The report committee for Joseph Wilkinson
Certifies that this is the approved version of the following report:

Postpartum Depression – Researching new methods for diagnosis, education, and treatment

Supervising Committee:

Kaya de Barbaro, Supervisor

Eric Nordquist, Co-Supervisor

Postpartum Depression – Researching new methods for diagnosis, education, and treatment

By

Joseph Matthew Wilkinson

Report

Presented to the Faculty of the Graduate School

Of the University of Texas at Austin

In Partial Fulfillment

Of the Requirements

For the Degree of

Master of Science in Information Studies

The University of Texas at Austin

May 2019

Postpartum Depression – Researching new methods for diagnosis, education, and treatment

By

Joseph Matthew Wilkinson, MSIS

University of Texas at Austin, 2019

Supervisors: Kaya de Barbaro, Eric Nordquist

Abstract:

Postpartum depression can affect, directly or indirectly, both mothers and fathers after the birth of a child. The primary goal of the project was to conduct exploratory research to determine new methods for diagnosis and treatment of the condition. Specifically, we looked for ways to use technology to educate people about postpartum depression, as well as treat it. We hoped this would also increase accessibility of care to all communities.

We conducted interviews directly with people who had experienced postpartum depression as well as people who knew someone who experienced it. Through the interviews we learned about their experiences and asked when and where intervention could have helped alleviate the condition. We also polled them about using technology to treat postpartum depression, and whether they found that to be potentially helpful. After completing the interviews, we collected our data and prepared a report containing our findings and recommendations.

Table of Contents

INTRODUCTION 1

METHOD 2

RESULTS 4

DISCUSSION 12

CONCLUSION 17

APPENDIX I: INTERVIEW SCRIPT 18

INTRODUCTION (5-7 MINUTES) 18
PATIENT BACKGROUND AND EXPERIENCE (10-15 MINUTES) 18
PROCESS INTERVIEW (5-10 MINUTES) 19
WRAP-UP (5 MINUTES) 20

WORKS CITED 22

Introduction

Postpartum depression is a mood disorder that occurs soon after childbirth, and can include conditions such as depression, anxiety, and obsessive compulsive disorder. Postpartum depression is estimated to affect one in five women who give birth (Bennett & Indman, 2015). This is a different condition than the "baby blues," which generally resolves itself by three weeks postpartum. The diagnosis rate for women with postpartum depression is around 40%, and many of those do not seek or receive treatment (Ko, Farr, Dietz, & & Robbins, 2012). However, studies have shown that forms of direct treatment for postpartum depression are generally effective, with one showing that forms of counseling could result in recovery rates of 70-80% (Hendrick, 2003). With a high level of incidence coupled with evidence of effective recovery, research into new methods for treatment should be emphasized. Using technology to treat postpartum depression is a promising angle, as studies have shown new mothers frequently use various forms of technology to educate themselves on child care-related topics: from 45% of mothers using YouTube for child care videos to 96% of mothers performing simple web searches for tips for new mothers (Walker, et al., 2017).

Method

The primary goal of the project was to conduct exploratory research on postpartum depression, explore the stories and experiences of people who had experienced it, and attempt to devise new methods of treatment from that information. Another goal was to see if technology, such as phone applications and social networking, could be used in these new methods. Any conclusions or design concepts reached from the research could be followed up on by future researchers, so this freed us to focus solely on research and interacting with patients.

To this end, we set out to conduct a series of phone or video-based patient interviews with people who had experienced postpartum depression. The interviews would be around half an hour long and focus on the patient's own story, as well as their responses to a number of questions, some related to their usage of technology. In order to aid in the recruitment process, we worked with Postpartum Support International (PSI), a group dedicated to aiding those affected by postpartum depression and related conditions. PSI posted a recruitment ad on their Facebook group, with respondents able to sign up for interview times via a Doodle web application. In total, we conducted twenty-one phone or video interviews with people who had experienced postpartum depression. The interviewees were all women, and were located across the United States. Of the participants who disclosed their age, the youngest was 28 years old, and the oldest was 44 years old. The mean of the submitted ages was 34 years old, and the range was 16 years. Five participants had one child, eleven had two children, three had three children, and two had five children. All participants reported some level of familiarity with technology such as cell phones and phone apps. Four participants mentioned using meditation

apps, six used apps for exercise or health tracking, and three used apps for monitoring their baby's health or schedule.

Interviews were planned to last around thirty minutes each, with the large majority matching this estimation. A simple script was written to guide the interview, though ample room for improvisation and adjustments was given at the interviewer's discretion to follow up on promising angles and allow the interviewee to detail events to the extent that they desired. The interview script started out with basic introductions and consent agreements for allowing the recording of the interview. From there, the interviewee was encouraged to tell the story of their experiences in their own words and fashion, to the extent that they were comfortable detailing. The interviewer would ask questions as needed and request more detail where needed. Afterwards, the interviewee was polled about their usage of technology, with a focus on health and lifestyle-related phone applications, as well as social-focused applications. From there, the interviewee was asked about their willingness to use hypothetical apps relating to postpartum depression recovery and support groups. Other questions about wearable technology and artificial intelligence "chatbots" were asked if time or subject matter permitted. Finally, the interview ended with the interviewee encouraged to share their most valued lessons from their experience or anything they would like other mothers to know about postpartum depression. The full interview script is included in the appendix of this document.

Results

As the major data from this research, the interview responses, was generally dictated in chronological order, it is best to look at the results through the same timeline of events: starting with the prenatal development or pregnancy, detailing any events that occurred therein, such as doctor visits or medical education; then heading to the actual birth of the child itself, as well as the immediate period following it (wherein the mother or child may require additional time in the hospital); leading finally to the postpartum timeframe, which could contain significant events as far as several years post-birth. As each interviewee inevitably experienced different challenges or complications, each response varied significantly, with some focusing more on one time period than another. Some interviewees may have given birth to additional children, with postpartum experiences varying between each. As such, we will look at each time frame individually and discuss many of the common events and difficulties encountered therein.

In the prenatal period, the most significant event for the purposes of our research would be any regular checkups or doctor visits that the mother would attend as a standard part of her pregnancy. Ideally, the mother would be informed and educated about postpartum depression and related symptoms here, so that they would be better prepared to notice or acclimate to such events after giving birth. In many cases, interviewees reported not receiving any information or education about postpartum depression during their doctor visits. Several interviewees did mention receiving the Edinburgh Postnatal Depression survey, which is designed to diagnose potential postpartum depression or other depressive illnesses. The Edinburgh scale assigns the mother a numerical score based on their responses to a number of

mood-related questions on how the mother has felt over the past week. The maximum score is 30, and any score over 10 is considered to be at risk, and the mother should be further counseled based on this score. Two interviewees who completed the survey with a score higher than 10 reported receiving no further care or responses based on their survey score. One interviewee stated, “Even though they issue the document, they don’t have the next step…nobody asked me, where do we go from here?” Most interviewees who did receive counsel about postpartum depression, or those who were already familiar with the condition based on various prior experiences, reported being better prepared for any symptoms that arose after giving birth, though in some cases they could still have difficulty acknowledging it. “For anyone else, I would have realized it was depression,” one interviewee stated. “But when it was me experiencing it, it was a different world.”

In addition to the mothers receiving specific information about postpartum depression, spouses and partners, as well as family members, friends, and other members of a mother’s support group could benefit from being made aware and educated on postpartum depression. This would allow them to notice any symptoms that the mother herself may be unaware of, or have difficulty noticing or admitting. Interviewees with support groups educated in this manner reported finding it to be helpful. Often it would only take one member of the support group being familiar with the symptoms of postpartum depression for effective treatment to be reached. In either case, the act of reaching out to the person was effective. As one interviewee put it, “Look at the mom and talk to her. Don’t be afraid to just ask the question.”

The period of time around the actual birth of the child, as well as the immediate period afterwards, is understandably hectic and relatively unpredictable. It is also generally a very

different experience for each mother. As such, the difficulties they encountered were similarly varied. In general, the pain points that arose from this period generally included things going differently than the mother had envisioned or possibly planned for. Some mothers wanted standard hospital births, while others worked with midwives and may have tried for home births, water births, or other specialized techniques. In several cases, some of these plans had to be abandoned due to complications or unplanned events, and many mothers did not receive that "ideal" birth that they had hoped for. It is understandable that such a situation could be upsetting, leading to the potential for further difficulty. Along the same lines, some mothers required further hospitalization for events such as caesarean sections or other birth complications. The babies may have also required time in the neonatal intensive care unit (NICU), which could last up to several days or weeks. Any of these unplanned and upsetting situations could further contribute to the potential for difficulties postpartum.

Some interviewees reported difficulty bonding immediately with the baby after birth. This was cited as a clash with what they saw as "traditional" births, wherein mothers immediately bond with their newborns upon seeing or holding them for the first time. In many ways this was a sense of not matching up with cultural expectations: by feeling this way they were not matching up with how mothers were "supposed" to feel, which could be another source of anxiety or self-doubt towards their experience. This could also further alienate them from the baby, potentially exacerbating the difficulty in establishing a relationship down the line. Postpartum depression education mentions this as a normal situation and one that can be alleviated by time, but without being made aware of this prior to the child's birth, mothers may not know how to respond. One interviewee searched online forums for new mothers to

investigate this concern. “I lurked on the forums to see if it was acceptable…since nobody mentioned it, I didn’t say a word.” Another “traditional” aspect mentioned was the idea that the mothers are supposed to love and enjoy the entire pregnancy process. “Everyone is supposed to love it, but I despised it,” one interviewee stated. “When I talked with other mothers about it, I found that they felt the same way, but never wanted to talk about it openly.”

Difficulties encountered in the postpartum period differed between interviewees, as might be expected. Postpartum depression, along with anxiety, obsessive-compulsive disorder, and other conditions arose at various times. For most interviewees, the conditions started soon after birth and grew in severity over time, particularly with incidents of increased stress or sleep deprivation. Symptoms could be magnified if the mother was unable to “remove” herself completely from care of the baby, essentially being able to hand care temporarily to a partner or family member. The mother could then mentally leave the caregiver role and allow herself to rest, sleep, or otherwise recover from the stress of the childcare role. Two respondents specifically cited returning to regular exercise as helping in their recovery process. Interviewees who suffered from sleep deprivation responded that they were unable to make this transition, which added to their symptoms. The existence of a support structure around the mother was vital for this, and even mothers who had family around early on post-birth or had a spouse with work leave frequently encountered this when that support structure had to return home or to work.

Another frequent pain point was intrusive thoughts, where the mother had random or irrational thoughts about their baby or themselves. This included thoughts that they might hurt

the baby, be it through malice or accidental situations, or just irrational thoughts that the baby was in danger any time they had left the house, saw strangers in public, or other situations. These also included thoughts the mother had about herself, such as thinking she was unable to properly care for the baby, or that the baby and the rest of her family would be better off if she were not around. One interviewee described the thoughts as "rolling in like a fog," out of nowhere. Interviewees who experienced significant intrusive thoughts responded that they were unaware of the term itself prior to birth, and frequently thought that they were the only mothers who were feeling these things, or that they had "gone crazy." For many of the interviewees, simply learning of the idea of intrusive thoughts, through education or support groups, was enough to begin reducing the stress and symptoms.

Many of the interviewees sought out support groups in their recovery process. Some of these were voluntary groups, while others were part of hospital-mandated recovery processes. Support groups were almost universally effective in the recovery process, with nearly every interviewee reporting them to be very helpful in their recovery. Socializing with other mothers was effective, as was hearing stories from others who had gone through similar difficulties in their postpartum experience. As one interviewee put it, "other moms just 'got' it." Many interviewees directly mentioned the idea of "not being alone" was a significant revelation. Education gained from support groups was also reported as effective. Many interviewees learned about postpartum depression, some for the first time, in these support groups, as well as learning about terms such as intrusive thoughts. Simply putting names to the concepts and learning more about them was also reported as a "lightbulb" moment in their recovery process.

Many respondents also reported taking medication in their recovery, with Zoloft and Wellbutrin being common.

The next part of the interview polled the respondent's familiarity with technology relating to healthcare, child care, and other lifestyle topics. Interviewees universally used some form of phone applications or similar technology, with health and fitness trackers being the most common, with various mood and meditation applications also being common. Some respondents used apps relating to child care, generally to keep track of various tasks or information about the baby. Social networks were also universally used amongst respondents. When asked about using a hypothetical application relating to postpartum depression, particularly ones that gave access to support groups or similar functions, respondents were positive and interested in the concept. Since so many of the interviewees reported success with support groups, it is understandable that technology that could make access easier and more universal would be interesting. Interviewees were asked about their reactions to various types of online communication, such as text-based chat and video-based chat. The reactions to these varied, with respondents having different levels of comfort or willingness to use for each. Some respondents expressed that their preference to various types changed depending on their moods and openness at the time; text chat might be more agreeable when they were not feeling as social, while video chat could be effective in times where they sought out empathetic responses. Interviewees were generally more comfortable with the idea of communicating with other moms over medical professionals or experts, largely due to emphasizing with those who had been through similar situations as to their own. Respondents did appreciate the idea of access to professionals, however, particularly if they were in a moderation role, much as they

would be in live support groups. Responses to the idea of artificial intelligence-based chatbots were similar, with interviewees having varying levels of comfort with the idea and expressing interest in them for various reasons. Some respondents felt that chatbots were a useful option when they felt afraid of being judged by asking questions to a real person (this interacted a bit with some intrusive thoughts, where a mother might be afraid of how a real person would react to certain statements). Chatbots were also seen as useful for logistical reasons, such as needing a response to a question in the middle of the night. Criticism of the chatbots included a lack of empathy (occasionally "creepiness") that one would get when speaking to a real person. One respondent also raised the concern that a poorly-written response from a chatbot could be insensitive or even triggering to some people. Finally, responses to the idea of wearable technology were generally positive, particularly when the technology could monitor one's heart rate to track anxiety or other conditions. The idea of using wearable technology on their babies was a little more tentative, generally in concern for the baby's safety. The main concern with wearable technology was the mother's level of control over the data created by the devices, particularly if it was able to contact people automatically based on its readings. While the general idea of automatic responses was acceptable, respondents wanted control over who was being contacted, and the degrees or levels at which the automatic functions were activated. Concerns raised included generating additional anxiety due to the device, or concerns that the automatic functions could trigger undesired responses from health professionals.

Finally, at the end of the interview, the mothers were asked to share any "life lessons" they had learned through their experiences, or to consider what they wish they could tell other

mothers going through postpartum depression or other health concerns. One of the most common responses was to stress that the mother was never alone, and could be comfortable being open with others and sharing their thoughts and concerns. Considering the effectiveness of education in combating postpartum depression, this level of openness could be the first step for mothers towards receiving the proper care needed for their recovery process. Another concern raised was that the mothers can often "disappear" after birth due to attention from their support structure, family, and friends moving from the mother to the newborn. One respondent mentioned that friends frequently asked "how the baby was doing," but never how she was doing. A feeling of abandonment created by this shift could contribute to any feelings of depression and anxiety already present. It is important for the support structure around the mother to remain attentive throughout the entire process of pregnancy, birth, and postpartum.

Discussion

A primary focus of this project, alongside the development of new methods for diagnosis, education, and treatment of postpartum depression, was to take a technology focus when coming up with potential solutions. As such, some of the solutions will be phrased as design ideas, intended for the design of applications and programs for treating postpartum depression.

Many of the interviewees mentioned that one of the most effective actions for treating their postpartum symptoms was simply learning more about the conditions and putting names and concepts to the feelings and thoughts they were having. This was often phrased as a "lightbulb moment," essentially a sudden revelation that explained much of the problems and concerns that they had been experiencing. As such, including education about postpartum into regular intervals in a mother's prenatal and postpartum experiences is vital. Many of the interviewees had not heard of postpartum depression, or were not familiar with it beyond a simple explanation or concept. One interviewee even mentioned not knowing about postpartum depression until she came across a Facebook page for a support group, long after experiencing symptoms. Proper preparation of mothers should alleviate symptoms or at least allow them to recognize them when they eventually arise. Since mothers generally have regular checkups at the hospital leading up to birth, adding education into these visits should be effective. It is likely that some measure of this already exists, but some sort of formal process to implement it more universally would help. Few of the respondents reported receiving the Edinburgh scale, for example. Of course, from a realistic standpoint, implementing nationwide policy into the healthcare system would prove significantly difficult, particularly when involving

the insurance system. As such, an independent process for educating expectant mothers would be a viable alternative. Creating a pregnancy-focused application complete with educational modules delivered periodically to mothers could supplement their existing activities. Such education would also prove useful to spouses and family members, so any such app could be designed for multiple users, with a universal account system connecting the support structure under one umbrella. Expectant mothers would be delivered one set of educational modules, while other members of the support structure could receive modules tailored to their roles, possibly in a stripped-down version of the app for easier use.

The period of time immediately around the birth is understandably hectic, and as such it may be difficult to design anything specifically for usage during that time. It would be better to properly prepare mothers ahead of time through the earlier educational modules. Many of the interviewees expressed concern that their plans and expectations for their childbirth process ended up being changed or abandoned due to unexpected complications. Preparing mothers for this possibility is important, as the added stress and damaged expectations could contribute to future issues. As such, the design recommendation for this period of time would be fulfilled by education modules delivered before and after the actual birth, allowing mothers to completely focus on the more important tasks of the event.

Interviewees reported beginning to experience what they recognized or later recognized as postpartum depression symptoms at varying times after giving birth. It is important to address the concept of the “baby blues” or maternity blues alongside this, a condition that causes mild bouts of depression or sadness immediately following birth, and generally dissipates on its own a few weeks later. While this is a recognized condition, it is important to

note that it occasionally caused mothers or their support system to misdiagnose actual postpartum depression and related conditions, as they thought the feelings would eventually go away on their own. Combined with the general sense that many respondents had of keeping their feelings and concerns to themselves, it is no surprise that many struggled with postpartum depression without realizing the severity of their symptoms. Continuing with the education modules established earlier, teaching the difference between maternity blues and more severe postpartum depression symptoms is vital, making sure that mothers know when their condition may have progressed to a point where they need to seek medical professionals.

As mentioned before, the onset of postpartum depression symptoms, as well as their duration and severity, varied between the respondents. Combating this initial onset may be best done with the prior education, but in determining methods for treatment for existing symptoms or for patients who developed postpartum depression regardless of prior education, it may be best to examine how the interviewees ultimately began their recovery process. The effectiveness of support groups was clear in the results of the interviews: respondents cited support groups as a significant or primary factor in their recovery. Increasing the availability and accessibility of support groups to as many mothers as possible can be seen as a strong objective for any resulting policy or design recommendations. Several respondents mentioned difficulty accessing support groups due to living in rural communities, having financial hardship, or simply having difficulty leaving the house due to their current situations. Addressing these accessibility issues would also be vital for the emerging policy or technology. Considering the answers about technology familiarity and comfort is also helpful for these directives. Interviewees were widely familiar with technological solutions for health and lifestyle issues, and frequently were already

making use of them. There should be no concern about whether or not users would take to an app solution for this issue. Users had varying levels of comfort with text and video based chat options, so it would be best to make both available and let the user choose whichever they desired at the moment.

Taken as a whole, we can envision the application working as follows. Mothers would download the app early on in their pregnancy or prenatal period, perhaps informed of it by their doctor or healthcare provider, or simply learning of it through advertising or word of mouth. After onboarding and account creation, the app would then begin delivering education modules on a specified schedule. Modules would be tailored to the general timeframes of the mother's pregnancy, as well as focus on introducing postpartum depression specific terms and concepts, along with symptoms to watch for in the postpartum period. In the third trimester, modules would begin preparing the mother for the actual event of the birth. In addition to these modules for the mother, spouses, partners, and family members could access an alternate version of the app, with a guest account created as an offshoot of the mother's primary account. They would receive education modules tailored to their role in the support system around the mother, informing them of symptoms or behaviors to be aware of and watch for.

After the birth of the baby, while educational modules would still be available for viewing (perhaps with a summarized reference version or "cheat sheet" for easier access), the focus of the application would shift to a support group or social network for mothers. Mothers could be separated into groups based on timing of birth, or just join generalized groups at will. Groups could also be formed around specific issues or symptoms. The app would allow

discussion through text-based means, much like a web forum or social network, as well as give the option for video conversations in a group setting. Both options would also be available in direct or one-on-one messaging formats.

Additionally, the app could offer detailed profile options where mothers could share their own stories and experiences with others. During the interviews, mothers mentioned how effective it was to hear the stories and experiences of others, relating them to their own experiences and learning that they were not alone in their feelings. Bringing this experience to the app's functionality would be imperative. Mothers could also show that they were open to being messaged by others, and offer their own direct council. As with any modern application, this feature would offer detailed privacy and anonymity options, allowing users to only share as much as they were comfortable with. Specialized profiles would also be offered for medical experts and professionals, with similar functionality alongside a verification function.

Conclusion

The lessons that mothers chose to share at the end of the interviews were invaluable in illuminating methods for addressing postpartum depression. Over and over, it was stressed that openness and transparency in the mother's feelings and thoughts were vital to the recovery process. We also detailed the importance of education and interaction with other mothers. By combining all of these aspects, we can increase the chance of a favorable outcome. The design recommendations aim to suggest a potential application that can achieve those goals. Overall, the recovery rate for postpartum depression through treatment is high, so any methods that can increase accessibility and knowledge to patients will be valuable.

Appendix I: Interview Script

Introduction (5-7 minutes)

Hello! Thank you for agreeing to be interviewed for this project. My name is ___, and I'm working with (University of Texas, etc) to conduct research on postpartum depression and working with PSI to think about new ways to provide support to parents. As a patient/spouse/family member who has experienced/known someone who experienced postpartum depression, your insight is extremely valuable to our research. I'd like to discuss your experiences in detail.

My colleague _____ is also here to observe and take notes, so that I can focus on you and your responses. (Alternate: I will be taking some notes during the interview, so don't worry if I briefly look away). With your consent, I will also be recording this session for later review. All your responses and data will be kept anonymous, and your participation is entirely voluntary and you can stop at any time. You only have to share what you are comfortable sharing. Please let me know if you have any concerns.

This interview should take around 30 minutes. I'll start with some basic questions about yourself and your background. We'll proceed to a basic timeline and walkthrough of you/your family's experience with childbirth and postpartum depression. At any point I might ask for more in-depth information about specific areas, and you can also feel free to provide more feedback on anything you think of during the process. Afterwards, I'll ask a few open questions about *some new ideas that might be helpful for supporting families going through postpartum .* You will also have a chance to offer any other final thoughts or insights that we don't get to in the rest of the interview.

Before we begin, we need to run through some statements of consent. As a participant, you may request to stop the interview at any time, as well as ask questions or simply stop if you become uncomfortable. Are you okay with the process and being recorded? Okay then, let's begin.

Patient Background and Experience (10-15 minutes)

Let's start this out light and easy, please tell me your name and a little bit about yourself and your family.

[follow ups, ask how many kids they have if they do not bring it up]

So, as you know, we are conducting research on postpartum depression, with the eventual goal of developing new ways to support parents. We feel the best way to achieve this is to speak directly with the patients and potential users, to learn about their experiences and collect direct data and opinions.

To start things off, tell me about your/ your partners pregnancy.

[follow up, try to discern any pain points that the interviewee touches upon. Note that they may have had multiple pregnancies, so keep that in mind when working through their experience]

Were there any aspects of the pregnancy that seemed particularly difficult, or more difficult than you expected?

Did anyone talk to you about postpartum depression? Like a doctor or anyone?

Did you know anything about postpartum before you gave birth?
Did you know what kinds of signs to watch out for?
Did you know how common it was? *(estimated 1 in 7)*

Next, tell me about the period after YOUR child was born.

[follow ups, figure out how/when they realized they had postpartum depression. Ask about daily routines, living with postpartum, the support they received, how they got out of it/learned about PSI, etc. Let them tell the story first, then follow up with the missing specifics]

Finally, I'd like to ask about any instances where you were told about postpartum depression or were given information and resources about the condition (modify this if it came up earlier in the walkthrough, we want to know if they were informed/told about postpartum both pre- and post-pregnancy).

Process Interview (5-10 minutes)

I'd like to ask you a few questions about your usage of technology. Have you ever used any apps or similar products for health or lifestyle reasons? In particular, I'd like to know if you used any during the pre- or post- pregnancy period.

[follow up on any relevant responses]

Would you be open to using apps or similar technology to aid in recovering from postpartum depression?
[follow ups]

[depending on their response] Let me bring up some examples of potential technology:
Would you be interested in connecting with and hearing stories from other moms who experienced postpartum depression?
Would you be interested in hearing from experts on postpartum depression and their advice for living with postpartum depression?
Would you prefer --an app that would connect you with other moms or an apps that would allow you to talk to an expert?
[ask the third if they were open to both of the first two questions]

How would those compare to a chatbot that you could ask anything related to depression , at any random time during the night? Would you trust an automated agent to provide you advice?

What about if it was incorporated with technology that could sense things about activity that might be related to your depression? Such as how much you were sleeping, or how difficult your baby was?

What if it could give you advice based on your specific situation?

[modify this question based on how they described learning about or being diagnosed with postpartum]

Lastly, were there any techniques or services that helped you during your postpartum period ?

[modify in the same way as the above question]

Wrap-Up (5 minutes)

We'll start wrapping up now. Was there anything else you'd like to add about your experiences with and recovering from postpartum depression that we didn't touch on during the rest of the interview?

Did you have any other general thoughts or observations? I generally like to ask interviewees if there was one specific thought or lesson they'd most like me to learn from the interview, what that lesson would be.

That's all we have for today, then. Thank you again for your time, and if anything else comes to mind, feel free to contact us at ___ to follow up. Thanks again!

(Additional example questions, in case the more open-ended approach isn't working)

Experiences as a Parent **~ 10m, 40m total**

1. How many children do you have, and what are their ages?
2. During your / your partner's pregnancy, what did you know about postpartum mood and anxiety disorders?
    Did anyone talk to you about these topics during or after your pregnancy? (medical professionals, doula? etc)

3. Did you experience any postpartum mood or anxiety symptoms after any of your children's births?

A. If yes, What was this experience like for you?

B. What kinds of challenges did you face? Can you describe a typical "difficult" day or interaction?

C. When did you become aware that you might be experiencing postpartum issues?

D. What kinds of help or support did you have around you?

1. Were there things that you did for yourself or others did for you that were helpful? What kinds?

a. Here: (probe further on the types of support that were most salient for them : part of what we're trying to get at here is really what kinds of support they perceived as most useful

and what we might be able to develop to provide them more of that - whether its connecting to experts vs. peers vs. access to information/tips

2. What about things that were unhelpful?
3. Did you know about organizations such as PSI? Why or why didn't you reach out to such organizations?

. If yes - how did you hear about PSI?

a. What was the experience of connecting with PSI like for you? What were the important things this/ similar organization provided for you?

4. Were you a part of any parenting groups, support groups, or otherwise that helped you during the postpartum period?

A. If yes - what was this experience like for you? What were the important things these orgs provided for you?

5. What advice would you give to new parents to help them through the postpartum period?

. Were there any tips, ideas, or practices that helped you?

A. Any that didn't?

6. Is there anything we failed to cover that you feel is important for me to know?

Works Cited

Bennett, S., & Indman, P. (2015). *Beyond the Blues: Understanding and Treating Prenatal and Postpartum Depression & Anxiety.* San Francisco, CA: Untreed Reads.

Hendrick, V. (2003). Treatment of postnatal depression. *The BMJ*, 1003-4.

Ko, J. K., Farr, S. L., Dietz, P. M., & & Robbins, C. L. (2012). Depression and treatment among US pregnant and nonpregnant women of reproductive age. *Journal of Women's Health*, 830-836.

Walker, L., Mackert, M., Ahn, J., Vaughan, M., Sterling, B., Guy, S., & Hendrickson, S. (2017). e-Health and new moms: Contextual factors associated with sources of health information. *Public Health Nursing*, 561-568.