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Postpartum Mothers' Preferences for a Virtual Program Targeting Maternal Depression and Support of Infant Social-Emotional Development: Lessons Learned from Mom and Baby Net

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Abstract

It is well-recognized that maternal depression is an adverse mental health outcome and is associated with negative physical health outcomes for mothers and infants. In the United States, minoritized women are significantly more likely to experience postpartum depression compared to white women (Bauman et al, 2020, Niel & Payne, 2020). Furthermore, due to extreme access barriers, minoritized women are significantly less likely to gain access to and continue treatment (Kozhimannil et al, 2011). Depressive symptoms can compromise maternal-infant interaction and cause delays in infant social-emotional development and communication for infants (Kingston and Tough, 2014, Mughal et al, 2019, Neil and Payne, 2020). Although there are effective interventions for reducing maternal depression and separate interventions for promoting positive parenting practices that scaffold infant social communication, rarely are these separate interventions integrated (Baggett et al, 2021a). Uniquely, a recently completed randomized control trial study with a socioeconomically disadvantaged sample of primarily African American women (N=184) explored two parallel virtual intervention programs targeting maternal depression and positive parenting: a cognitive behavioral approach or a person-centered support approach (Baggett et al, 2023). As little is known about the preferences of Black mothers for mobile coaching interventions targeting maternal depression and practices for promoting infant social communication, future research is warranted to optimize reach, access, and engagement in such programs. This study addresses this need by examining mothers' interview reports of their preferences for virtual intervention. This secondary analysis study was conducted using interview data from a subsample of mothers (N=30) from the original Mom and Baby Net RCT (Baggett et al, 2021b). Interview data was transcribed and NVivo was used to support exploration of the data. Themes were then identified, defined, and examples and non-examples

were specified for the purpose of quantitative coding to produce a summary of the frequencies of emergent themes with a socioeconomically disadvantaged sample of primarily African American women. Motivating factors for program engagement were identified including a desire to seek help for postpartum depression and coach support. These findings of Black mothers' preferences for virtual intervention provide implications for future MBN implementation studies and similar programs.

Keywords: Maternal depression, postpartum, parenting, infants, m-Health intervention preferences

POSTPARTUM MOTHERS' PREFERENCES FOR A VIRTUAL PROGRAM TARGETING MATERNAL DEPRESSION AND SUPPORT OF INFANT SOCIAL-EMOTIONAL DEVELOPMENT: LESSONS FROM MOM AND BABY NET

by

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APPROVAL PAGE

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Author's Statement Page

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1.1 Maternal Depression and Consequences for Mother and Infant

Depression is highly common in the United States with approximately 16 million adults affected by depression each year (CDC, 2022). It is estimated that 1 in 6 adults will experience depression in their lifetime (CDC, 2022). Evidence suggests women are twice as likely to experience depression compared to men (Salk et al, 2017). According to the Centers for Disease Control and Prevention, about 1 in 10 women have experienced depression symptoms in the past year (CDC, 2022). Women experience depression at higher rates during the postpartum period as 1 in 8 women with a recent live birth reported symptoms of depression (CDC, 2022). Risk factors for depression among women include but are not limited to a family history or previous history of depression, lack of social support, preterm birth and pregnancy and birth complications (CDC, 2022).

Mental health conditions are among the most common complications women experience during pregnancy (Bauman et al, 2020). Among the leading underlying causes of pregnancy-related deaths, mental health conditions accounted for about 9% from 2008-2017 (Davis et al, 2019). More specifically, the incidence of perinatal depressive disorder in the United States is alarmingly high, as more than half a million pregnant and postpartum women develop a depressive disorder each year (Niel & Payne, 2020). According to data collected from the 2018 Pregnancy Risk Assessment Monitoring System (PRAMS), the prevalence of postpartum depression symptoms (PDS) among women with a recent live birth was 13.2% (Bauman et al, 2020). Moreover, subgroup differences were observed. For example, in some groups "approximately 20% of women reported PDS, including those aged ≤19 years, who were American Indian/Alaska Native, smoked cigarettes during pregnancy or postpartum, experienced

intimate partner violence before or during pregnancy, or self-reported depression before or during pregnancy" (Bauman et al, 2020).

Despite evidence that untreated perinatal mood and anxiety disorders (PMADs) are an extraordinarily costly adverse health outcome, many disorders are often undetected and untreated. For the birth cohort of 2017, the estimated societal cost due to PMADs was $14 million (Luca et al, 2020). From conception to 5 years postpartum, the estimated costs for each mother-child dyad were $31,800 (Luca et al, 2020). These costs were most impacted by "reduced economic productivity among affected mothers, more preterm births, and increases in maternal health expenditures" (Luca et al, 2020). Though universal screening is recommended by many organizations including the United States Preventive Task Force and the American College of Obstetricians and Gynecologists (ACOG), maternal depression often goes unnoticed and untreated (ACOG, 2018, USPSTF, 2019). Of women experiencing postpartum depression, about 60% of women do not receive a diagnosis and 50% of women with a diagnosis do not receive treatment (Ko et al, 2017). According to recent PRAMS data, 1 in 8 women were not asked about depression during a postpartum visit, and 1 in 5 were not asked during prenatal visits (Bauman et al, 2020). Due to the serious consequences associated with untreated postpartum depression, it is imperative that mothers receive adequate screenings, diagnosis, and treatment.

It is well documented that postpartum depression causes adverse outcomes for the mother and infant. Evidence suggests that a mother experiencing depression during pregnancy is at an increased risk for poor birth outcomes including preterm birth, low birth weight, and small-for-gestational age, which are among the leading causes of infant mortality (Szegda et al., 2014). During the postpartum period, depressive disorder can cause engagement in risky behaviors, negative psychological and physical health, poor mother-infant bonding, and developmental

delays for the child (Slomian et al, 2019). Compared to non-depressed mothers, depressed mothers are less likely to engage in healthy parenting practices (Slomian et al, 2019). “Depressed mothers are more irritable and less responsive to their infants, more likely to make negative attributions for infant crying, show less pleasure in response to infant social bids, and talk less to their infants relative to nondepressed mothers” (Baggett et al, 2021). Due to the difficulty of caring for the infant, infants of depressed mothers may be at an increased risk for developmental delays. Extensive evidence shows that there is a significant negative relationship between postpartum depression and infant cognitive development, language development, infant behaviors, overall infant health concerns, and quality of sleep (Slomian et al, 2019). Postpartum depression has also been linked to negative effects on breastfeeding including discontinued breastfeeding and breastfeeding problems (Dias & Figueiredo, 2015, Slomian et al, 2019).

1.2 Disparities and Associated Outcomes

Evidence shows that postpartum depression disproportionately affects minority groups that are also the least likely to obtain and continue treatment (Pao et al, 2019, Kozhimannil et al., 2011). The prevalence of postpartum depression among Black and Latina women (36-67%) is significantly higher than the general population (10-15%) (Pao et al, 2019). Additionally, postpartum depression disproportionately affects low-income women as they are two to four times more likely to experience postpartum depression compared to mothers of higher socioeconomic status (Hansotte et al, 2017). Though minority and low-income populations are at the greatest risk for experiencing postpartum depression they are least likely to be screened (Sidebottom et al, 2021). A recent study assessing the prevalence of perinatal depression among a large non-profit health care system found that minority women (African American, Asian, Native American, and multi racial) were less likely to be screened for postpartum depression

compared to white women (Sidebottom et al, 2021). Compared to privately insured women, women insured by Medicaid/Medicare were also less likely to be screened for postpartum depression (Sidebottom et al, 2021). Furthermore, levels of postpartum treatment initiation and continued care among low-income minoritized women are particularly low compared to white women (Kozhimannil et al, 2011). Barriers to care may include stigma, insurance coverage, time constraints, childcare, and transportation (Kozhimannil et al, 2011). As low-income minoritized women are most likely to experience postpartum depression, their infants are most at risk for experiencing developmental delays (Baggett et al, 2021).

Moreover, such conditions have worsened with the emergence of the COVID-19 pandemic. Evidence shows that during the COVID-19 pandemic, Black pregnant individuals reported higher rates of depression and anxiety compared to non-Latinx White individuals and described more COVID-19-specific worries (Gur et al, 2020). Additionally, a recent study assessing how negative experiences during the COVID-19 pandemic and structural racism has affected the postpartum mental health of Black birthing people found that individuals most at risk for postpartum depression and anxiety experienced more negative COVID-19 experiences and reports of racism (Njoroge et al, 2022). Such evidence suggests that accessible interventions are desperately needed to improve maternal mood among minority populations.

1.3 Existing Evidence-Based Interventions

As maternal depression is treatable through effective interventions (Ko et al, 2017), there is a need for accessible, evidence-based interventions targeting maternal depression and promote positive parenting practices. While there are many existing interventions aimed at improving parenting practices and depression symptoms among postpartum mothers, there continue to be glaring disparities in accessing evidence-based interventions that target both maternal depression

and positive parenting practices (Baggett et al, 2021, Fitelson et al, 2010, Jeong et al, 2021). Access barriers include and are not limited to a lack of childcare, transportation, unpredictable work schedules, shift work, and limited financial resources, which severely restrict access for low-income women (Hansotte et al, 2017). A recently completed randomized controlled trial study of intervention, targeting both maternal depression and positive parent practices, was designed to address these barriers by offering a remote coaching intervention targeting maternal depression and promotion of positive parenting practices (Baggett et al, 2021).

1.4 Mom and Baby Net Randomized Controlled Trial

The Mom and Baby Net Study (protocol Baggett et al, 2021), included follow-up interviews from a randomly selected subset of mothers who had been randomized to one of two parallel digital interventions with virtual coaching: The Mom and Baby Net (MBN), a Cognitive Behavioral approach, or the comparative group, Depression and Developmental Awareness (DDAS) program, a Person-Centered approach. The MBN program is comprised of two evidence-based virtual programs: Mom-Net, which targets maternal depression (Sheeber et al,2012, Sheeber et al, 2017), and Baby-Net, which targets positive parenting practices that scaffold infant social communication and development (Baggett et al., 2010, Baggett et al., 2020). Randomized controlled trials have provided evidence of efficacy and effectiveness for both programs. Findings showed that participants in the Mom-Net program had a significant reduction in depressive symptoms and high levels of engagement (Sheeber et al., 2012, Sheeber et al.,2017). Additionally, findings showed that participants in the Baby-Net program showed significant increases in social engagement with their mothers and the environment and significantly higher maternal language-supportive behavior among the high dosage group (Baggett et al., 2010, Baggett et al., 2020). As the MBN content focuses on specific tools to

improve mood and positive parenting practices, DDAS content focuses on maternal depression and infant developmental milestones awareness (Baggett et al., 2021).

The digital structure of programs was identical and comprised of the following: app-based administration of a 14-session intervention with video narration to reduce literacy demand, activities to present session content, check-in questions with immediate feedback to support knowledge acquisition, creation of a 5-minute app-collected video of mother-infant interactions for coach and parent review in subsequent sessions, and weekly video coach calls to support mother learning (Baggett et al, 2021). Additionally, all participants were given an iPhone to complete program activities and for personal use.

Two recent studies describe progress in the ongoing randomized control trial of the MBN program. A recent study examining the success of different referral approaches found that self-referrals were four times more productive than gatekeeper referrals by community agency staff or research staff (Baggett et al, 2020). Notably, during the pandemic, mothers self-referred at a relative daily rate of 19.5 times higher compared to before the pandemic (Baggett et al, 2021). Additionally, data from the ongoing randomized controlled trial reports that groups of women engaged in the program prior to COVID and those during COVID both showed high rates of progression through the program. Ninety-seven percent of mothers engaged pre-pandemic and 86% of mothers engaged after the pandemic progressed successfully (from consent to completion of the first session) (Baggett et al, 2021). Furthermore, virtual intervention progression rates during the COVID-19 pandemic were at least as high or higher than progression rates in home visiting programs prior to the pandemic (56 to 97%) (Maternal, Infant, and Early Childhood Home Visiting Technical Assistance Coordinating Center, 2015). Such evidence suggests that recruitment and participation in a program such as MBN is feasible during a pandemic.

1.5 Need to Amplify Black Women's Voices

Elevating the voices of minoritized women is critical for understanding their experiences and informing culturally appropriate interventions. Historically, the voices of minority groups are not represented in research (Spates, 2012). Additionally, when minority groups are included in research participation rates are low (Scharff et al, 2010). Due to the historical mistreatment of minority groups in clinical research, there is mistrust between minority groups and research institutions (Scharff et al, 2010). Furthermore, "Black women's experiences are significantly lacking in the psychology literature" (Spates, 2012). Without understanding Black women's experiences, opportunities are missed to effectively address postpartum depression and other perinatal mood and anxiety disorders. Amplifying the voices of Black women is necessary to inform necessary interventions. Follow-up interview reports from a recent MBN randomized control trial provide a unique opportunity to understand Black women's perspectives.

1.6 Statement of Purpose

Further research is needed to better understand mothers' preferences for features and functions of virtual interventions and their perceptions about features and functions that would make it most feasible and appealing for other mothers. The thesis will seek to examine what preferences mothers have for a virtual intervention to optimize program reach and acceptance. This research may be used to improve the MBN program and develop implications for similar programs.

1.7 Research Questions

Research Question 1: What themes emerge from (a) mothers' views of their own motivation to initiate participation in a virtual coaching intervention program and (b) mothers' views of their own motivation to continue engagement in a virtual coaching intervention program?

Research Question 2: What themes emerge from (a) mothers' views of what would motivate other mothers to initiate participation in a virtual coaching intervention program and (b) mothers' views of what would motivate other mothers to continue engagement in a virtual coaching intervention program?

Research Question 3: What themes emerge from the mothers' views of program experiences, which they view as meaningful to communicate to their family and friends?

Chapter II: Methods and Procedures

2.1 IRB Approval

Prior to the conduct of this study, IRB approval was obtained from the Georgia State University Institutional Review Board on March 24th, 2022.

2.2 Original MBN Interview Data Collection

A purposive sample was recruited by randomly selecting a subset of Mom and Baby Net participants (N=49) who agreed to be contacted for future studies following the completion of a larger randomized controlled trial study of the MBN program (N=148) (Baggett et al., 2021). The larger study sample was comprised of a "socioeconomically disadvantaged group of primarily African American women" living "in the urban core of a large southern US city" (Baggett er al, 2021). Participants were "biological mothers aged 18 years or older with an infant younger than 1 year, who are English speaking, and who meet the Patient Health Questionnaire (PHQ)-2 criteria for elevated depression symptoms" (Baggett et al, 2021). Of the 49 mothers that expressed interest in participating, 40 (82%) mothers were successfully contacted by their study coach. Coaches provided a summary of the follow-up interview protocol and asked mothers if they would be interested in participating in an interview with an independent interviewer who was not the participant's coach. Nine mothers were unable to be contacted after at least two call attempts. Of the 40 mothers that scheduled a consent call, 8 were unable to be reached yielding a sample of 32 (65%) mothers that completed a consent call via Zoom**.**

2.3 Interview Procedures

Within two weeks of the informed consent call, 30 (61%) participants (16 in the Mom and Baby Net intervention group, 14 in an alternate intervention) completed an interview call via Zoom using an established interview guide (See Appendix A). Two mothers did not complete the

interviews as they were unresponsive after 5 attempts. Interviews took place between May and June 2022. To limit bias, interviews were conducted with an interviewer who had no prior contact with the participant during the larger RCT study. After completing the interview, participants were compensated for their time with a $50 gift card.

2.4 Secondary Analysis Study

The interview sample consisted of 30 primarily African American women who completed the MBN program (See Table 1). Interview responses were transcribed verbatim by a graduate research assistant. All identifying information was removed and responses were entered into NVivo to support exploration of the data. Data analysis was guided by thematic analysis and aspects of grounded theory. The grounded theory approach has been widely used in qualitative research studies and emphasizes that themes emerge from the dataset and are not predetermined (Amaral et al, 2022, Brummett & Afifi, 2019, Eckstein & Danbury, 2020, Halim & Meyers, 2010, Mason & Meyers, 2001). As the current study aims to amplify the voices of Black mothers, this approach allowed for themes to emerge from the dataset to better understand postpartum mothers' preferences for virtual programs. An inductive approach, consistent with grounded theory, was employed whereby the purpose was to identify key words and phrases that emerged from the data rather than superimposing a priori researcher coding structure from the outset. For example, in the initial coding phase "important words or groups of words are identified and labelled" (Tie et al, 2019). The NVivo word frequency function was used to identify the top 30 words occurring across cases of responses to each research question for the MBN condition and separately for the DDAS condition (See Appendix B). Next, NVIVO was used to generate the context around each of the key words that emerged.

The coding team consisted of two coders: 2 Public Health Graduate Research Assistants. Coders familiarized themselves with the data by reviewing key words and context generated by NVivo, including synonyms for each research question. Nouns and verbs were isolated and filler words (e.g., like, lot, just, well) were culled from the list. The NVivo Visualization function was used to create a visual map displaying groupings of key words and synonyms for responses to each research question (See Appendix C). The coding team collectively reviewed these and generated themes, which were defined, and examples and non-examples of key words and phrases were specified within a codebook (See Appendix D).

The codebook was then used by the coders to independently complete thematic analysis. Themes and subthemes were coded in NVivo. The occurrence of themes and subthemes for each research question were counted within NVivo to produce frequencies. Frequencies were reported for the MBN group and DDAS group separately.

Intercoder agreement and Kappa coefficient were calculated within NVIVO to determine reliability (See Appendix E). Intercoder agreement was calculated as total number of agreements divided by total number of agreements + disagreements. The minimum acceptable agreement percentage was 80% (McHugh, 2012). Additionally, the minimum acceptable Kappa coefficient for each research question was 0.70, as 0.61-0.80 is considered substantial agreement (McHugh, 2012). To assess reliability, coders were initially assigned 25% of the data. Coders then met to discuss disagreements and practiced identifying examples and non- examples. The remaining 75% of the data was then coded independently by coders and intercoder agreement was calculated as described above. Minimum reliability standards for Kappa for all themes and subthemes was met (Themes, mean=0.90, standard deviation= 0.13, range=0.56-1.00; Subthemes, mean=0.91 standard deviation= 0.13, range=0.57-1.00). Additionally, minimum

intercoder agreement for all themes and subthemes were met (Themes, mean= 96.00, standard deviation=5.43, range=83.82-100; Subthemes, mean=96.43 standard deviation=5.32, range=82.81-100).

Table 1

Sample Demographics

Variable (N=30)	**Value**
Condition, %, (n)	
PALS	53.33%, (16)
DAS	46.67%, (14)
Maternal age in years, mean (SD); range	31.39 (4.76); 22.83-39.84
Child age in months, mean (SD); range	6.95 (3.05); 0.59-11.89
Number of children in the home, mean (SD); range	2.57 (1.57); 1-6
Maternal race	
Black, %(n)	86.67%, (26)
Multi-Racial/Unknown, %(n)	10%, (3)
White, % (n)	3.33%, (1)
Maternal Ethnicity	
Latinx, % (n)	3.33%, (1)
Maternal education (<college degree), % (n)	73.33%, (22)
Marital Status (Not partnered), % (n)	30%, (9)

Chapter III: Results

3.1 Research Question 1 (A)

Four themes were identified as motivating factors for mothers to initiate participation in a virtual coaching program: desire to learn to be and be the best parent I can be (including subthemes being a first-time mother, being a mother with other children, premature/special needs infant, and desire to observe milestones), mental health concerns, desire for support, and being referred to the program. The number of references for each theme for the MBN group and DDAS group are reported separately (See Table 2). Intercoder reliability exceeded the minimum agreement (Kappa=0.99) (See Appendix E).

Many mothers described a desire to learn to be and be the best parent they can be for their infant as a reason to initiate engagement in the program. One mother shared, “I feel like it would open my eyes for different things as in being a mother, what I can give more to being a mother.” Another mother expressed that she “thought it would just be a good program to join” to “learn to engage with the baby more.” Being a first-time mother emerged as a subtheme for a desire to learn to be and be the best parent I can be. One mother shared that “being a first-time mom, I felt very overwhelmed, so I was like yes, any additional you know advice or help I was open to.” Additionally, being a mother with older children emerged as a subtheme as mothers described a desire to learn to be and be the best parent they can be for more than one child. “You know I wasn't a new mom, but I was like starting over and my like my oldest daughter she's 11 now and my son is 3 now.” Additionally, two mothers expressed a desire to learn to be and be the best parent they can be specifically for a premature baby. One mother shared she believed the program “would help me as well to see the progress from beginning to end. He was a 31 weeker.” Another participant shared that she “had just had a premature baby”. A desire to

observe milestones also emerged as a subtheme to a desire to learn to be and to be the best parent I can be. One participant described, “trying to see the milestones for the kids and how they're doing and how we interact”. Another participant shared a desire to “make sure my daughter was ...meeting milestones and I felt like this would be a good program.”

Participants described mental health concerns as a reason to engage in the program. For example, one mother expressed feelings of distress, “if I'm being honest I felt like I was going to go crazy transitioning from having a newborn to another newborn was just a lot and I was just tired, overwhelmed, frustrated, irritated all the bad stuff I was going through it at that time.” Another mother described experiencing postpartum depression in previous pregnancies, “I know with my first two pregnancies I experienced a lot of postpartum depression, and I think just the way the flyer was worded um it kind of caught my eye because I know I wanted this pregnancy to be different.” Mothers also described engaging in the program as a desire for support. One mother shared that she “really needed some type of outlet or some kind of help.” Another participant expressed that “any support that I could get I was open to.” Lastly, being referred to the program was identified as a theme. Mothers mentioned being referred to the program by peers, social workers, hospital staff, and program staff at the WIC office.

Table 2

Research Question 1(A) Themes and Occurrences

Theme/Subtheme	Number of occurrences (MBN)	Number of occurrences (DDAS)	Total number of occurrences
Desire to learn to be and to be the best parent I can be	13	10	23
Being a first-time mother	2	3	5
Being a mother with older children	6	0	6
Premature Infant	1	1	2
Desire to observe milestones	1	4	5
Mental Health Concerns	9	1	10
Desire for support	8	1	9
Referred to the Program	6	3	9

3.2 Research Question 1 (B)

Four themes were identified as motivating factors for mothers to continue engagement in a virtual coaching program: desire to complete for infant's wellbeing, coach support (including subtheme emotional support), program support features (including subthemes app self-learning content (related to improving mood or supporting infant development), coach calls or check ins, and creating videos with my baby), personal desire to complete the program (desire for mastery). The number of references for each theme for the MBN group and DDAS group are reported separately (See Table 3). Intercoder reliability exceeded the minimum agreement (Kappa=0.79) (See Appendix E).

Mothers mentioned a desire to complete the program for infant's wellbeing. One mother shared, "I wanted to finish the mom and baby network program because it was a new experience and I wanted to experience those things with my baby girl." Another participant described that her baby was "really interested" so she "kept going doing the activities in the program." Mothers

also share that emotional support from their coach motivated them to complete the program. One mother expressed, “she was that shoulder that I needed to cry on, lean on. So, that the coach was definitely the biggest support for me.” Another participant shared that her coach “was very uplifting and positive.” Mothers also described program support features as motivating factors to continue engagement in the program including app self-learning content, coach calls or check ins, and creating videos with my baby. One participant shared, “definitely the app that helped me out a lot. Because I could like.. like the activities a 100% trying to find other things to take my mind off of things that kept me down.” Last, mothers shared a personal desire to complete the program or desire for mastery. For example, one mother expressed, “I am a fighter. I try to finish strong. I like to try to see through things whether it's good or bad you just always have to look at the positive outcome of things or look at the bigger picture.

Table 3

Research Question 1(B) Themes and Occurrences

Theme/Subtheme	Number of occurrences (MBN)	Number of occurrences (DDAS)	Total number of occurrences
Desire to complete for infant’s wellbeing	5	6	11
Coach support	14	10	24
Emotional support	9	5	14
Program support features	18	13	31
App self-learning content (Related to improving mood and supporting development)	12	7	19
Coach calls or check ins	5	1	6
Creating videos with my baby	2	5	7
Personal desire to complete the program (Desire for mastery)	8	1	9

3.3 Research Question 2 (A)

Five themes were identified as mothers' views of what would motivate other mothers to initiate participation in a virtual coaching intervention program: learning positive ways to interact with baby (positive parenting practices) (including subtheme recognizing infant milestones), learning to recognize depression symptoms and improve mood, improving infant wellbeing, coach support (including subthemes emotional and informational support), program support features (including subthemes app self-learning content (related to improving mood and supporting infant development), coach calls or check ins, and creating videos with my baby. The number of references for each theme for the MBN group and DDAS group are reported separately (See Table 3). Intercoder reliability exceeded the minimum agreement (Kappa=1.00) (See Appendix E).

Many mothers described learning positive ways to interact with baby and positive parenting practices as a motivating factor for other mothers to participate in the program. One mother shared, "it gives you a lot of positive tips on what are things that your baby can respond to positively and just more information on doing things in a healthy way." Mothers also described the ability to recognize milestones for their baby. For example, one mother stated, "if I didn't have to explain to like my coach what was going on I probably wouldn't have seen some signs that were happening, and I'm like little things that you don't really think about until later." Additionally, mothers described the learning to recognize depression symptoms and improve mood. A participant shared, "I think sometimes when you're in the midst of a depression it's very hard to see what you can do to get out and I think that the program really helped you like hey this is just a downward spiral, and these are the things that you do to redirect your thoughts. Mothers

also shared how the program can help improve infant wellbeing. One mother shared that the program "can definitely help your child mentally as well as physically grow and develop."

Mothers also described emotional and informational coach support as a motivating factor for other mothers to engage in the program. One mother stated that she would tell another mother "that they always had their coach for support." Another participant stated that she would express to another mother "that the coaches are amazing. They definitely listen to you and not just only like for their job's sake, but they definitely sympathize what you're what you got going on." Last, specific program features including app self-learning content, coach calls or check ins, and creating videos with my baby were mentioned. For example, one mother shared, "I would probably tell them that having that coach check in once a week is hugely beneficial.

Table 4

Research Question 2(A) Themes and Occurrences

Theme/Subtheme	Number of occurrences (MBN)	Number of occurrences (DDAS)	Total number of occurrences
Learning positive ways to interact with baby (positive parenting practices)	29	25	54
Recognizing infant milestones	5	12	17
Learning to recognize depression symptoms and improve mood	18	9	27
Improving infant wellbeing	12	4	16
Coach support	9	8	17
Emotional support	8	4	12
Informational support	2	5	7
Program support features	11	16	27
App Self-Learning Content (Related to improving mood and supporting development)	8	4	12
Coach calls or check ins	4	3	7
Creating videos with my baby	6	1	7

3.4 Research Question 2 (B)

Three themes were identified as motivating factors for other mothers to continue engagement in the program: coach support (including subtheme emotional support), a desire to engage with other mothers (including a subtheme for mothers who have completed the program) and program support features (including subthemes app self-learning content (related to improving mood and supporting infant development). The number of references for each theme for the MBN group and DDAS group are reported separately (Kappa=0.87) (See Table 5). Intercoder reliability exceeded the minimum agreement (See Appendix E).

Mothers described emotional coach support as a motivating factor for other mothers to continue engagement in the program. One mother shared, “I think the instructor that's going to get you through because the coaches are very very helpful that is the main thing. I cannot stress enough they're very helpful especially like when you're feeling like your down and you're having a bad day. They're going to motivate you to keep you going.” Similarly, another participant shared, that she would tell another mother to “always reach out to your coach. I would always give that advice. Just always reach out cause she’s always there.” Mothers also described a desire to engage with other mothers. For example, one mother shared, “I think if the overall goal of the program is to assist with um postpartum depression or whether that's preventing it or helping people through it then it really having that community is going to be important just you know just having another mom to talk to that you know has experienced a success in the program.” Last, program support features including app self-learning content was identified as a theme. One mother recalled, “a support chapter and it's just like you know when you are feeling depressed you have to like you know find you know have like a good support system.” Another participant recalls a depression questionnaire included in the app where “if you're in this zone

reach out for support or if you're in the red zone you need to call someone to help." Furthermore, she shared that the feature could help "future moms go you know if I'm in that red zone, then I really need help. So, I think that's something that was really good for the program."

Table 5

Research Question 2(B) Themes and Occurrences

Theme/Subtheme	Number of occurrences (MBN)	Number of occurrences (DDAS)	Total number of occurrences
Coach support	7	8	15
Emotional support	6	6	12
Desire to engage with other mothers	3	1	4
Mothers who have completed the program	2	0	2
Program support features	8	7	15
App self-learning content (Related to improving mood or supporting infant development)	6	4	10

3.5 Research Question 3

Four themes were identified as meaningful program aspects to share with family and friends including: l learning to recognize depression symptoms and improve mood, learning positive ways to interact with baby (positive parenting practices) (including subtheme recognizing infant milestones), coach support (including subtheme emotional support), and program support features (including subtheme app self-learning content (related to improving mood and supporting infant development). The number of references for each theme for the MBN group and DDAS group are reported separately (Kappa=0.88) (See Table 6). Intercoder reliability exceeded the minimum agreement (See Appendix E).

Mothers mentioned that they shared learning to recognize depression symptoms and improve mood with their family and friends. For example, one mother shared, “I just told them it's an awesome little program going on and it helps you with your children and depression when you're going through things, and you need any help.” Similarly, another mother shared, “I really told them about how like it's helpful for mothers that are going through like postpartum depression or just like dealing with things mentally.” Mothers also mentioned learning positive ways to interact with their infant. For example, one mother expressed to her friends and family that the program helped her to “understand my child better and just get a better healthier outlook on what parenting is.” Mothers also mentioned ability to recognize milestones. For example, one mother shares speaking with her mother about observing milestones. “I would be like he hit that milestone and she was like yay!”

Mothers also describe the emotional support they received from their coach. For example, one mother stated, “I feel like I had someone to kind of talk to.” Last, mothers shared about program support features including app self-learning content. One mother shared, “the lessons that I learned in the everyday life to continue to help me, especially the pleasant activities and using sensitivity behaviors.”

Table 6

Research Question 3 Themes and Occurrences

Theme/Subtheme	Number of occurrences (MBN)	Number of occurrences (DDAS)	Total number of occurrences
Learning to recognize depression symptoms and improve mood	6	4	10
Learning positive ways to interact with baby (positive parenting practices)	8	4	12
Recognizing milestones	1	4	5
Coach support	2	4	6
Emotional support	1	4	5
Program support features	4	7	11
App Self-Learning Content (Related to improving mood or supporting infant development)	4	3	7

Chapter IV: Discussion and Conclusions

The study aimed to examine mothers' preferences for features and functions of virtual interventions and their perceptions about features and functions that would make it most feasible and appealing for other mothers. As elevating the voices of minoritized women is critical for understanding their experiences and informing culturally appropriate interventions, this study provides great insights from a sample of 30 primarily Black mothers that completed the MBN program. Mothers described motivating factors to initiate and continue engagement in the program for themselves and other mothers including a desire to learn to be and be the best I can be, mental health concerns, coach support, and specific program support features. Notably, there was much overlap with themes across research questions. More specifically, coach support and program support features emerged as a theme across all research questions. As literature suggests that long-term engagement in mental health applications is difficult to obtain (Kaveladze et al, 2022), it is critical to understand favorable features to initiate and continue engagement. The study findings offer implications of important program features to be included in future implementation of the MBN program and similar virtual programs focused on improving mood and infant development.

All themes and subthemes reported had at least five occurrences within the sample, with a few exceptions. First, two mothers mentioned a desire to learn to be and to be the best parent they can be specifically for a premature infant. As there may be a low occurrence of mothers in the interview sample (N=30) that have a premature infant, this theme may not have occurred at least five times. However, this finding offers a unique insight of the benefits of the program for mothers with premature infants. Additionally, four mothers expressed a desire to engage with other mothers in the program. This finding is also unique as it is not currently a feature of the

MBN program. As literature suggests that peer support may significantly affect perinatal depression (Fang et al, 2022), including engagement with other mothers in future implementation studies and similar programs may have benefits.

There are several study limitations in the present study. First, the study included a small sample size of mothers. Future research may assess preferences in a larger study sample and also further assess differences in preferences among intervention and control groups. Other limitations include methodological limitations with a single interview. To better understand mothers' preferences various research methods may be employed including a focus group and survey. Such research should continue to amplify the voices of Black women to inform necessary interventions. In conclusion, it is critical to understand mothers' experiences to create effective and culturally appropriate interventions.

References

ACOG Committee Opinion No. 757: Screening for Perinatal Depression. (2018). Obstetrics and gynecology, 132(5), e208–e212. https://doi.org/10.1097/AOG.0000000000002927

Amaral, A. D. R., Jung, A. K., Braun, L. M., & Blanco, B. (2022). Narratives of Anti-Vaccination Movements in the German and Brazilian Twittersphere: A Grounded Theory Approach. Media and Communication, 10(2), 144-156. https://doi.org/10.17645/mac.v10i2.5037

Baggett, K. M., Davis, B., Feil, E. G., Sheeber, L. B., Landry, S. H., Carta, J. J., & Leve, C. (2010). Technologies for expanding the reach of evidence-based interventions: Preliminary results for promoting social-emotional development in early childhood. *Topics in early childhood special education*, *29*(4), 226. https://doi.org/10.1177/0271121409354782

Baggett, K. M., Davis, B., Sheeber, L. B., Ammerman, R. T., Mosley, E. A., Miller, K., & Feil, E. G. (2020). Minding the Gatekeepers: Referral and Recruitment of Postpartum Mothers with Depression into a Randomized Controlled Trial of a Mobile Internet Parenting Intervention to Improve Mood and Optimize Infant Social Communication Outcomes. *International journal of environmental research and public health*, *17*(23), 8978. https://doi.org/10.3390/ijerph17238978

Baggett, K. M., Davis, B., Sheeber, L., Miller, K., Leve, C., Mosley, E. A., Landry, S. H., & Feil, E. G. (2021). Optimizing Social-Emotional-Communication Development in Infants of Mothers With Depression: Protocol for a Randomized Controlled Trial of a Mobile Intervention Targeting Depression and Responsive Parenting. *JMIR research protocols*, *10*(8), e31072. https://doi.org/10.2196/31072

Baggett, K. M., Davis, B., Mosley, E. A., Miller, K., Leve, C., & Feil, E. G. (2021). Depressed and Socioeconomically Disadvantaged Mothers' Progression Into a Randomized Controlled Mobile Mental Health and Parenting Intervention: A Descriptive Examination Prior to and During COVID-19. *Frontiers in psychology*, *12*, 719149. https://doi.org/10.3389/fpsyg.2021.719149

Baggett, K. M., Davis, B, Olwit, C. and Feil, E. G. (2023). Pre-intervention child maltreatment risk, intervention engagement, and effects on child maltreatment risk within an RCT of MHealth and parenting intervention. Frontiers in Digital Health, 5:1211651; doi: 10.3389/fdgth 2023.121166

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77-101.

Braun, V., & Clarke, V. (2012). *Thematic analysis*. American Psychological Association.

Brummett, E.A. & Afifi, T.D. (2019). A Grounded Theory of Interracial Romantic Partners' Expectations for Support and Strain with Family Members. *Journal of Family Communication, 19(3),* 191-212. https://doi.org/10.1080/15267431.2019.1623220

Centers for Disease Control and Prevention. (2022, January 18). *The social-ecological model: A framework for prevention*. https://www.cdc.gov/violenceprevention/about/social-ecologicalmodel.html

Centers for Disease Control and Prevention. (2022, May 2). *Identifying Maternal Depression.* https://www.cdc.gov/reproductivehealth/vital-signs/identifying-maternal-depression/index.html

Centers for Disease Control and Prevention. (2022, May 23). *Depression among women*. https://www.cdc.gov/reproductivehealth/depression/index.htm

Centers for Disease Control and Prevention. (2022, September 14). *Mental health conditions: Depression and anxiety*. https://www.cdc.gov/tobacco/campaign/tips/diseases/depression-anxiety.html

Charmaz, K. & Thornberg, R. (2021). The pursuit of quality in grounded theory. *Qualitative Research in Psychology,* 18(3), 305-327. https://doi.org/10.1080/14780887.2020.1780357

Davis, N. L., Smoots, A. N., & Goodman, D. A. (2022, April 13). *Pregnancy-Related Deaths: Data from 14 U.S. Maternal Mortality Review Committees, 2008-2017*. https://www.cdc.gov/reproductivehealth/maternal-mortality/erase-mm/mmr-data-brief.html

Dias, C. C., & Figueiredo, B. (2015). Breastfeeding and depression: A systematic review of the literature. *Journal of Affective Disorders*, *171*, 142-154. https://doi.org/10.1016/j.jad.2014.09.022Fitelson, E., Kim, S., Baker, A. S., & Leight, K. (2010). Treatment of postpartum depression: clinical, psychological, and pharmacological options. *International journal of women's health*, *3*, 1–14. https://doi.org/10.2147/IJWH.S6938

Eckstein, J. J., & Danbury, C. (2020). What is violence now?: A grounded theory approach to conceptualizing technology-mediated abuse (TMA) as spatial and participatory. *The Electronic Journal of Communication*, 29(3-4). https://doi.org/10.1080/15267431.2019.1623220

Fang, Q., Lin, L., Chen, Q., Yuan, Y., Wang, S., Zhang, Y., Liu, T., Cheng, H., & Tian, L. (2022). Effect of peer support intervention on perinatal depression: A meta-analysis.

General hospital psychiatry, 74, 78–87. https://doi.org/10.1016/j.genhosppsych.2021.12.001

Feil, E. G., Baggett, K., Davis, B., Landry, S., Sheeber, L., Leve, C., & Johnson, U. (2020). Randomized control trial of an internet-based parenting intervention for mothers of infants. *Early Childhood Research Quarterly*, *50*, 36-44. https://doi.org/10.1016/j.ecresq.2018.11.003

Glaser, B. G., Strauss, A. L. (1967). The Discovery of Grounded Theory: Strategies for Qualitative Research. United Kingdom: Aldine.

Gur, R. E., White, L. K., Waller, R., Barzilay, R., Moore, T. M., Kornfield, S., Njoroge, W., Duncan, A. F., Chaiyachati, B. H., Parish-Morris, J., Maayan, L., Himes, M. M., Laney, N., Simonette, K., Riis, V., & Elovitz, M. A. (2020). The Disproportionate Burden of the COVID-19 Pandemic Among Pregnant Black Women. *Psychiatry research*, *293*, 113475. https://doi.org/10.1016/j.psychres.2020.113475

Halim, S., & Meyers, M. (2010). News coverage of violence against Muslim women: A view from the Arabian Gulf. *Communication, Culture & Critique*, 3(1), 85-104. https://doi.org/10.1111/j.1753-9137.2009.01059.x

Hansotte, E., Payne, S. I., & Babich, S. M. (2017). Positive postpartum depression screening practices and subsequent mental health treatment for low-income women in Western countries: a systematic literature review. *Public health reviews*, *38*, 3. https://doi.org/10.1186/s40985-017-0050-y

Jeong, J., Franchett, E. E., Ramos de Oliveira, C. V., Rehmani, K., & Yousafzai, A. K. (2021). Parenting interventions to promote early child development in the first three years of life: A global systematic review and meta-analysis. *PLoS medicine*, *18*(5), e1003602. https://doi.org/10.1371/journal.pmed.1003602

Kaveladze, B. T., Wasil, A. R., Bunyi, J. B., Ramirez, V., & Schueller, S. M. (2022). User Experience, Engagement, and Popularity in Mental Health Apps: Secondary Analysis of App Analytics and Expert App Reviews. JMIR human factors, 9(1), e30766. https://doi.org/10.2196/30766

Kingston, D., & Tough, S. (2014). Prenatal and postnatal maternal mental health and school-age child development: a systematic review. *Maternal and child health journal*, *18*(7), 1728–1741. https://doi.org/10.1007/s10995-013-1418-3

Ko, J. Y., Rockhill, K. M., Tong, V. T., Morrow, B., & Farr, S. L. (2017). Trends in Postpartum Depressive Symptoms - 27 States, 2004, 2008, and 2012. *MMWR. Morbidity and mortality weekly report*, *66*(6), 153–158. https://doi.org/10.15585/mmwr.mm6606a1

Kozhimannil, K. B., Trinacty, C. M., Busch, A. B., Huskamp, H. A., & Adams, A. S. (2011). Racial and ethnic disparities in postpartum depression care among low-income women. *Psychiatric services (Washington, D.C.)*, *62*(6), 619–625. https://doi.org/10.1176/ps.62.6.pss6206_0619

Landry, S. H., & Smith, K. E. (1996). Playing and learning strategies–I. Houston, TX: University of Texas-Houston Health Science Center.

Luca, D. L., Margiotta, C., Staatz, C., Garlow, E., Christensen, A., & Zivin, K. (2020). Financial Toll of Untreated Perinatal Mood and Anxiety Disorders Among 2017 Births in the United States. *American journal of public health*, *110*(6), 888–896. https://doi.org/10.2105/AJPH.2020.305619

Mason, A., & Meyers, M. (2001). Living with Martha Stewart media: Chosen domesticity in the experience of fans. *Journal of Communication*, 51(4), 801-823. https://doi.org/10.1111/j.1460-2466.2001.tb02907.x

Maternal, Infant, and Early Childhood Home Visiting Technical Assistance Coordinating Center (2015). *MIECHV Issue Brief on Family Enrollment and Engagement.* Rockville, MD: Health Resources and Services Administration.

McHugh M. L. (2012). Interrater reliability: the kappa statistic. Biochemia medica, 22(3), 276–282.

Mughal, M. K., Giallo, R., Arnold, P. D., Kehler, H., Bright, K., Benzies, K., Wajid, A., & Kingston, D. (2019). Trajectories of maternal distress and risk of child developmental delays: Findings from the All Our Families (AOF) pregnancy cohort. *Journal of affective disorders, 248*, 1–12. https://doi.org/10.1016/j.jad.2018.12.132

Niel, M. S. V., & Payne, J. L. (2020). Perinatal depression: A review. *Cleveland Clinic Journal of Medicine*, 87(5), 273-277.https://doi.org/10.3949/ccjm.87a.19054

Njoroge, W., White, L. K., Waller, R., Forkpa, M., Himes, M. M., Morgan, K., Seidlitz, J., Chaiyachati, B. H., Barzilay, R., Kornfield, S. L., Parish-Morris, J., Rodriguez, Y., Riis, V., Burris, H. H., Elovitz, M. A., & Gur, R. E. (2022). Association of COVID-19 and Endemic Systemic Racism With Postpartum Anxiety and Depression Among Black Birthing Individuals. *JAMA psychiatry*, *79*(6), 600–609. https://doi.org/10.1001/jamapsychiatry.2022.0597

Noursi, S., Saluja, B., & Richey, L. (2021). Using the Ecological Systems Theory to Understand Black/White Disparities in Maternal Morbidity and Mortality in the United States. *Journal of racial and ethnic health disparities*, *8*(3), 661–669. https://doi.org/10.1007/s40615-020-00825-4

Pao, C., Guintivano, J., Santos, H., & Meltzer-Brody, S. (2019). Postpartum depression and social support in a racially and ethnically diverse population of women. *Archives of women's mental health*, *22*(1), 105–114. https://doi.org/10.1007/s00737-018-0882-6

Salk, R. H., Hyde, J. S., & Abramson, L. Y. (2017). Gender differences in depression in representative national samples: Meta-analyses of diagnoses and symptoms. Psychological bulletin, 143(8), 783–822. https://doi.org/10.1037/bul0000102

Sidebottom, A., Vacquier, M., LaRusso, E., Erickson, D., & Hardeman, R. (2021). Perinatal depression screening practices in a large health system: identifying current state and assessing opportunities to provide more equitable care. Archives of women's mental health, 24(1), 133–144. https://doi.org/10.1007/s00737-020-01035-x

Sheeber, L. B., Seeley, J. R., Feil, E. G., Davis, B., Sorensen, E., Kosty, D. B., & Lewinsohn, P. M. (2012). Development and pilot evaluation of an Internet-facilitated cognitive-behavioral intervention for maternal depression. *Journal of consulting and clinical psychology*, *80*(5), 739–749. https://doi.org/10.1037/a0028820

Sheeber, L. B., Feil, E. G., Seeley, J. R., Leve, C., Gau, J. M., Davis, B., Sorensen, E., & Allan, S. (2017). Mom-net: Evaluation of an internet-facilitated cognitive behavioral intervention for low-income depressed mothers. *Journal of consulting and clinical psychology*, *85*(4), 355–366. https://doi.org/10.1037/ccp0000175

Slomian, J., Honvo, G., Emonts, P., Reginster, J. Y., & Bruyère, O. (2019). Consequences of maternal postpartum depression: A systematic review of maternal and infant outcomes. *Women's health (London, England)*, *15*, 1745506519844044. https://doi.org/10.1177/1745506519844044

Strauss, A., & Corbin, J. (1994). Grounded theory methodology: An overview.

Szegda, K., Markenson, G., Bertone-Johnson, E. R., & Chasan-Taber, L. (2014). Depression during pregnancy: a risk factor for adverse neonatal outcomes? A critical review of the literature. The journal of maternal-fetal & neonatal medicine: the official journal of the European Association of Perinatal Medicine, the Federation of Asia and Oceania

Perinatal Societies, the International Society of Perinatal Obstetricians, 27(9), 960–967. https://doi.org/10.3109/14767058.2013.845157

Chun Tie, Y., Birks, M., & Francis, K. (2019). Grounded theory research: A design framework for novice researchers. SAGE open medicine, 7, 2050312118822927. https://doi.org/10.1177/2050312118822927

US Preventive Services Task Force (USPSTF), Curry, S. J., Krist, A. H., Owens, D. K., Barry, M. J., Caughey, A. B., Davidson, K. W., Doubeni, C. A., Epling, J. W., Jr, Grossman, D. C., Kemper, A. R., Kubik, M., Landefeld, C. S., Mangione, C. M., Silverstein, M., Simon, M. A., Tseng, C. W., & Wong, J. B. (2019). Interventions to Prevent Perinatal Depression: US Preventive Services Task Force Recommendation Statement. JAMA, 321(6), 580–587. https://doi.org/10.1001/jama.2019.0007

Appendix A

Mom and Baby Net Interview Guide

1. Why did you choose to participate in Mom and Baby Net?
2. What motivated you to complete the Mom and Baby Net program?
3. What features of Mom and Baby Net did you enjoy the most?
4. What features of Mom and Baby Net did you not enjoy?
5. If you could change anything about the program, what would it be?
6. Sometimes it's a real struggle for moms to stick with the program when they are feeling down.
    a. What specific program supports kept you going when you might have felt like it was hard to keep going?
    b. What specific supports do you think are most helpful to keep other moms going if they are having a hard time continuing?
7. These next few questions I am going to ask your thoughts about adding a social component into the Mom and Baby Net program:
    a. Where do you typically get social support from?
    b. What are your thoughts about adding a social component to the Mom and Baby Net program?
    c. What type of support most interests you – a discussion forum where moms can share information and respond to post made by other moms; a support group where participants could have a group call with other participants; a closed GroupMe with other study participants that would be moderated by a research staff member; a closed

Facebook group? Are there any other forms of support you can think of that you and other moms would find helpful?

   d. Considering how hectic new mothers' lives are, how often would you be interested in participating a social group?
   e. How long would you want each social group to last?
   f. When would you recommend starting the social group after mothers' give birth?
   g. How long would you recommend continuing the group?
   h. How many other mothers is ideal for a social group?

8. How was the workload during the program? Did you have enough time each week to complete program activities?
9. What were your top 3 favorite sessions- that helped you the most, how?
10. What were your least favorite sessions, why?
11. Regarding number of sessions, they were:
    a. Just the right amount
    b. Too many?
    c. Too few?
12. What is the ideal number of sessions that you think would make the Mom & Baby net work best for mothers?
13. Did you talk with your friends/family about the Mom & Baby Net program?
14. If so, what did you want them to know or tell them about the Mom and Baby Net program?
15. What would you tell a new mom, struggling with depression, about the program?
    a. How it could benefit them personally?
    b. How it could benefit them as a parent?

c. The benefit for their baby

Appendix B

Codebook

Research Question 1A: What themes emerge from mothers' views of their own motivation to initiate participation in a virtual coaching intervention program?

Themes

I. Desire to learn to be and be the best parent I can be.
   a. Being a first-time mother
   b. Being a mother with other children
   c. Premature Infant
   d. Desire to observe milestones.

II. Mental Health Concerns

III. Desire for support

IV. Referred to the Program.

Definitions and Examples

I. Desire to learn and be the best parent I can be.

Definition: Mentions of a desire to learn to be and to be a better parent/best parent they can be

Examples

- Well, I was referred to by a friend and she told me how it helped her as a mom to do things differently as a mother and how to I guess how to be a better parent. So, I figure that I wanted to learn. I also wanted to learn more about gentle parenting. So, what she was saying that the program was about it kind of aligned with what I wanted to start learning. So, that's why I thought that it was a good idea for me.

- I feel like it would open my eyes for different things as in being a mother, what I can give more to being a mother.

a. Being a first-time mother

Definition: Mentions of being a first-time mother.

Examples

- Well, I was a first-time mother.
- So, I chose to participate in the Mom and Baby Net program because I was a new mother. Um, I wouldn't say I was lost but you know you can never know too much.

b. Being a mother with older children

Definition: Mentions of being a mother with older children.

Examples

- Well because I am a mother of five so I'm always looking of ways to like you know and it especially at that moment it was just a different way of coping with you know a new baby.
- I think just the way the flyer was worded um it kind of caught my eye because I know I wanted this pregnancy to be different. I didn't want to have to go through a lot of the things that I went through with my previous pregnancies um and it just it appealed to me, so I called and got connected with coach Alex and everything went up from there.

c. Premature/Special Needs Infant

Definition: Mentions of having a premature or specials needs infant.

Examples

- I had just had a premature baby.

- He was a 31 weeker. So, it was kind of like could be delayed or it could not be but um so there was a chance that it could.

d. Desire to observe milestones.

Definition: Mentions of a desire to observe or track infant milestones.

Examples

- My son was also behind in a lot of milestones. So, I thought it would help me as well to see the progress from beginning to end.
- So, in the stuff that we were going over like different developmental skills, I wanted to make sure my daughter was um...meeting milestones and I felt like this would be a good program.

II. Mental Health Concerns

Definition: Mentions of maternal mental health concerns.

Examples

- So, I didn't want to get that postpartum depression of having a little infant and want to just go crazy.
- I felt like honestly, if I'm being honest I felt like I was going to go crazy transitioning from having a newborn to another newborn was just a lot and I was just tired, overwhelmed, frustrated, irritated all the bad stuff I was going through it at that time.

III. Desire for support

Definition: Mentions of a desire for support.

Examples

- Um at the time I think I just had my son and any support that I could get I was open to.
- I was trying to find some kind of support.

- I chose to participate um because at that moment even though this is my second child I kind of wanted to join a group or have someone to talk to about situations with dealing with a child.

IV. Being referred to the program

Definition: Mentions of being referred to the program

Examples

- It was another mom from the birth center who actually referred me to the Mom and Baby net program.
- Well, I was referred to by a friend and she told me how it helped her as a mom to do things differently as a mother and how to I guess how to be a better parent.

**Often more than one theme will appear in the same response. Please be sure to apply all relevant codes.*

Examples

- I think it was more like when I had the baby, I was pretty much down all the time, and I was trying to find some kind of support. Because like I was going to counseling but then my Medicaid had stopped and so I couldn't afford to have counseling. So, I guess I needed some type of support from somewhere and then the hospital told me about you guys and that's how I signed up and got involved in it.
    - Here mental health concerns and desire for support would be coded.

Please be sure to apply main themes and subthemes when necessary.

Example

- Well, I was a first-time mother. So, in the stuff that we were going over like different developmental skills, I wanted to make sure my daughter was um...meeting milestones and I felt like this would be a good program.
    - Here desire to learn and be the best parent I can be (main theme) and subthemes being a first-time mother and desire to observe milestones would be coded.

There may also be more than one main theme and a subtheme in one response.

Example

- Um, I think I saw the flyer at maybe like the WIC office or the doctor's office, and Cody would have been my third child and I know with my first two pregnancies I experienced a lot of postpartum depression, and I think just the way the flyer was worded um it kind of caught my eye because I know I wanted this pregnancy to be different. I didn't want to have to go through a lot of the things that I went through with my previous pregnancies um and it just it appealed to me, so I called and got connected with coach Alex and everything went up from there.
    - Here desire to learn and be the best parent I can be (main theme), being a mother with other children (subtheme), and mental health concerns would be coded.

Research Question 1B: What themes emerge from mothers' views of their own motivation to continue engagement in a virtual coaching intervention program?

Themes

I. Desire to complete for infant's wellbeing.

II. Coach Support

    a. Emotional support

III. Program Support Features

a. App self-learning content (Related to improving mood or supporting infant development)
b. Creating videos with my baby
c. Coach calls or check ins

IV. Personal desire to complete the program (Desire for mastery)

Definitions and Examples

I. Desire to complete for infant's wellbeing.

Definition: Mentions of the mother's infant as a reason to continue to engage in the program.

Examples

- My baby was really interested, so I kept going doing the activities in the program.
- I wanted to finish the mom and baby network program because it was a new experience and I wanted to experience those things with my baby girl.

II. Coach Support

Definition: Mentions of coach support as a reason to continue to engage in the program.

a. Emotional support

Definition: Mentions of emotional support from program coach (encouragement to keep going).

Examples

- I think that Alex really that was the biggest thing for me having someone to vent too and just cried to about everything 'cause I'm like I felt like I didn't have anyone to talk to. So, she was that shoulder that I needed to cry on. lean on. So, that Alex was definitely the biggest support for me.

- Um and just really having someone to talk to, knowing that I had someone to talk to on a consistent basis, knowing that okay they have a whole study about it, so other people are going through this it's not just me. That's kind of what just helped me keep going.
- So, she was one of the reasons that I completed it because I could reach out to her when I wasn't...when I wanted to give up.

I. Program Support Features

Definition: Mentions of program content or activities (e.g., creating videos with baby, binder, coach calls/check-ins, video feedback, app, questionnaires)

a. App-Self Learning Content (related to improving mood and supporting baby development)

Definition: Mentions of app content relating to improving mood and/or support baby development.

Example

- There was an app on the phone that you would do questions on and I liked that.
- I think there was a slide I think there was a slide on it it says great job you're finished or something along that line.
- I would say definitely the app that helped me out a lot. Because I could like.. like the activities a 100% trying to find other things to take my mind off of things that kept me down. Like to be in control of your mood and like obviously sometimes when you're down you don't really wanna be messing around with the baby. The baby is crying and you're feeling stressed out and trying to find a way to manage that was good... going on there anytime you want it and like the list of activities and when you're trying to figure out like what am I going to do kind of thing it gives you ideas.

b. Creating videos with my baby

Definition: Mentions of video creation with baby.

Example

- To actually make the videos with him and to present them to the coach to let her see my blessing.

c. Coach calls or check ins

Definition: Mentions of coach calls or weekly check ins with coach.

Example

- Being able to talk to someone and knowing that like you know I was scheduled to speak to someone about you know specifically about the app but just being able to talk to someone period.
- Watching myself you know when when Coach Alex called back and we did the feedback like being able to see myself and see my son respond to me in a particular way, that brought a sense of accomplishment.

II. Personal desire to complete the program (Desire for mastery)

Definition: Mentions of a personal desire to complete the program or desire for mastery.

Example

- I'm a person who likes to feel like I've accomplished something, and I just like to check things off my list. I'm just one of those like you know what let me...I don't like to start and not finish something.
- I'm not a person that can just start things and want to quit. I'm a person that wants to see things through and that is one of the reasons why I completed it.
- With everything I had going on I was just determined to try to finish the program.

**Often more than one theme will appear in the same response. Please be sure to apply all relevant codes and subthemes.*

Example

- My baby. Like like as I was able to see him like notice like with the videos you know that I had to keep recording like after a while I notice I'm like wow like you know I get to watch him... obviously, I get to watch him grow 'cause I'm his mom...but it was like you know on the videos I can see him grow and grow and grow and it was like I see him progressing more. I see him becoming his own person if that's the right phrase I would say.
    - Here program support features (main theme) and desire to complete for infant's wellbeing would be coded.

Research Question 2A: What themes emerge from mothers' views of what would motivate other mothers to initiate participation in a virtual coaching intervention program?

Themes

I. Learning positive ways to interact with baby (positive parenting practices)
    a. Recognizing infant milestones

II. Learning to recognize depression symptoms and improve mood.

III. Improving Infant Wellbeing

IV. Coach Support
    a. Emotional Support
    b. Informational Support

V. Program Support Features

a. App Self-Learning Content (related to improving mood or supporting infant development)

b. Coach calls or check ins

c. Creating videos with my baby

Definitions and Examples

I. Learning positive ways to interact with baby (positive parenting practices)

Definition: Mentions of learning positive ways to interact with baby by engaging in positive parenting practices (parent-focused).

Example

- I think that you can find yourself not interacting with your baby as much positively when you are going through a lot of stress. Um so it kind of helped to keep the focus on um each week which you spend the time with your baby in a positive setting because everything when you feeling depressed kind of becomes a job.
- I think as a parent you learn a lot like especially as a first time parent you learn like different cues and things to look for with your child.

a. Recognizing infant milestones

Definition: Mentions of the ability to recognize infant milestones or observe development.

Example

- Because we don't have an instruction manual when they are born, this gives you almost like a timeline like again you don't have to hit it at those specific times but kind of an idea of where there will be growing and developing and changing and all that kind of stuff.

- So, I feel like it also can help you see things that you didn't see before or that you may not have noticed, and it also can help you build things that are working for your kid, and you can um like work off of that strong thing that that the child is doing. I noticed that physically walking he was fine like he walked on time but at the motor skills he couldn't hold cups. He couldn't do the pincher grasp. I didn't really notice until she asked me about the pincher grasp.
- If I didn’t have to explain to like my coach what was going on I probably wouldn't have seen some signs that were happening, and I'm like little things that you don't really think about until later like he wasn't clapping, he he doesn't look at me when I'm talking to him, he doesn't respond to his name, like little things or just like okay like he's just just the baby like or you'll talk to people like oh he's just six months old like he'll do it eventually and you look and he's 12 months and he's still not doing it.

II. Learning to recognize depression symptoms and improve mood.

Definition: Mentions of learning to recognize depression symptoms and improve mood.

Example

- I think sometimes when you're in the midst of a depression it's very hard to see what you can do to get out and I think that the program really helped you like hey this is just a downward spiral and these are the things that you do to redirect your thoughts and you know what I mean, and when you're in the middle of it it's just very difficult to think of that.
- I was actually depressed. I didn't realize it. I was gaining weight. I was not as active as I used to be. It just made me realize that I'm maybe just because I'm going through the

repetitive motions I need to pay more attention to like, I really was depressed, even though I wasn't crying or all over the floor and like doing some extra stuff.

III. Improve Infant's Wellbeing

Definition: Mentions of the program improving infant's wellbeing (baby-focused).

Example

- This is important for your child just learning basic, just hearing your voice, just hearing words, just seeing books, just being around it, like he still carries that now and I decided to homeschool him.
- It will and it will help you learn a lot about your child to be honest with you because it helped my baby to read. It helped them to read.
- It can definitely help your child mentally as well as physically grow and develop some of these like the sensory like I've been saying sensory a lot because that is one thing that really helped my baby is learning sensory behavior and that's all I can really say on that one.

IV. Coach Support

Definition: Mentions of coach support benefiting other mothers.

a. Emotional Support

Example

- I would tell them that they always had their coach for support and if anything were to.. anything ever got too much for them to always reach out to their coach and try to go back through the sessions that could possibly help.

- I would tell her that the coaches are amazing. They definitely listen to you and not just only like for their job's sake, but they definitely sympathize what you're what you got going on.
- I would tell them to listen to the coaches. Take heed of what the coaches are saying because like the notes, the advice they were giving, it actually helps.
- Because you're not alone in this and there is always someone out there to talk to and resources out there, because a lot of people don't know or they are afraid to talk to other people about their problems and sometimes when you have a coach or you're in a program you feel more comfortable with them, and they can kind of give you more insight or advice about it.

b. Informational Support

Definition: Mentions of information support from coach (Sharing resources/referrals).

Example

- At first I was like okay we'll do this once a week and then she helped me find some other resources. We looked into Babies Can't Wait and now she has physical, she got OT and she got speech.
- I would tell her it's very helpful because um even though I think my coach knew I didn’t feel like talking but um she even gave me resources to reach out to and stuff like that to help in case like I wanted to talk to somebody else or in case, 'cause she would ask me if I needed help with anything or whatever and so if I'm not mistaken at the time, I was trying to find a job.

V. Program Support Features

Definition: Mentions of program content or activities (e.g., creating videos with baby, binder, coach calls/check-ins, video feedback, app, questionnaires)

a. Creating a video with my baby

Definition: Mentions of video creation with baby.

Example

- So, just having again just doing the videos and you look back and you see your baby smiling and knowing that your baby is taken care of.

b. Coach calls/Check-ins

Definition: Mentions of coach calls or weekly check-ins.

Example

- I would probably tell them that having that coach check in once a week is hugely beneficial.

c. App Self-Learning Content (related to improving mood and supporting baby development)

Definition: Mentions of app content relating to improving mood and/or support baby development.

Example

- Basically, all with the 14 sessions, I felt like it's like activities with your child, things y'all tell us to do you learn how to cope with your child better because some people don't have a relationship with their parents.
- Try to go back through the sessions that could possibly help.

- Just help them to kind of like I guess like deal with it you know. Deal with it 'cause you know it was a session that was just telling you like if this triggers you what can you do to like spiral to make it go down. So, I would say that those resources..

** Often more than one theme will appear in the same response. Please be sure to apply all relevant codes.*

- Oh, absolutely like just like having better parenting skills and having the interaction with your baby not letting the depression take over you. There's ways there's techniques that you can use to you know interact with your baby more, to help your mood and you know interact with your baby and help your parenting skills like a bunch.
    - Here learning positive ways to interact with baby (positive parent practices) and learning to recognize depression symptoms and improve mood would be coded.
- So, I was so floored understanding when you're healthy and okay and you can understand your mood, then you will be able to understand the baby's signals and what they're you know what they're trying to get across to you.
    - Here learning positive ways to interact with baby (positive parent practices) and learning to recognize depression symptoms and improve mood would be coded.

Research Question 2B: What themes emerge from mothers' views of what would motivate other mothers to continue engagement in a virtual coaching intervention program?

Themes

I. Coach Support
    a. Emotional Support

II. Desire to Engage with other mothers.
    a. Mothers who have completed the program.

III. Program Support Features

a. App self-learning content (improving mood or supporting infant development)

Definitions and Examples

I. Coach Support

a. Emotional Support

Definition: Mentions of emotional support from program coach (encouragement to keep going).

Example

- Being able to reach out to you know guidance in any given moment because you know your coaches are always...they always tell you they're always there and being able to reach out to them at any given moment if you have any type of issues going on they are always there and readily available.
- Um I think it's good when you like, how I was able to text her at any time or call. Yeah, being able to you know speak to her when I was feeling some type of way or just sending a text and just tell her like I'm not having a good day. Just to be able to communicate.
- Uh just uh call in and calling and speak with your coach. You know we all need that motivation and that encouragement pretty much that's what you'll probably you know most likely need someone to like push you, especially if you're feeling down you know.
- I think the support of ...who was it ...your advisor I think the support of who you spoke with is very big and that was the most helpful for me because she was always so supportive.

II. Desire to engage with other mothers.

Definition: Mentions of a desire to engage with other mothers in the program.

Example

- Definitely like that community, that community of moms, definitely. I think if the overall goal of the program is to assist with um postpartum depression or whether that's preventing it or helping people through it then it really having that community is going to be important because a lot of people won't just reach out to a therapist or counselor, or they may not have the money to reach out to therapist or counselor.

III. Program Support Features

Definition: Mentions of program content or activities (e.g., creating videos with baby, binder, coach calls/check-ins, video feedback, app, questionnaires).

a. App Self-Learning Content (related to improving mood and supporting baby development)

Definition: Mentions of app content relating to improving mood and/or support baby development.

Example

- I really think again that at the end where it would always ask like the 5 different questions of where you are at mentally basically, like that helped a lot. I could check in to be like was I struggling this week because you do.
- So, I know that like in the program I forgot what chapter it was but it was like a support chapter and it's just like you know when you are feeling depressed you have to like you know find you know have like a good support system.

* *Often more than one theme will appear in the same response. Please be sure to apply all relevant codes.*

Example

- The questionnaire still. I think also having easy access to talk to your I don't wanna say coordinator 'cause it might not be the right word but being able to yeah yeah like my coach and like being able to reach out and easily accessible is also helpful.
    - Here program support features (main theme), app self-learning content (subtheme), and coach support would be coded.

Research Question 3: What themes emerge from the mothers' views of program experiences, which they view as meaningful to communicate to their family and friends?

Themes

I. Learning to recognize depression symptoms and improve mood.

II. Learning positive ways to interact with baby (positive parenting practices)

    a. Recognizing milestones

III. Coach Support

    a. Emotional Support

    b. Informational Support

IV. Program Support Features

    a. Creating videos with my baby

    b. Incentive (free phone)

Definition and examples

I. Learning to recognize depression symptoms and improve mood.

Definition: Mentions of learning to recognize depression symptoms and improve mood.

Examples

- I was telling her like when because she has seven kids and so she was always tired, and she was stressed so I was telling her like when I am feeling that way and I told the coach about it. She was like trying to do certain things, settle the kids down, have time to yourself because if you don't have time to yourself you will always be tired, and she said the stuff that I was telling her was actually helping her.
- I just told them it's an awesome little program going on and it helps you with your children and depression when you're going through things, and you need any help. She was having some issues so I recommended her to this program so it can help her out with her depression.
- I'm like I know it actually helped me a bit 'cause like I said I didn't even want to talk to nobody. I was mad, depressed all of that.
- I believe one of my friends actually signed up for it if I'm not mistaken and I think she did the program and I really told them about how like it's helpful for mothers that are going through like postpartum depression or just like dealing with things mentally and how great the group really just I mean the program really helped me and just letting them know like that they're there for you you know.

II. Learning positive ways to interact with baby (positive parenting practices)

Definition: Mentions of learning positive ways to interact with baby (positive parenting practices).

Examples

- Understand my child better and just get a a better healthier outlook on what parenting is and what parenting is not.

    a. Recognizing Milestones

Definition: Mentions of recognizing milestones (an example of a positive parenting practice).

Examples

- You know being 36 years old, this is about a year ago or two years ago, but they didn't have like they didn't learn about the milestones when I was growing up. So, her being along with me with Jonathan was really cool for her too. I think she enjoyed that also. I would be like Jonathan hit that milestone and she was like yay. Of course, she is my biggest supporter in everything. She was like that is awesome.

III. Coach Support

a. Emotional support

Definition: Mentions of emotional support from program coach (encouragement to keep going).

Example

- I feel like I had someone to kind of talk to and kind of taught me new ways to mother if that makes sense or not.

IV. Program Support Features

Definition: Mentions of program content or activities (e.g., creating videos with baby, binder, coach calls/check-ins, video feedback, app, questionnaires).

a. App Self-Learning Content (related to improving mood and supporting baby development)

Definition: Mentions of app content relating to improving mood and/or support baby development.

Example

- I talked to them about how the program was helping me and to grow with baby and um to use the lessons that I learned in the everyday life to continue to help me, especially the pleasant activities and using sensitivity behaviors to deal with if they have the negative like if they have a negative response or if they have a positive response to praise them in that moment and also let them know that mommy is enjoying that moment with them and showing them through smiling and hugs and kisses.

* *Often more than one theme will appear in the same response. Please be sure to apply all relevant codes.*

- I believe one of my friends actually signed up for it if I'm not mistaken and I think she did the program and I really told them about how like it's helpful for mothers that are going through like postpartum depression or just like dealing with things mentally and how great the group really just I mean the program really helped me and just letting them know like that they're there for you you know.
    - Here coach support (main theme), emotional support (subtheme), and learning to recognize depression symptoms and improve mood would be coded.

Appendix C

NVivo Word Query Reports

Research Question 1 (A) DDAS

Word	Length	Count	Weighted Percentage	Similar Words
also	4	4	0.99%	also
baby	4	8	1.98%	baby
cause	5	5	1.23%	'cause, cause
different	9	4	0.99%	different
end	3	3	0.74%	end, ended
get	3	5	1.23%	get, getting
good	4	5	1.23%	good
help	4	6	1.48%	help, helped, helpful
interested	10	3	0.74%	interested, interesting, interests
just	4	13	3.21%	just

kind	4	5	1.23%	kind
know	4	13	3.21%	know
like	4	29	7.16%	like
looking	7	3	0.74%	looked, looking
lot	3	4	0.99%	lot
mom	3	7	1.73%	mom, moms
mother	6	5	1.23%	mother
participate	11	3	0.74%	participate, participated
people	6	6	1.48%	people
program	7	7	1.73%	program
see	3	4	0.99%	see
something	9	6	1.48%	something
son	3	4	0.99%	son
stuff	5	5	1.23%	stuff

talk	4	7	1.73%	talk, talked, talking
things	6	5	1.23%	thing, things
thought	7	6	1.48%	thought
time	4	4	0.99%	time
wanted	6	3	0.74%	want, wanted
well	4	5	1.23%	well

Research Question 1 (A) MBN

Word	Length	Count	Weighted Percentage	Similar Words
baby	4	12	2.23%	baby
child	5	8	1.49%	child
chose	5	4	0.74%	chose
coach	5	5	0.93%	coach, coached, coaching
depression	10	5	0.93%	depressed, depression
different	9	7	1.30%	different, differently
felt	4	6	1.12%	felt
help	4	13	2.42%	help, helped
just	4	23	4.28%	just
kind	4	7	1.30%	kind
know	4	15	2.79%	know

learn	5	4	0.74%	learn, learning
like	4	26	4.84%	like
looking	7	4	0.74%	look, looked, looking
lot	3	9	1.68%	lot
mom	3	12	2.23%	mom, moms
needed	6	4	0.74%	need, needed
postpartum	10	5	0.93%	postpartum
program	7	8	1.49%	program
signed	6	4	0.74%	signed
son	3	5	0.93%	son
support	7	6	1.12%	support
things	6	6	1.12%	things
think	5	5	0.93%	think
time	4	8	1.49%	time
told	4	4	0.74%	told

trying	6	4	0.74%	trying
wanted	6	14	2.61%	want, wanted, wanting
way	3	5	0.93%	way, ways
well	4	6	1.12%	well

Research Question 1 (B) DDAS

Word	Length	Count	Weighted Percentage	Similar Words
'cause	6	6	0.67%	'cause
baby	4	12	1.33%	baby
brooke	6	6	0.67%	brooke
coach	5	14	1.55%	coach
different	9	7	0.78%	different
feel	4	10	1.11%	feel, feeling
going	5	6	0.67%	going
helpful	7	17	1.89%	help, helped, helpful, helping, helps
just	4	30	3.33%	just
kept	4	7	0.78%	kept
kind	4	14	1.55%	kind, kinds
know	4	28	3.11%	know, knowing

like	4	70	7.77%	like, liked
little	6	9	1.00%	little
made	4	7	0.78%	made
mom	3	8	0.89%	mom
okay	4	8	0.89%	okay
phone	5	6	0.67%	phone
program	7	9	1.00%	program
really	6	22	2.44%	really
see	3	14	1.55%	see, seeing
something	9	6	0.67%	something
things	6	8	0.89%	thing, things
think	5	14	1.55%	think
times	5	13	1.44%	time, times
trach	5	6	0.67%	trach
videos	6	14	1.55%	video, videos

want	4	13	1.44%	want, wanted, wanting
working	7	7	0.78%	work, worked, working
yeah	4	7	0.78%	yeah

Research Question 1 (B) MBN

Word	Length	Count	Weighted Percentage	Similar Words
activities	10	8	0.66%	activities, activity
actually	8	10	0.83%	actually
alex	4	17	1.41%	alex
baby	4	9	0.75%	babies, baby
bit	3	9	0.75%	bit
coach	5	11	0.91%	coach, coaches
day	3	8	0.66%	day
even	4	9	0.75%	even
every	5	8	0.66%	every
feel	4	17	1.41%	feel, feeling, feelings
get	3	9	0.75%	get, getting
going	5	17	1.41%	going

helped	6	26	2.15%	help, helped, helpful, helping, helps
just	4	43	3.56%	just
know	4	53	4.39%	know, knowing
like	4	82	6.79%	like, liked, likes
look	4	9	0.75%	look, looked, looking
lot	3	9	0.75%	lot
motivated	9	9	0.75%	motivated, motivating, motivation
okay	4	11	0.91%	okay
really	6	15	1.24%	really
see	3	11	0.91%	see, seeing
someone	7	11	0.91%	someone

started	7	10	0.83%	start, started, starting
talk	4	18	1.49%	talk, talked, talking
things	6	16	1.32%	thing, things
think	5	10	0.83%	think, thinking
try	3	9	0.75%	try, trying
want	4	22	1.82%	want, wanted, wanting, wants
way	3	8	0.66%	way, ways

Research Question 2 (A) DDAS

Word	Length	Count	Weighted Percentage	Similar Words
baby	4	64	2.94%	babies, baby
child	5	22	1.01%	child
coach	5	18	0.83%	coach, coaches
feel	4	28	1.29%	feel, feeling, feelings
get	3	24	1.10%	get, gets, getting
going	5	17	0.78%	going
helps	5	47	2.16%	help, helped, helpful, helps
just	4	56	2.57%	just
kids	4	15	0.69%	kid, kids
kind	4	19	0.87%	kind
know	4	69	3.17%	know, knowing

like	4	156	7.17%	like, likes
little	6	17	0.78%	little
look	4	17	0.78%	look, looked, looking
lot	3	14	0.64%	lot
make	4	14	0.64%	make, makes, making
okay	4	37	1.70%	okay
program	7	23	1.06%	program
really	6	16	0.74%	really
see	3	16	0.74%	see, seeing, sees
something	9	14	0.64%	something
speaking	8	18	0.83%	speaking
talk	4	19	0.87%	talk, talked, talking
tell	4	16	0.74%	tell

things	6	30	1.38%	thing, things
think	5	33	1.52%	think, thinking
time	4	23	1.06%	time, times
videos	6	19	0.87%	video, videos
want	4	17	0.78%	want, wanted, wanting
yeah	4	16	0.74%	yeah

Research Question 2 (A) MBN

Word	Length	Count	Weighted Percentage	Similar Words
'cause	6	17	0.64%	'cause, cause, causes
baby	4	72	2.69%	babies, baby
better	6	21	0.78%	better
child	5	26	0.97%	child
definitely	10	30	1.12%	definitely
depression	10	26	0.97%	depressed, depressing, depression
differently	11	22	0.82%	difference, different, differently
feel	4	28	1.05%	feel, feeling
get	3	26	0.97%	get, gets, getting

going	5	24	0.90%	going
help	4	92	3.44%	help, helped, helpful, helping, helps
just	4	95	3.55%	just
know	4	129	4.82%	know, knowing, knows
learning	8	35	1.31%	learn, learned, learning
like	4	145	5.42%	like, liking
mean	4	23	0.86%	mean
moms	4	24	0.90%	mom, moms
okay	4	16	0.60%	okay
one	3	22	0.82%	one
parent	6	29	1.08%	parent, parenting, parents

program	7	25	0.93%	program
read	4	17	0.64%	read, reading
really	6	30	1.12%	really
tell	4	27	1.01%	tell, telling
things	6	28	1.05%	thing, things
think	5	29	1.08%	think, thinking
timing	6	17	0.64%	time, timing
try	3	24	0.90%	try, trying
understand	10	16	0.60%	understand, understanding
ways	4	25	0.93%	way, ways

Research Question 2 (B) DDAS

Word	Length	Count	Weighted Percentage	Similar Words
able	4	7	1.17%	able
also	4	7	1.17%	also
always	6	6	1.00%	always
cause	5	6	1.00%	'cause, cause
coach	5	10	1.67%	coach, coaches
end	3	4	0.67%	end, ended
get	3	11	1.84%	get, getting
going	5	9	1.50%	going
helpful	7	12	2.00%	help, helped, helpful, helping
just	4	13	2.17%	just
keep	4	7	1.17%	keep
know	4	17	2.84%	know
like	4	42	7.01%	like

lot	3	7	1.17%	lot
moms	4	6	1.00%	mom, moms
need	4	8	1.34%	need, needed
okay	4	5	0.83%	okay
phone	5	6	1.00%	phone, phones
program	7	11	1.84%	program
reach	5	6	1.00%	reach
really	6	10	1.67%	really
something	9	11	1.84%	something
stuff	5	8	1.34%	stuff
support	7	5	0.83%	support, supportive
thing	5	6	1.00%	thing, things
think	5	8	1.34%	think
time	4	5	0.83%	time, times
want	4	5	0.83%	want

yeah	4	6	1.00%	yeah
zone	4	5	0.83%	zone

Research Question 2 (B) MBN

Word	Length	Count	Weighted Percentage	Similar Words
able	4	7	0.71%	able
always	6	11	1.12%	always
baby	4	11	1.12%	babies, baby
call	4	8	0.81%	call, calling, calls
coach	5	12	1.22%	coach, coaches
definitely	10	10	1.01%	definitely
different	9	13	1.32%	different
feel	4	13	1.32%	feel, feeling, feelings
get	3	7	0.71%	get, getting
help	4	18	1.83%	help, helped, helpful, helping
just	4	46	4.67%	just

kind	4	7	0.71%	kind
know	4	59	5.98%	know
like	4	69	7.00%	like, likely
lot	3	8	0.81%	lot
make	4	7	0.71%	make, makes, making
maybe	5	8	0.81%	maybe
moms	4	20	2.03%	mom, moms
need	4	9	0.91%	need, needed, needs
person	6	9	0.91%	person, personal, personally
reach	5	7	0.71%	reach, reaching
really	6	20	2.03%	really
somebody	8	7	0.71%	somebody
stuff	5	8	0.81%	stuff

support	7	19	1.93%	support, supportive
talk	4	12	1.22%	talk, talks
thing	5	9	0.91%	thing, things
think	5	14	1.42%	think
time	4	15	1.52%	time, times
yeah	4	9	0.91%	yeah

Research Question 3 DDAS

Word	Length	Count	Weighted Percentage	Similar Words
baby	4	9	1.61%	baby
coach	5	4	0.71%	coach
different	9	4	0.71%	different, differently
even	4	4	0.71%	even
excited	7	7	1.25%	excited, exciting
first	5	4	0.71%	first
friend	6	6	1.07%	friend, friends
get	3	5	0.89%	get
going	5	6	1.07%	going
good	4	5	0.89%	good
got	3	6	1.07%	got

help	4	11	1.96%	help, helped, helpful, helping, helps
iphone	6	4	0.71%	iphone, iphones
just	4	17	3.04%	just
know	4	20	3.57%	know
like	4	48	8.57%	like
lot	3	7	1.25%	lot
moms	4	8	1.43%	mom, moms
one	3	6	1.07%	one
probably	8	5	0.89%	probably
program	7	11	1.96%	program
stuff	5	7	1.25%	stuff
support	7	5	0.89%	support, supporter
talk	4	16	2.86%	talk, talked, talking

telling	7	10	1.79%	tell, telling
think	5	8	1.43%	think
time	4	9	1.61%	time
told	4	6	1.07%	told
videos	6	5	0.89%	videos
want	4	8	1.43%	want, wanted

Research Question 3 MBN

Word	Length	Count	Weighted Percentage	Similar Words
attention	9	9	1.01%	attention
baby	4	16	1.79%	babies, baby
better	6	6	0.67%	better
definitely	10	6	0.67%	definitely
feel	4	8	0.90%	feel, feeling, feelings
get	3	8	0.90%	get, gets, getting
great	5	6	0.67%	great
helped	6	22	2.47%	help, helped, helpful, helping, helps
just	4	43	4.82%	just
kids	4	7	0.78%	kid, kids
know	4	38	4.26%	know

letting	7	6	0.67%	let, letting
like	4	64	7.17%	like
making	6	6	0.67%	make, makes, making
mean	4	8	0.90%	mean, means
moms	4	14	1.57%	mom, moms
need	4	8	0.90%	need, needed, needs
parent	6	7	0.78%	parent, parenting, parents
pay	3	9	1.01%	pay, paying
people	6	8	0.90%	people
program	7	18	2.02%	program, programs
really	6	9	1.01%	really
talk	4	14	1.57%	talk, talked, talking

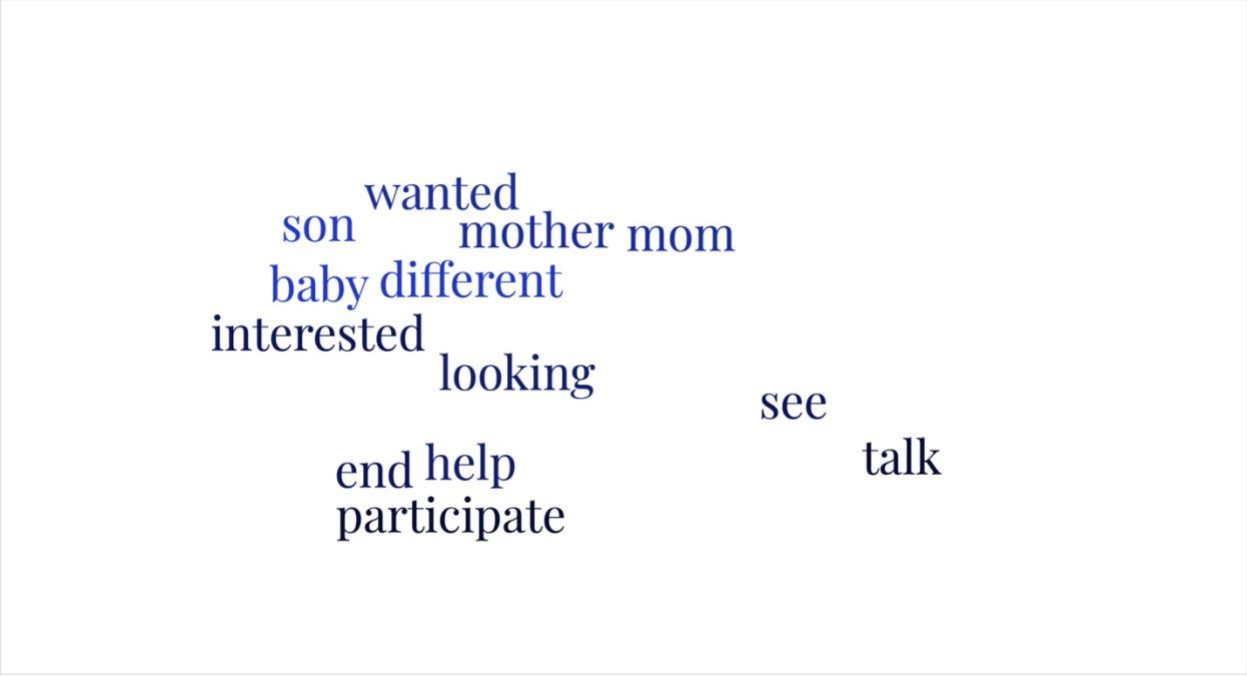
telling	7	10	1.12%	tell, telling
things	6	11	1.23%	thing, things
think	5	7	0.78%	think
time	4	8	0.90%	time
told	4	10	1.12%	told
understand	10	10	1.12%	understand, understanding
yeah	4	11	1.23%	yeah

Appendix D

Word Clouds

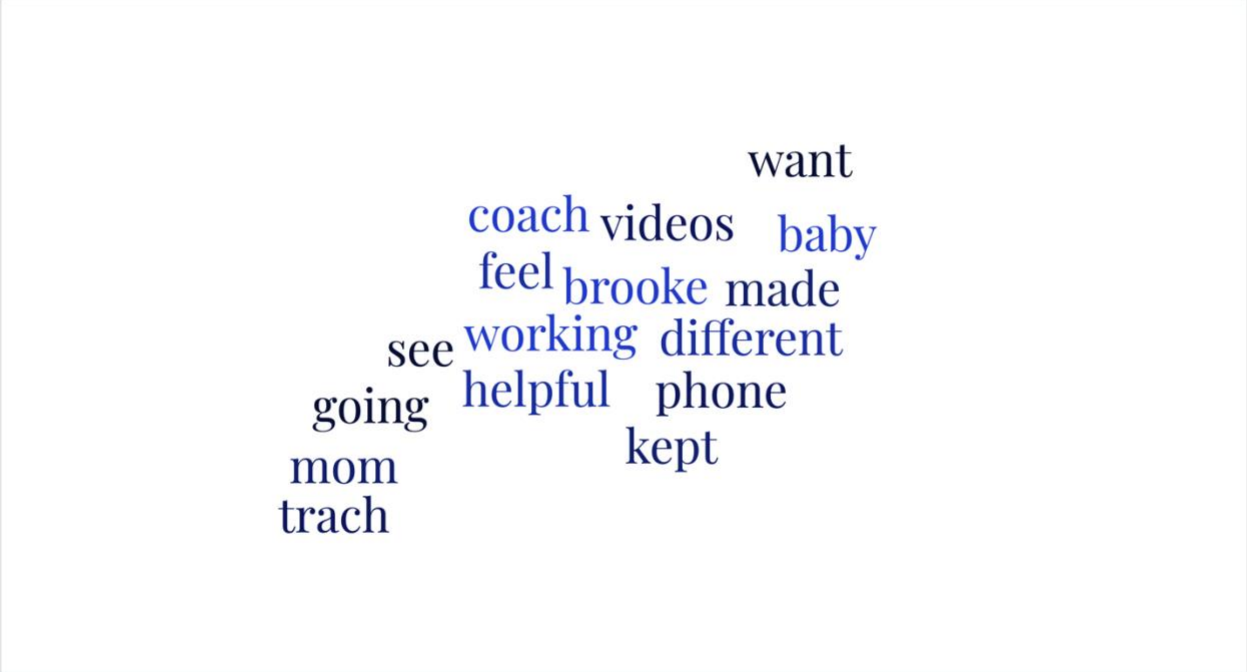
Research Question 1 (A) MBN

Research Question 1 (A) DDAS

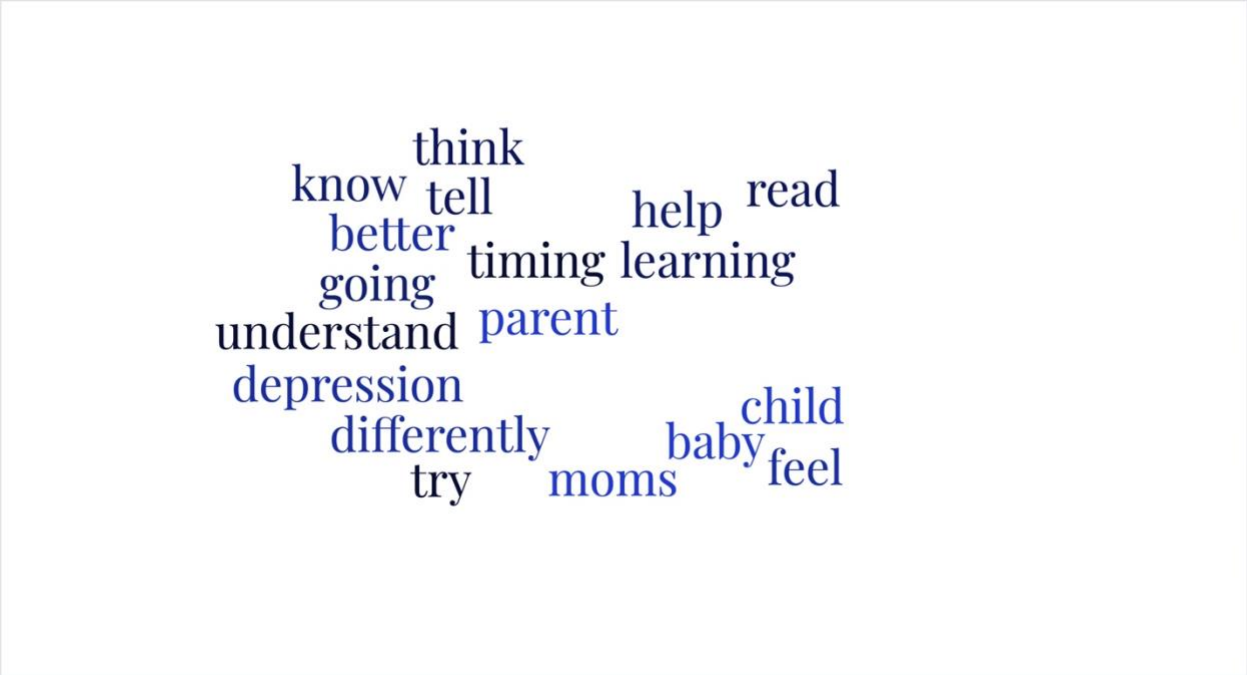


Research Question 1 (B) MBN

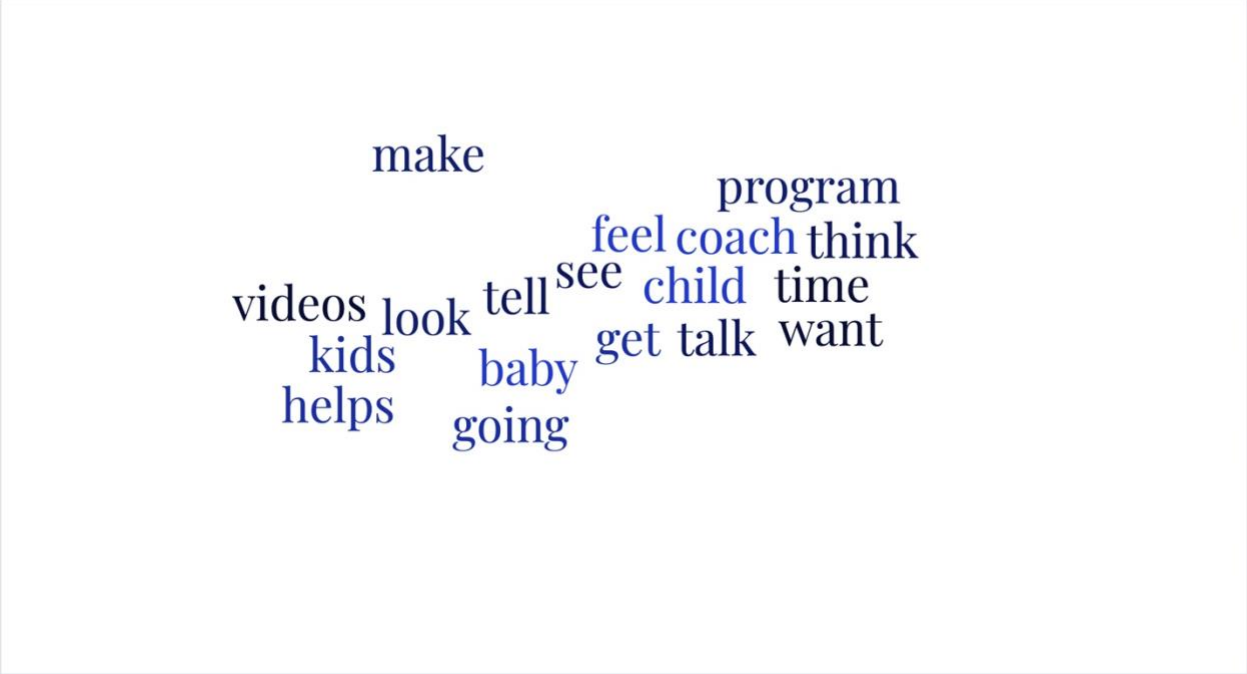
Research Question 1 (B) DDAS



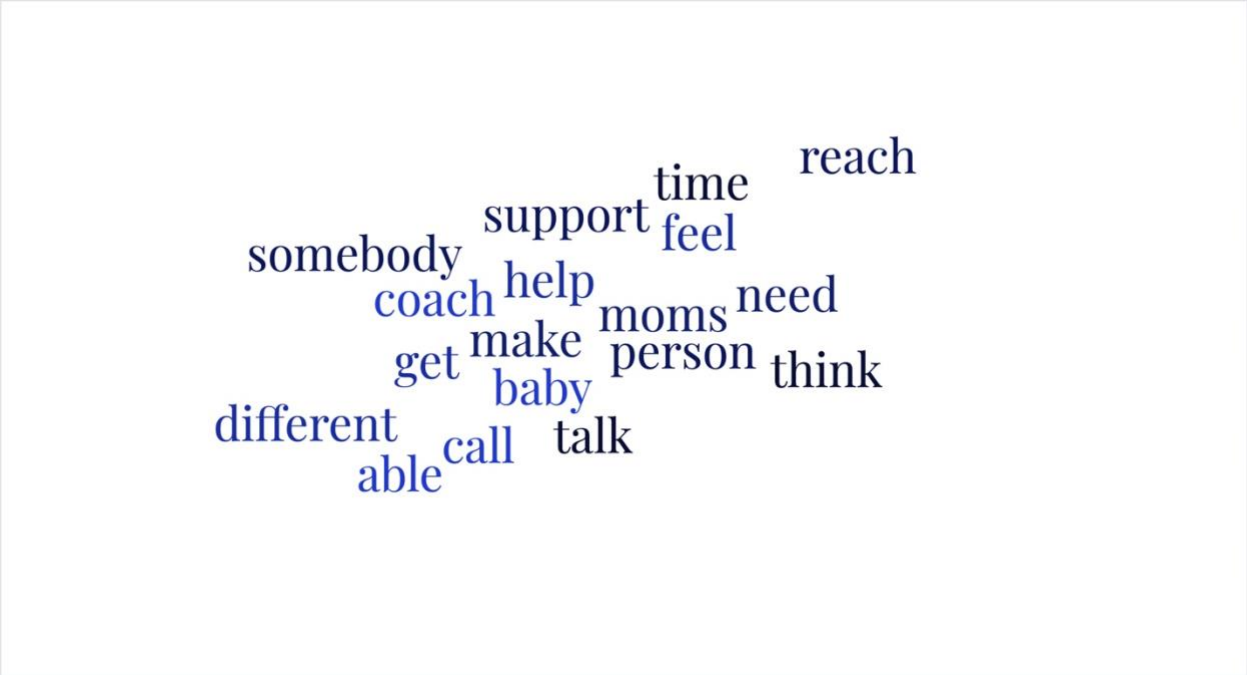
Research Question 2 (A) MBN



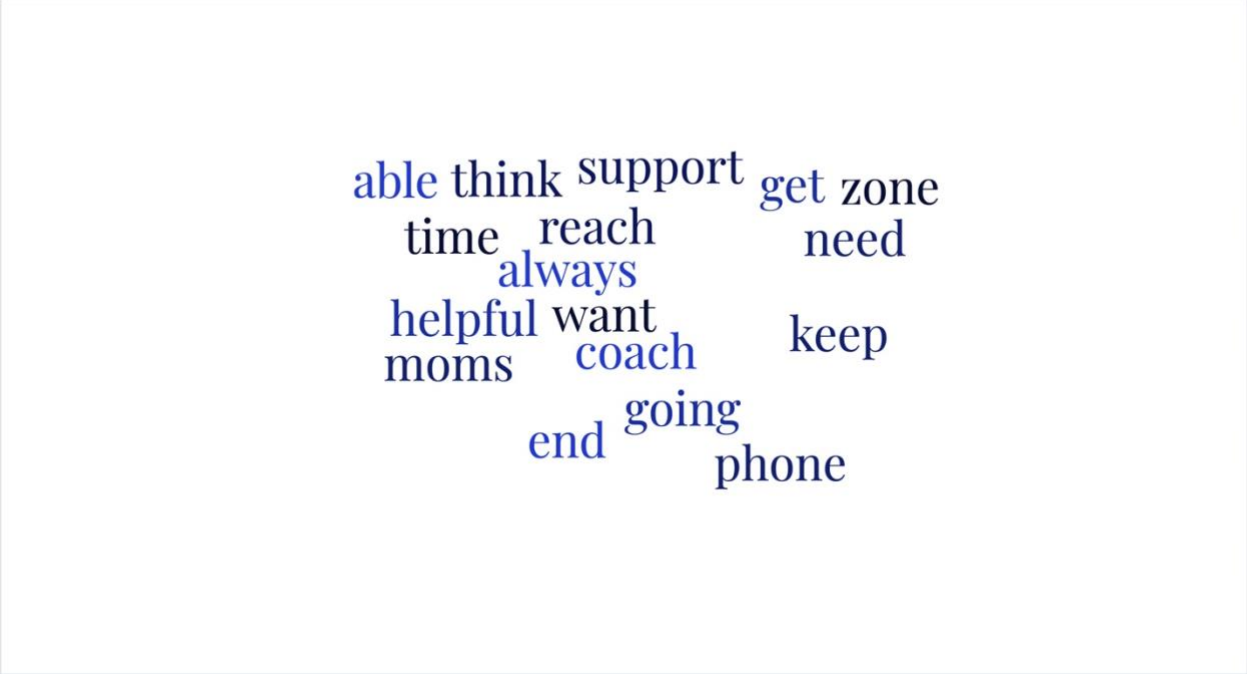
Research Question 2 (A) DDAS



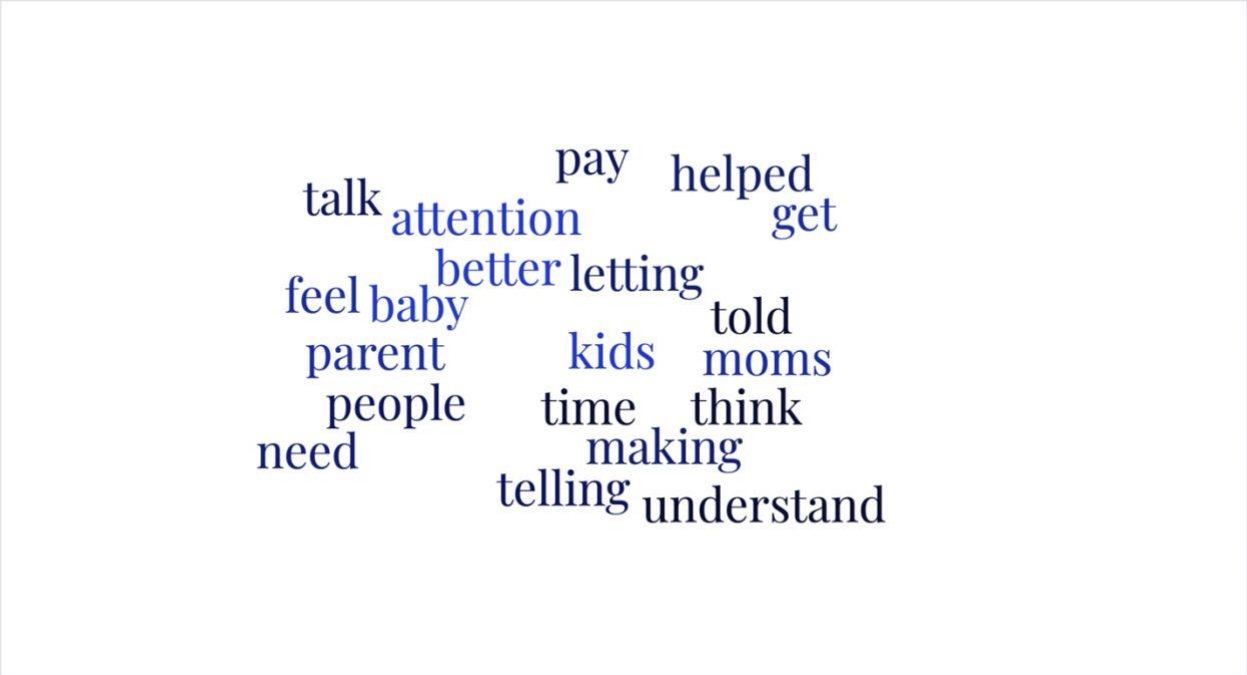
Research Question 2 (B) MBN



Research Question 2 (B) DDAS



Research Question 3 MBN



Research Question 3 DDAS

Appendix E

Table 7

Intercoder Agreement Report

Theme/Subtheme	Kappa	Percent Agreement
Research Question 1(A)		
Desire to learn to be and to be the best parent I can be	1.00	100.00
Being a first-time mother	1.00	100.00
Being a mother with older children	0.94	98.04
Premature Infant	1.00	100.00
Desire to observe milestones	1.00	100.00
Mental Health Concerns	1.00	100.0
Desire for support	0.94	97.22
Referred to the Program	1.00	100.00
Total	0.99	
Research Question 1(B)		
Desire to complete for infant's wellbeing	0.56	83.85
Coach support	0.88	94.12
Emotional support	0.87	93.71
Program support features	0.67	83.82
App Self-Learning Content (Related to improving mood and supporting development)	0.63	84.92
Coach calls or check ins	0.83	94.40
Creating videos with my baby	0.95	98.11
Personal desire to complete the program (Desire for mastery)	0.71	94.77
Total	0.79	
Research Question 2(A)		
Learning positive ways to interact with baby (positive parenting practices)	1.00	100
Recognizing infant milestones	1.00	100
Learning to recognize depression symptoms and improve mood	1.00	100
Improving infant wellbeing	1.00	100
Coach support	1.00	100
Emotional support	1.00	100
Informational support	1.00	100
Program support features	1.00	100
App Self-Learning Content (Related to improving mood and supporting infant development)	1.00	100
Coach calls or check ins	1.00	100

Creating videos with my baby	1.00	100
Total	1.00	100
Research Question 2(B)		
Coach support	0.87	93.69
Emotional support	0.86	93.33
Desire to engage with other mothers	1.00	100.00
Mothers who have completed the program	1.00	100.00
Program support features	0.76	88.24
App self-learning content (Related to improving mood or supporting infant development)	0.78	89.82
Total	0.87	
Research Question 3		
Learning to recognize depression symptoms and improve mood	0.98	99.03
Learning positive ways to interact with baby (positive parenting practices)	0.85	92.57
Recognizing milestones	0.74	93.44
Coach support	1.00	100.00
Emotional support	1.00	100.00
Program support features	0.85	92.72
App Self-Learning Content (Related to improving mood or supporting infant development)	0.57	82.81
Total	0.88	