al., 2015). Table 1 lists Strong Roots™ concepts and learning objectives.

The Strong Roots™ flagship program, Mom Power, designed for mothers with children under the age of 6 years, served as the foundational basis for HMB. Mom Power is a clinical intervention delivered in 13 sessions (10 group and 3 individual sessions) and was shown effective at reducing parenting stress, depression, and PTSD symptoms and improving parenting behaviors and representations (Muzik et al., 2015; Rosenblum et al., 2017, 2018). We anticipated that Mom Power would be translatable and well-matched for EHS setting based on two observations. First, Mom Power was successfully scaled up in community mental health settings (Mucka et al., 2017); secondly, the Parent Corps intervention, also a 13-week long parent training, was successful in the Head Start context (see Dawson-McClure et al., 2015). Thus, as our first process step, we trained our EHS partners in Mom Power and collaboratively adapted content and delivery to fit a teacher PD model.

**Fig. 1** Overview of HMB plan do study act cycles

PDSA 1 01/2016 – 08/2017	<p><b>Plan:</b> Team attends Mom Power training; workgroup adapts training for teachers.</p> <p><b>Do:</b> Offered 1 training group to EHS teachers, provided substitute teachers for coverage.</p> <p><b>Study:</b> Feedback from facilitators; individual implementation interviews, coded qualitatively. High satisfaction. Need to adapt so co-teachers can attend, add individualized coaching and content to address teacher-parent relationship.</p> <p><b>Act:</b> Added 3 coaching sessions, developed a half-day training for administrators, discussed options for delivery so co-teachers could attend together.</p>
PDSA 2 09/2017 – 08/2019	<p><b>Plan:</b> Training available to co-teachers; half-day overview for administrators; parent groups in evening with child care and food.</p> <p><b>Do:</b> 3 teacher groups and 3 parent groups across 2 counties; offered half-day orientation to administrators.</p> <p><b>Study:</b> Satisfaction surveys and focus groups with parents and teachers' needs survey with EHS parents; need for training for administrators.</p> <p><b>Act:</b> Develop a curriculum for administrators; revise the parent intervention so it is feasible for EHS; revise format of curriculum to fit EHS professional development calendars.</p>
PDSA 3 09/2019 – 08/2020	<p><b>Plan:</b> Recruit administrators to participate in HMB+A series; recruit teachers and parents to participate in HMB+T.</p> <p><b>Do:</b> Offered 3 HMB+A groups; pilot tested new curricula format and HMB+P.</p> <p><b>Study:</b> Satisfaction surveys and focus groups with HMB facilitators, teachers and parents.</p> <p><b>Act:</b> Short option for HMB+T curriculum not acceptable; revised teacher and parent curricula to improve cultural relevance; developed training for EHS partner sites to scale up HMB+T and HMB+P.</p>
PDSA 4 09/2020 – 09/2021	<p><b>Plan:</b> Scale-up training to EHS partner sites.</p> <p><b>Do:</b> Offer HMB+A; train EHS partner sites to facilitate HMB; provide coaching and reflective supervision.</p> <p><b>Study:</b> Focus groups with administrators, EHS and university facilitators.</p> <p><b>Act:</b> Develop implementation guide for EHS sites; revise training manuals; offer facilitator training at EHS sites.</p>

## Research-Practice Partnerships to Develop the HMB PD Program

To ensure that the HMB PD program met the Head Start Performance Standards requirements, we made it research-based and a minimum of 15 clock hours. The Strong Roots™ concepts lent themselves to other training requirements, including a focus on family partnerships, providing nurturing adult-child interactions, addressing challenging behaviors, and supporting children's social and emotional development (Head Start Early Childhood Learning & Knowledge Center, *n.d.*).

Beginning in 2015, together with our EHS partners, we progressed through the four PDSA implementation cycles, each of which we outline in the following section. During this period, many modifications were necessary to adapt the clinical intervention, Mom Power, into programming suitable for EHS. At the end of 2021, we emerged with a final product, a three-arm integrated learning program that targets multiple levels of the child-caregiving ecosystem (administrators, teachers, parents), is suitable to a non-clinical setting, and fits into the EHS teacher PD structure.

## PDSA Cycle One: Development and Pilot-Testing of Teacher HMB PD

### Cycle One: Plan

First, potential HMB training facilitators, EHS coaches with classroom and curriculum experience, and the research team attended a 3-day Mom Power training. EHS coaches indicated that the concepts were acceptable and appropriate to both EHS teachers and parents. Next, a smaller workgroup began to adapt the Mom Power intervention into the teacher PD format, ensuring that descriptions of the concepts, activities, and exemplar videos were relevant to working with children in an infant/toddler classroom setting.

### Cycle One: Do

We pilot-tested the HMB PD program with two groups of eight teachers. The HMB PD was ten weekly training sessions, two hours each during lunchtime (meals provided). We also provided funds for substitute teachers for classroom coverage. Additionally, the facilitators running the HMB PD program attended weekly reflective consultation with Mom Power developers for model fidelity.

**Table 1** Strong Roots™ concepts and learning objectives, and self-care skills adapted for HMB

Session	HMB concepts introduced	Overview of learning objectives	Self-care concept
1	Social-emotional foundation of learning	<ul style="list-style-type: none"> <li>● Begin to describe the HMB perspective related to professional development and training</li> <li>● Offer a welcoming environment to support the development of group cohesiveness and relationships</li> <li>● Introduce the link between attachment and school readiness</li> </ul>	Butterflies & seedlings
2	The tree	<ul style="list-style-type: none"> <li>● Introduce the Tree as a metaphor for children's behavior being an expression of attachment needs (connection-roots; exploration-branches).</li> <li>● Identify activities to provide children with warmth within the early childhood education context (sunshine time)</li> <li>● Consider how race, culture, and values can impact understanding and acceptance of the Tree concept</li> </ul>	Mindful breathing
3	The tree	<ul style="list-style-type: none"> <li>● Identify building roots/connection and branching out/exploration moments in videos of classroom interactions</li> <li>● Strengthen observation skills by practicing identifying behavior without interpretation</li> <li>● Identify and reflect upon one's own feelings in response to children's attachment needs</li> </ul>	Progressive relaxation
4	Wondering & response wheel	<ul style="list-style-type: none"> <li>● Identify behavior as clues to a children's feelings and needs</li> <li>● Increase skills for responding to children's attachment needs, building on the Tree</li> <li>● Consider how race, culture, and values can impact understanding and acceptance of the "Wheel" concept</li> </ul>	Safe place visualization
5	Restore emotional balance	<ul style="list-style-type: none"> <li>● Increase vocabulary around feeling words</li> <li>● Understand ways to help children and oneself regulate emotional responses</li> <li>● Consider how race, culture, and values can impact understanding and acceptance of this concept</li> </ul>	Coping thoughts
6	Music in the background & co-regulation	<ul style="list-style-type: none"> <li>● Understand how adults' and children's past experiences can impact perceptions and behaviors</li> <li>● Understand very young children need a partner to regulate their emotional response</li> <li>● Consider how race, culture, and values can impact our understanding and acceptance of 'co-regulation'</li> </ul>	Container visualization
7	Balanced caregiving	<ul style="list-style-type: none"> <li>● Understand the need to be both "in charge &amp; strong" and "warm &amp; kind"</li> <li>● Develop ideas for balancing one's own needs with the needs of children</li> <li>● Consider how race, culture, and values can impact our understanding and acceptance of 'Balanced Caregiving'</li> </ul>	Using the senses to soothe
8	Repair the disruption & circles of holding	<ul style="list-style-type: none"> <li>● Utilize the Tree and Wondering &amp; Response Wheel to think about and respond to the feelings and needs of parents</li> <li>● Understand how to Repair a Disruption within a relationship (parent, child, colleague)</li> <li>● Consider how race, culture, and values impact our response to and our understanding and acceptance of parents</li> </ul>	Bird's eye view
9	Bringing it all together	<ul style="list-style-type: none"> <li>● Practice applying HMB concepts to teachers' unique situations in the classroom with children</li> <li>● Practice applying HMB concepts to teachers' unique situations with parents</li> <li>● Discuss how HMB concepts fit or were challenging based upon their own beliefs, values, training, culture</li> </ul>	Gratitude list
10	Celebration/continued growth	<ul style="list-style-type: none"> <li>● Reflect upon the group learning experience</li> <li>● Celebrate progress</li> <li>● Strategize about ongoing support to utilize HMB concepts</li> </ul>	Tree of life visualization

\*Self-care activities are described in (Brophy-Herb et al., 2022)

**Table 2** Pilot phase teachers' satisfaction with HMB training (N = 15)

Question	Percent of teachers who strongly agree or agree	Mean
The training provided information that is useful to me as an EHS teacher	100%	4.67
Other teachers could benefit from this training	100%	4.83
I got useful information about supporting young children's social-emotional needs	100%	4.75
As a result of the training, I have an increased understanding of infants' needs	83%	4.33
As a result of the training, I have an increased understanding of infants' feelings	92%	4.42
The HMB concepts are a good fit for the EHS philosophy	92%	4.92
Stress reduction techniques were helpful	92%	4.58
I practiced self-care outside of the group	92%	4.50

Scores range from 1 (strongly disagree) to 5 (strongly agree)

### Cycle One: Study

Feedback from facilitators of these first two HMB PD groups revealed that HMB concepts were appropriate for teachers and also elicited suggestions for improvements, such as increasing content to support teachers' work with parents, adding individualized coaching sessions, and increasing cultural relevance. Teachers reported high satisfaction with HMB PD and rated groups as acceptable and appropriate (see Table 2). Thirteen teachers also participated in individual implementation interviews to provide detailed feedback. Interviews conducted by research staff were transcribed and thematically coded with high interrater reliability (90.6% based on 757 total codes and 71 discrepancies). Findings confirmed content acceptability and appropriateness and the need for adaptations to improve the feasibility of delivering HMB. It was encouraging that teachers reported shifts in their thinking about and responses to children's behaviors, as shown in quotes such as, "*It helped with behaviors in the classroom with the kids. A lot of the times, they were challenging behaviors so I would step back, do some deep breathing and then ask about how the child was feeling.*" Teachers agreed that the PD sessions contained the right amount of material, that weekly meetings were beneficial, and self-care techniques were helpful. Teachers also liked the small group format of the PD program stating it increased their comfort level in sharing their daily experiences and challenges. However, teachers urged us to create a parallel program for their administrators to better communicate the concepts with them. Additionally, they suggested offering PD sessions when school was not in session so co-teachers could attend together (Goletz & Dayton, 2016).

### Cycle One: Act

Based on feedback, we planned to offer the next round of HMB on scheduled PD days to accommodate co-teachers. However, this turned out not to be feasible because PD

structures provided only one full day per month, which was already filled with mandatory training. EHS partners suggested that we offer HMB in the evenings and compensate teachers for participating so that co-teachers could attend together. Knowing this would not be feasible for EHS programs long-term, we chose to proceed, as it allowed us to continue to evaluate the effectiveness and make necessary adaptations. Additionally, we modified the HMB PD by adding three individualized coaching sessions and enhancing content to help teachers keep parents' perspectives in mind.

### PDSA Cycle Two: Testing Concurrent HMB Teacher PD and Parent Learning Sessions

#### Cycle Two: Plan

We chose to offer sessions in the evening hours with childcare, dinner provided, and financial compensation for time commitment and travel. The teacher HMB PD program started first, and then several weeks later, parents were invited to separate, concurrently running parent HMB groups.

#### Cycle Two: Do

*HMB Teacher PD program.* We offered three rounds of HMB PD programs (each consisting of 10 group sessions and 3 individualized coaching sessions). Despite positive teacher interest, there were ongoing challenges to attendance due to second jobs, children's events, or their own educational conflicts; evenings were not feasible for many teachers.

*HMB Parent Groups.* We offered three rounds of parent groups following a modified Mom Power curriculum. Despite many engagement activities (e.g., reminder calls, provision of dinner, and childcare), recruiting and retaining parents for evening groups was difficult. Of nearly 180 parents approached, only 20 (9%) agreed to participate, and

of those, half attended less than five sessions, and only one-third attended at least 75% of the program.

### Cycle Two: Study

Feedback from participants in this second cycle was consistent with feedback in cycle one. Both EHS teachers and parents indicated that HMB content and delivery were acceptable and appropriate, yet feasibility was questionable based on low enrollment and low retention. Especially the limited uptake of the Mom Power program (which in its original format is a clinical intervention for treatment-seeking parents) elicited questions about what modifications may be necessary to be attractive to EHS parents. To this end, we conducted a qualitative substudy consisting of interviews and focus groups with a broad range of EHS parents and teachers.

First, we surveyed 100 EHS parents to understand their needs better. Results suggested that HMB content related to stress management, effective discipline, and understanding challenging behaviors were most important to parents. These topics aligned with HMB concepts; thus, the content of HMB was acceptable and appropriate. Parents also reported that it was only feasible to attend for 1–2 h per month, with the provisions of childcare and food, and the group needed to be delivered by a person known to the parent. Parents also wanted opportunities to connect with other parents (Menke et al., 2018). Thus, the group format was acceptable but needed careful facilitator considerations and a reduced number of sessions. Secondly, to determine which concepts were most useful and whether teachers could act as facilitators for parent groups, we conducted three parent focus groups (N = 18) and two teacher focus groups (N = 13). Focus groups were transcribed and coded for themes by research assistants who used an iterative data analysis approach to determine themes and codes (Braun & Clarke, 2006). We present focus group findings by informant category: teachers and parents.

Teachers believed parents were interested in HMB concepts but that the time commitment made it inaccessible. They suggested incorporating HMB into existing school events. Teachers also reported that parent participation in HMB provided the parents and teachers with a shared language to talk about children's needs. Teachers underscored that HMB strengthened their own capacity to individualize how they respond to children *and* parents, which ultimately enhanced trust between them and the parents. Some teachers felt positive about sharing concepts with parents; they saw themselves as role models for parents and thought sharing concepts could deepen the parent-teacher relationship. Others saw many barriers to sharing the concepts. Some barriers were logistics; classrooms were busy, and parents were rushing at drop off and pick up. Other interpersonal barriers

included feeling disrespected by parents and navigating personal/professional boundaries. Finally, teachers suggested that organizational barriers might get in the way of their ability to use the concepts in their classroom and with parents.

Parents emphasized how busy their lives were, preventing them to commit to time-intensive parent engagement, even when the content is useful, and food and childcare are provided. Parents wanted programming to be convenient and paired with other EHS parent events. Most importantly, they wanted that those offering information to be credible, non-judgmental, and trustworthy persons who knew their children well. Parents reported that the Mom Power concepts were useful and self-care practice helpful. Most parents viewed their child's teacher as a knowledgeable, valuable partner in supporting their child's development and wanted teachers to be facilitators of their parent groups. However, a few parents noted distrust of teachers, experiencing teachers as impatient, inflexible, judgmental, or overworked, different from oneself based on lived experience, and lacking cultural humility and compassion as deterrents for facilitating parent groups.

### Cycle Two: Act

Following the qualitative substudy, we held a partner meeting with all EHS program administrators to present survey and focus group results and brainstorm necessary adaptations to HMB programming. The result was the creation of a three-arm integrated HMB program for administrators, teachers, and parents, with each arm presenting HMB content to the target audience in a manner to fit their unique needs. In the next section, we briefly elaborate on these three HMB formats.

1. The HMB Administrator Program (HMB + A). Initially, we hoped that introducing EHS administrators to HMB concepts in a half-day training would be acceptable. We piloted this with our sites near the end of cycle two. Administrators and teachers remained dissatisfied and encouraged us to create a longer group for administrators that focused on their unique role of supporting the teachers more deeply in learning and gave them a better understanding of how to support their teachers emotionally. Administrators wanted opportunities to practice self-care and reduce their own work stress. In response, we developed a 15-hour companion program for EHS administrators, HMB + A, to support site leaders, program managers, coaches, and mental health consultants in their work; the program was delivered in four monthly sessions, with the first lasting 6 h (introducing most of the HMB concepts and practicing activities) and subsequent lasting 4 h each (with emphasis on applying concepts to real-life classroom situations, cultural

responsiveness, and self-care). The HMB + A curriculum showcased concepts teachers were learning in their PD and gave opportunities for administrators to reflect on their teachers' emotional states and how they may best support them.

2. The HMB Teacher Professional Development Program (HMB + T). Our implementation team remained focused on developing training that supported high-quality teacher-child interactions and was feasible for EHS programs to deliver beyond funding. To make the teacher PD (HMB + T) more feasible for programs to implement after the study, we developed three delivery options that could better fit into their PD schedules.

- Option one is offered over three to four months and includes ten two-hour group sessions held weekly or bi-monthly and three individual coaching sessions.
- Option two begins with a full-day group session, followed by six two-hour group sessions offered weekly or bi-monthly and three individualized coaching sessions.
- Option three offers four monthly sessions. The first is a full-day session followed by an individualized coaching session; the next three sessions are half-day sessions offered once per month with individualized coaching sessions between each.

3. The HMB Parent Program (HMB + P). Parents' survey and focus group responses helped streamline which key concepts from the original clinical Mom Power groups to retain for implementation with EHS parents. These concepts were delivered in three ninety-minute-long HMB + P groups that immediately followed monthly EHS parent meetings. As parents had indicated a wish for trustworthy facilitators who are invested and know their child, the HMB + P was deliberately delivered by one of the teachers who had graduated from teacher PD programming (HMB + T) and was co-facilitated by the facilitator of the HMB + T. To provide teachers with the support they needed to share HMB concepts with parents, we added four additional teacher PD sessions to the HMB + P curriculum.

### **PDSA Cycle Three: Integrated HMB + A, +T, and +P**

#### **Cycle Three: Plan**

In this cycle, we planned programming for administrators, teachers, and parents in an integrated format. Two EHS programs selected the HMB + T option that best fit

their PD schedule and identified a time to offer the parent groups. Evening parent meetings were not an option because buildings closed within 30 to 60 min of pick-up time. We worked with administrators to develop a plan to cover classrooms so that during the three weeks the parent groups were offered, teachers could have time to plan and deliver the program. Some EHS partners did not have the resources to allow teachers to run the HMB + P groups; instead, a mental health consultant or curriculum coach co-led the parent groups.

#### **Cycle Three: Do**

Two HMB + A groups were offered to administrators across the EHS programs, and five HMB + T groups were held during scheduled PD. Additionally, four HMB + P groups were held immediately after EHS parent meetings. Meals were provided at all sessions, and parents were compensated for their time.

#### **Cycle Three: Study**

In this cycle, HMB + T was offered in fewer sessions than in previous years. Teachers continued to be highly satisfied with HMB + T; mean satisfaction scores ranged from 4.69 to 4.89 on a 5-point scale, suggesting that even after the adaptations, teachers found the content and delivery method to be appropriate and acceptable. Shortening the parent training resulted in more parents being able to attend, which suggested that the shortened program was more acceptable to parents, 68% attended at least one session, and 44% attended all three sessions. Parent satisfaction was also high, with mean scores ranging from 4.55 to 4.75 on a 5-point scale, suggesting that the content was appropriate. During the parent recruitment phase, we learned that working parents were interested in the training but could only attend in the evenings. Thus, we could not reach some working parents.

Focus groups were conducted with parents, teachers, and HMB + P facilitators to understand more deeply whether the content and delivery methods of HMB + P remained appropriate and acceptable and whether it was feasible to have EHS teachers co-facilitate the HMB + P groups and share concepts with parents at drop off and pick up. Qualitative analyses revealed many advantages of having teachers co-facilitate the HMB + P groups, including strengthening parent-teacher relationships, increased teacher self-efficacy, and a shared language about children's needs. Teachers shared how they used HMB concepts with parents. Table 3 provides quotes summarized from (Barron et al., under review; Goletz & Dayton, 2016). Despite many positive feelings about HMB + P, teachers, parents, and facilitators noted that some of the HMB concepts challenged cultural and racial experiences, values, and beliefs related to raising young children

**Table 3** Teacher and administrator descriptions of how HMB programming

HMB Concept	In their words... How it supports teachers	In their words... How it supports administrators
The tree metaphor	"I have the tree poster in my classroom... so I can reference back and if I'm having a moment, I go back and see what this child may need, what I may need."	"[After attending HMB] we talked about the tree and...how we connected it to our students and their families to help them grow"
Wondering and response wheel	"I started using it [wondering & response wheel...okay this kid is crying, what does he need? I use the steps... like oh let me try this."	"The wheel was the most helpful because I was jumping straight to the end... Now I try to ...think about the issue before I go to the teacher"
Restore emotional balance	"I use lots of deep breaths and find ways to connect with the children and let them know how I'm feeling. It helps them too, with their emotions."	"A teacher got upset [with me]. I had to calm down first. Instead of getting mad at the way she was talking to me, I [thought] <i>something could have happened. She's probably frustrated.</i> "
Music in the background	"All teachers [need to know about] trauma and how it manifests so that we can understand of why we're seeing that behavior"	"I'm a lot more sensitive when a parent or staff has a concern, it made me more attentive to background music."
Balanced caregiving	"[After attending HMB] if I am getting stressed out, I notice it 'cause it shows in the way I deal with the child. So, I'll notice it, step out for a minute, clear my mind."	"I tend to be the in charge person. I need to balance that with being the warm person because...when you are always strong sometimes you're not hearing what you need to hear."
Self-care	"After [attending HMB] I took [self-care] into consideration for putting myself in a good mind space by trying self-care practices to relax once I get home."	"learning how to step back and understand the emotions and do something that's only for you...and just learning to be OK with putting you first"

that required HMB facilitators to maintain a stance of cultural curiosity and cultural humility (Barron et al., 2018; Barron et al., under review).

### Cycle Three: Act

We shared the results of study cycle three with our EHS partners to help plan for the final implementation year, where we would train sites to deliver HMB programming. Across partner sites, there was a desire for the research team to offer HMB + A and provide organizational support and assistance in selecting EHS staff to deliver HMB + T and HMB + P at their sites. The implementation team began developing readiness materials and a site-level implementation manual and adapted the HMB curricula and facilitator training to support cultural humility and curiosity.

### PDSA Cycle Four: HMB Scale-Up Training for Sites

#### Cycle Four: Plan

We began PDSA cycle four by working with EHS programs to identify staff members to deliver HMB + T and HMB + P. The EHS facilitators and their program managers attended the HMB facilitator training, and we provided the necessary materials to deliver HMB. An experienced facilitator was assigned to co-lead the groups with the EHS facilitators to provide coaching and technical assistance. Together, the three-person facilitation team attended reflective consultation.

#### Cycle Four: Do

We offered one HMB + A group and four EHS partner programs delivered HMB + T. Although programs also had planned to offer HMB + P, the onset of the COVID-19 pandemic curtailed the plan, and all in-person parent groups were canceled.

#### Cycle Four: Study

In this phase, we started with a series of implementation interviews to understand what went well during the scale-up phase, the barriers to scale-up, the degree to which facilitating the training fit with the EHS staff person's job duties, and how prepared they felt to facilitate HMB + T. Administrators who participated in HMB + A also participated in implementation interviews to understand how it was helpful and how they used the concepts in their role (see Table 3). The interviews were transcribed verbatim and coded for themes by research assistants. Administrators appreciated a group dedicated to their role within the EHS system. The group allowed them to feel connected and supported by colleagues. In turn,



administrators felt more comfortable expressing emotional responses to their work and reflecting upon HMB concepts in their work with teachers. They also noted that their own and teachers' unique experiences play a role in whether all HMB content is viewed as racially and culturally relevant (Barron et al., 2020).

#### Cycle Four: Act

The qualitative analyses revealed that EHS teachers, parents, and administrators found the concepts helpful and confirmed the importance of cultural humility. To support sites in continuing to scale up HMB implementation, we offered an additional HMB + A group and another training for EHS partners to deliver HMB at their EHS programs.

### Discussion

In summary, HMB is an integrated program for EHS administrators, teachers, and parents. Research-practice partnerships were essential to ensure the programming was well-matched for EHS and was acceptable, appropriate, and feasible within the EHS context. Across our five-year partnership, there was overwhelming agreement from participants that the training content was acceptable. Importantly, we learned that HMB helped develop a shared language between teachers and parents about the centrality of the attachment relationship for infants/toddlers. Additionally, this shared language was bolstered by opportunities to discuss how HMB concepts fit or didn't fit within cultural perspectives. Still, HMB's unique delivery format needed intentional planning and leadership support.

### Shared Language

An important finding from focus groups in PDSA cycle two highlighted how much parents value teachers and set the stage for developing integrated programming. Sharing concepts with parents at parent meetings, conferences, and home visits promoted relationships between teachers and parents that supported the use of HMB concepts across home and school; and grew a shared language among each important relationship within the EHS setting and increased caregiving self-efficacy (Barron et al., 2018).

Developing an HMB + A group for site leaders, coaches, and mental health consultants is a unique part of HMB programming that supports leadership to take part in this shared language and experience. Teachers told us that it was challenging to implement HMB in their classrooms when their

leadership did not understand the concepts or its reflective stance. Additionally, we realized that administrators would benefit from HMB's relationship-based perspective as they lead their programs and staff. Further, HMB + A helped apply HMB concepts and strategies, like self-reflection, taking teachers' perspectives, and managing their own emotions in their administrative roles. These skills are important in leadership and can promote a positive administrator-teacher relationship (Hazegh, 2020), where administrators notice and validate teachers' efforts in the classroom, which has a cascading effect on classroom quality and teacher job stress and satisfaction (Barron et al., under review).

### Considering Cultural Perspectives

Practices that are core to HMB, like perspective-taking (Chopik et al., 2017), self-regulation (Trommsdorff & Cole, 2011), and self-reflection (Ma et al., 2014), may differ across cultural perspectives and beliefs. Therefore, it was critical for facilitators to maintain a stance of cultural curiosity and humility. For example, one HMB concept is for caregivers to keep a reflective stance, responding to underlying emotions instead of focusing on overt behaviors when interpreting the child's behavior and needs. Teachers working in classrooms with eight infants/toddlers with different needs voiced that this felt challenging and, at times, unrealistic. Similarly, parents who may be raising their children to navigate racism and oppression voiced that leading with behavioral responses instead of focusing on emotions may be critical to their children's survival. HMB facilitators learned to offer time for parents and professionals to process such emotional responses and consider how the HMB concepts may or may not fit their lived experiences, values, and beliefs. We found that participants appreciated the time to share their perspectives and felt heard by facilitators. A felt experience of being welcomed, accepted, and not judged can promote learning, integration, and the use of concepts (Gay, 2018). In turn, reflective supervision supported HMB facilitators to process their own emotional responses, values, and beliefs in response to group discussions (Barron et al., under review).

### Implementing Hearts and Minds on Babies

While the adaptations we made improved feasibility for some parents and teachers, there continued to be issues that should be considered when exploring implementing HMB. Delivery format, group scheduling, time for weekly planning, and fitting HMB within EHS performance

standards are critical to HMB's success. Further, the novel three-arm integrated program targets multiple levels of the child-caregiving ecosystem: children, parents, teachers, and administrators. Teachers helped us learn that they benefit when they can participate in a group with their co-teacher and when the group is offered during dedicated PD time; parents stressed the development of programming that considered their busy lives; administrators reminded us that they deserved dedicated programming.

Additionally, participants consistently reported that weekly sessions with time for reflection, practice, and coaching opportunities that built upon previously learned concepts were critical for learning. Implementing a weekly or bi-monthly PD group requires intentional planning. Working parents need consistent care for their children, and infants/toddlers require consistent caregivers. Some partner programs dismissed the children early on Fridays, which allowed teachers to attend PD during paid time. This, however, requires parents to find alternate care for children one day per week. Another option is allowing teachers to be paid overtime to attend training after work and to provide childcare for the teachers' children. However, this may not be possible due to budgetary issues. State and federally-funded early care and education programs may need to work with funding agencies to find creative solutions to balance the needs of teachers and families.

Parallel to the need for HMB facilitators to consider cultural values and beliefs when learning the concepts, we also had to consider the cultures of our partner sites. Listening to their ideas (study) and making adaptations (act) was important to this ongoing research-practice partnership. In doing so, we found some solutions that worked for some programs but not all. Thus, we encourage programs to begin by offering an HMB + A to establish understanding and buy-in. Over time, program administration can problem solve to plan for the following: (1) a PD structure that allows for two-hour weekly or bi-monthly teacher groups, with coaching and classroom support between meetings; (2) parent meetings that are offered during the day and in the evenings; and (3) four dedicated hours per month for teachers who are co-facilitating the group to devote to planning, debriefing, and reflective supervision. This may require budget and schedule adaptations. Programs can consider reallocating some of the funds set aside for PD to pay for reflective supervision and overtime pay. Grant opportunities may be available through private foundations to help support these costs.

## The Future of HMB

The next steps in this project are three-fold. First, testing the effectiveness of the HMB + T and HMB + P training, specifically to understand whether the different delivery

options of the training made measurable differences in adult-child interactions at home and school, caregivers' understanding of children's emotional needs, and children's social-emotional development. Second, testing whether the HMB + T and HMB + P training impacted teacher and parent stress and symptoms of depression and promoted the teacher-parent relationships. Finally, to test the effectiveness of HMB + A on the organizational climate and teachers' use of the concepts with children and parents.

The HMB implementation story demonstrates how collaboration between researchers, educators, and parents can create appropriate, acceptable, and feasible training that honors cultural values and beliefs, social-emotional development, and relationships. It also provides important information about the barriers to offering ongoing coordinated training in EHS, including time constraints for very busy parents whose children are being cared for outside of the home; relational issues where parents want to learn from someone who knows their child deeply and they want time to be with other parents; and organizational issues like buy-in and support from administrators, weekly time for PD, and building availability.

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## References

- Aarons, G. A., Hurlburt, M., & Horwitz, S. M. (2011). Advancing a conceptual model of evidence-based practice implementation in public service sectors. *Administration and Policy in Mental Health and Mental Health Services Research*, 38(1), 4–23. <https://doi.org/10.1007/2Fs10488-010-0327-7>.
- Ansari, A., & Gershoff, E. (2016). Parent involvement in head start and children's development: indirect effects through parenting. *Journal of Marriage and Family*, 78, 562–579. <https://doi.org/10.1111/jomf.12266>
- Barron, C. C., Adekoya, A., Oates, O., Contreras, R., & Al-Tweej, S. (2018). *2018 parent adaptation focus groups: Summary of qualitative themes*. Unpublished research report.
- Barron, C.C., Brophy-Herb, H., Weathington, B., Vallotton, C., Muzik, M., Rosenblum, K.L., & Stacks, A.M. (under review). Promoting reflective leadership within early head start: A qualitative study of professional development training for administrators.
- Barron, C., Weathington, B., Howell, S., Bell, S., & Stacks, A. M. (2020). A relationship-based approach to professional development in the early childhood educational setting. The role of relationships in collaboration and implementation. *ZERO TO THREE*, 41(1), 5–12.

- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology, 3*(2), 77–101.
- Brophy-Herb, H. E., Stacks, A. M., Frosch, C., Brinks, A. M., Cook, J. L., Vallotton, C. D., Perkins, H. A., Kim, L. E., Carson, R., Muzik, M., Rosenblum, K., & Jennings, P. A. (2022). The effects of a relationship-focused professional development intervention on infant and toddler teachers' mindfulness-based strategies for coping. *Early Childhood Education Journal, 1007/s10643-022-01416-0*
- Chopik, W. J., O'Brien, E., & Konrath, S. H. (2017). Differences in empathic concern and perspective taking across 63 countries. *Journal of Cross-Cultural Psychology, 48*(1), 23–38.
- Dawson-McClure, A., Calzada, E., Huang, K. Y., Kamboukos, D., Rhule, D., Kolawole, B., & Brotman, L. M. (2015). A population-level approach to promoting healthy child development and school success in low-income, urban neighborhoods: impact on parenting and child conduct problems. *Prevention Science, 16*(2), 279–290. <https://doi.org/10.1007/s1121-014-0473-3>.
- Downer, J., & Yazejian, N. (2013). *Measuring the quality and quantity of implementation in early childhood interventions (OPRE research brief OPRE 2013-12)*. Office of Planning, Research and Evaluation, Administration for Children and Families, U.S. Department of Health and Human Services.
- Gay, G. (2018). *Culturally responsive teaching: theory, research, and practice*. Teachers College Press.
- Golas, J. C., Horm, D., & Caruso, D. A. (2006). Challenges in implementing center-based and home-based early head start programs. *Journal of Research in Childhood Education, 21*(2), 163–175. <https://doi.org/10.1080/0256854609594586>
- Goetz, J., & Dayton, C. (2016). *Hearts and minds on babies implementation report: Pilot Year*. Unpublished research document.
- Hamre, B. K., Partee, A., & Mulcahy, C. (2017). Enhancing the impact of professional development in the context of preschool expansion. *AERA Open, 3*(4), 1–16. <https://doi.org/10.1177/2332858417733686>.
- Hazegh, M. (2020). *Characteristics of effective early childhood leaders: emergence of Relational Leadership Professional and ethical consideration for early childhood leaders* (pp. 1–27). IGI Global.
- Head Start Early Childhood Learning & Knowledge Center (n.d.) Training and Professional Development. <https://eclkc.ohs.acf.hhs.gov/policy/45-cfr-chap-xiii/1302-92-training-professional-development>.
- Hooper, A., Hustedt, J. T., Slicker, G., Hallam, R. A., & Gaviria-Loaiza, J. (2022). Linking early Head Start children's social-emotional functioning with profiles of family functioning and stress. *Journal of Family Psychology, 10.1037/fam0001014*.
- Jackson, K. R., Fixsen, D., & Ward, C. (2018). Four domains for rapid school improvement. National Implementation Research Network. <https://www.nirn.fpg.unc.edu/resources/four-domains-rapid-school-improvement-implementation-framework>
- Kellogg, E. (2020). Fostering healthy mental, emotional, and behavioral development through effective implementation and Scale-Up. *Journal of Youth Development, 15*(3), 1–27. <https://doi.org/10.5195/jyd.2020.950>.
- Leis, J., & Shojania, K. G. (2017). A primer on PDSA: executing plan-do-study-act cycles in practice, not just in name. *BMJ Quality & Safety, 26*, 572–577. <https://doi.org/10.1136/bmjqs-2016-006245>.
- Lonigan, C. J., Farver, J. M., Phillips, B. M., & Clancy-Menchetti, J. (2011). Promoting the development of preschool children's emergent literacy skills: A randomized evaluation of a literacy-focused curriculum and two professional development models. *Reading and Writing, 24*(3), 305–337.
- Ma, Y., Bang, D., Wang, C., Allen, M., Frith, C., Roepstorff, A., & Han, S. (2014). Sociocultural patterning of neural activity during self-reflection. *Social Cognitive and Affective Neuroscience, 9*(1), 73–80. <https://doi.org/10.1093/scan/nss103>.
- Mendez, J. L. (2010). How can parents get involved in preschool? Barriers and engagement in education by ethnic minority parents of children attending Head Start. *Cultural Diversity and Ethnic Minority Psychology, 16*(1), 26–36. <https://doi.org/10.1037/a0016258>.
- Menke, R., Adekoya, A., Shine, B. K., Barron, C., Brophy-Herb, H., Vallotton, C., Stacks, A. M., Rosenblum, K., & Muzik, M. (2018). *What early head start families want, and how they want it: Lessons learned from hearts and minds on babies*. Poster presented at the National Research Conference on Early Childhood, Arlington, VA.
- Miller, E. B., Canfield, C. F., Morris, P. A., Shaw, D. S., Cates, C. B., & Mendelsohn, A. L. (2020). Sociodemographic and psychosocial predictors of VIP attendance in Smart beginnings through 6 months: effectively targeting at-risk mothers in early visits. *Prevention Science, 21*(1), 120–130. <https://doi.org/10.1007/s1121-019-01044-y>.
- Mucka, L. E., Dayton, C. J., Lawler, J., Kirk, R., Alfafara, E., Schuster, M. M., Miller, N., Ribaud, J., Rosenblum, K. L., & Muzik, M. (2017). Mixed-methods evaluation of participant recruitment and retention in the Mom Power parenting intervention program. *Infant Mental Health Journal, 38*(4), 536–550. <https://doi.org/10.1002/imhj.21652>.
- Muzik, M., Rosenblum, K. L., Alfafara, E. A., Schuster, M. M., Miller, N. M., Wadell, R. M., & Kohler, E. S. (2015). Mom Power: preliminary outcomes of a group intervention to improve mental health and parenting among high-risk mothers. *Archives of Women's Mental Health, 18*, 507–521. <https://doi.org/10.1007/s00737-014-0490-z>.
- Proctor, E., Silmere, H., Raghavan, R., Hovmand, P., Aarons, G., Bunker, A., Griffey, R., & Hensley, M. (2011). Outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda. *Administration and Policy in Mental Health and Mental Health Services Research, 38*(2), 65–76. <https://doi.org/10.1007/s10488-010-0319-7>.
- Rosenblum, K. L., Lawler, J., Alfafara, E., Miller, N., Schuster, M., & Muzik, M. (2018). Improving maternal representations in high-risk mothers: A randomized, controlled trial of the Mom Power parenting intervention. *Child Psychiatry & Human Development, 49*, 372–384. <https://doi.org/10.1007/s10578-017-0757-5>.
- Rosenblum, K. L., Muzik, M., Morelen, D. M., Alfafara, E. A., Miller, N. M., Wadell, R. M., Schuster, M. M., & Ribaud, J. (2017). A community-based randomized controlled trial of the Mom Power parenting intervention for mothers with interpersonal trauma histories and their young children. *Archives of Women's Mental Health, 20*, 673–686. <https://doi.org/10.1007/s00737-017-0734-9>.
- Sheridan, S. M., Fernandez, V. A., Knoche, L., Stacks, A. M., Van Horne, B. S., Bouza, J., Greenfield, D. B., Montroy, J. J., Dwyer, K. M., & the Early Head Start Parent-Teacher Intervention Consortium. (2020). Building a real-world evidence base for improving child and family outcomes. *Journal of Applied Research on Children: Informing Policy for Children at Risk, 11*(1), article 11. <https://digitalcommons.library.tmc.edu/childrenatrisk/vol11/iss1/11>
- Spoth, R., & Redmond, C. (2000). Research on family engagement in preventative interventions: Toward improved use of scientific findings in primary prevention practice. *Journal of Primary Prevention, 21*(2), 267–284.
- Stacks, A. M., Bouza, J., Knoche, L. L., Fernandez, V. A., Van Horne, B. S., Dwyer, K. M., & the Early Head Start Parent-Teacher Intervention Consortium. (2022). *Coordinated teacher and parent interventions for early Head Start: supporting interactions and children's development*. ZERO TO THREE. (Supplement 2021–2022).

Trommsdorff, G., & Cole, P. M. (2011). *Emotion, self-regulation, and social behavior in cultural contexts*. The Guilford Press.

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