Healthcare Professionals' Perceptions of Factors That Could Inform Adherence Interventions for Postnatal Depression Treatments

Omobolanle Omisade, University of Portsmouth, UK*
https://orcid.org/0000-0003-2730-0401

Alice Good, University of Portsmouth, UK

ABSTRACT

Interventions for postnatal depression (PND) have been widely researched, but little is known about techniques to improve poor adherence to treatment and sustained outcomes. To explore healthcare professionals' experience, a semi-structured interview comprising of six experienced healthcare practitioners was conducted. The use of adjunct support, combining multiple interventions, and self-management could be used to improve adherence behaviour. When women can notice the effect of treatment, it builds a positive attitude toward treatment adherence. One barrier to seeking treatment was linked to trust and fear. Easy accessibility is an important factor that could facilitate adherence. This study provides a good basis for exploring professionals' perception of techniques that could facilitate adherence to PND prescribed treatments, informed by an empirically validated theory. The findings from this study could inform the requirements of treatment adherence intervention for women with PND.

KEYWORDS

Additional Postnatal Depression Treatment, Adherence to Postnatal Depression Treatment, Postnatal Depression, Postnatal Depression Treatment, Sustained Treatment Outcome, Treatment Adherence

1. INTRODUCTION

Postnatal Depression [PND] is a mental disorder of significant public health concern. Previous studies report that 13% of women having babies suffer from PND (Glover, Onozawa, & Hodgkinson, 2002; O'Mahen et al., 2014). It is one of the leading causes of maternal morbidity and mortality (Shefaly et al., 2019). PND can make individuals feel lonely, anxious, and afraid, putting them and their families in danger. It has well-documented health consequences for the mother, child and her family (Dennis

DOI: 10.4018/IJARPHM.315802 *Corresponding Author

& Chung-Lee, 2006; Dennis et al., 2012). Children of moms with PND have a higher chance of developing mental health problems during adolescence (Milgrom et al., 2021).

Several effective interventions for PND have emerged in recent years (Huang et al., 2018: Kaltenthaler et al., 2008; Morrell, 2006; Proudfoot et al., 2004; Torous, Friedman & Keshavan, 2014; Yonkers et al., 2008; Nisris, Reebye, Corral & Mills, 2004; Hoffbrand, Howard, Crawley, 2001). A primary concern, however, is that only very few women with PND consistently comply with using treatments provided to them (Goodman, Tyer-Viola, 2010; Thombs et al., 2015). A growing body of literature recognises the importance of adherence to PND treatment intervention. Adherence refers to the extent to which a patient follows a prespecified treatment regimen or protocol (Vandenberk, et al., 2019). Research confirms that non-adherence to treatment is a significant problem. It is estimated that one out of every three depressed patients does not complete their prescribed treatment (Pampallona et al., 2002). In addition, due to barriers, receiving treatment for PND and sustaining it over the long term has been proven to be very difficult. Obstacles could include difficulties with newborn feeding demands and napping schedules, making it difficult to keep regular treatment schedules (O'Mahen et al., 2015).

Non-adherence has been identified as a critical factor impeding increased treatment outcomes for PND (Cuijpers et al., 2008; De Graaf et al., 2009; Dennis & Chung-Lee, 2006; Gonzalez et al., 2005; Omisade et al., 2020; Pampallona et al., 2002). This can increase the cost of service in financial terms and in the investment of time and effort. Therefore, interventions are needed to overcome the barriers to treatment adherence, sustained outcome and overall, the poor well-being of women with PND. Unfortunately, to the best of our knowledge, no research has examined the techniques to improve the quality of adherence to PND-prescribed treatments to date.

1.1 The rationale for the proposed study approach

Research suggests that intervention strategies based on empirically validated theories are potentially more effective in changing health behaviours because they can explain how the intervention works (Michie & Abraham, 2004). Similarly, an intervention should have a sound theoretical basis, allowing the appropriate determinants of behaviour change to be targeted and effective intervention techniques to be identified (Williams et al., 2015). The Theory of Planned Behaviour (TPB) is one of the most widely recognised and employed theories in behaviour change studies (Ajzen, 2011). This theory suggests that people's attitudes towards a behaviour (*behavioural belief, outcome evaluation),* subjective norms (*normative beliefs, motivation to comply*), and perceived behavioural control (*control, belief)* leads to the formation of a behavioural intention, thus the likelihood of performing a behaviour. Furthermore, as a general rule, the more favourable the attitude or subjective norm, and the greater the perceived behavioural control, the stronger should be the person's intention to perform the behaviour (Ajzen, 2011). Previous studies have identified women's attitudes and beliefs toward PND intervention (Omisade, Good, Fitch & Briggs, 2018a, 2018b). However, we assume that the healthcare professional (subjective norms) are significant and could significantly influence techniques and women's decision to adhere to prescribed PND treatments.

2. METHOD

Full ethical approval was obtained from the faculty of technology ethics committee of the University of Portsmouth (Ref: OO2). This qualitative study has three aims: to explore healthcare professionals' experience supporting women suffering from PND. It explored the information, interventions and techniques professionals share with depressed women to ensure treatment adherence. This study also identified the factors that facilitate adherence and those that could be considered to inform the development of PND treatment adherence interventions.

Interviews are appropriate for gathering in-depth information on people's opinions, experiences and feelings (Gubrium & Holstein, 2001). Semi-structured interviews enabled professionals to express themselves and convey their experiences and interpretations, thus facilitating rapport and addressing

the research questions (Smith et aI., 2004). This approach to data collection allows participants to speak freely about their concerns, allowing the researcher to grasp their viewpoints better. A semi-structured interview was conducted with practitioners with experience supporting women to collect data relating to PND intervention and adherence techniques.

2.1 Participants

The subjects in the present study are experienced healthcare professionals that are members of PND support groups and forums or provide support for PND in the United Kingdom via social media pages (Facebook and Twitter). This includes therapists, GPs, health visitors and midwives for all subjects. All participants understood the aspects of the intervention that are important to women with PND. For this research, practitioners and professionals will mean the same. The interview questions were sent to professionals in advance to enable them to read through them before the actual interview took place.

2.2 Sample Size

In qualitative research, interviewing people until 'data saturation is reached is a common justification for sample size. The number of participants is vital, but a point of saturation is deemed necessary and should be prioritised (Abdul Majid et al., 2018; Dibley, 2011). However, there is no universally accepted mechanism for determining whether data saturation has occurred; thus, it's unclear what this means in reality (Francis et al., 2010). Table 1 presents the details of the type of participants, and six expert participants were considered a good sample size to make possible the in-depth analysis of each care while allowing some comparing and contrasting within the sample and some degree of generalisation. Participants in this study included four therapists and two midwives. Participants are given a pseudo-name for this study. All participants consented that all findings will be used to inform research and will be disseminated via relevant conferences and journals.

2.3 Analysis

We use thematic analysis to identify patterns and themes within the data inductively. This approach utilises five related steps familiarisation, coding, theme development, defining and reporting (Sleeman

Table 1. Participant information

Participants	Participants role	Type of Intervention delivered	Frequency of appointments	Duration of each appointment in hours
Philip	Academic psychologists specialise in mental health, particularly perinatal mental illness and young people's mental health.	Talking Therapy and Medication	3 months	1
Zain	Experienced antenatal and postnatal Depression therapist	Cognitive Behavioural Therapy and Psycho-Education	Varies	1
Sharon	Therapist	Cognitive Behavioural Therapy and Online support	Varies	1
Barbara	Psychotherapist and hypnotherapist with a speciality in the Psychology of Parenthood.	Psychoeducation, Interpersonal therapy, Hypnosis, Problem-solving therapy	Varies	1.5
Chloe	Mid-wife	Talking-Therapy	6 months	1
Sean	Mid-wife	Talking Therapy	12 months	1

et al., 2015). All interview data were reviewed during the process of familiarisation. Data were transcribed verbatim, and open codes were created for each interview and organised into categories. These categories were then grouped to develop themes. Smith and colleagues (2004) note that the analysis process is iterative. The analysis process involves continually going back and forth from the thematic organisation to the transcripts to check that the themes respect the participants' voices. The results are presented in the researcher's interpretation and linked to the research literature in the discussion section.

3. RESULTS

Themes emerged, which were continuously organised and reorganised within a developing thematic hierarchy. When words are omitted, dots will be used, "…" and identifying data has been changed to protect confidentiality.

3.1 Postnatal depressed women without treatment

Participants in this study revealed that they are aware that some women suffer from PND and remain without treatment. This was related to the stigma of PND, trust in getting the right help that they require or women wanting to get better without intervention. Below are some quotes from the participants articulating why some women remain without treatment.

"Yes, some clients suffer from PND remain without treatment, but that is not very useful. Some of them are just very protective and do not trust that they can get help"… Sharon
"I totally agree, some of these women might get better on their own without treatment, but that will take very long time"…Barbra

Sharon expressed that it is not very useful to remain without treatments. This may be seen to convey the importance of ensuring that women are aware of the negative impact of PND on themself, their infants and family as well as the benefits of receiving PND treatments. Later in the quote, she emphasised "protective" and "trust". These suggest that by not seeking help, some factors still create fear. There is a need to build a relationship and reassurance and create confidence in women when supporting them. Women are more likely to adhere to the treatment if they can engage with the facilitator and are highly optimistic about their relationships with their practitioners. Although Barbra stated that some women get better without treatment, she expressed concern that it takes a very long time. This use of "very" conveys emphasis and concern that it is not a good decision for women to remain without treatment.

3.2 Theme 1: Managing wellbeing independently

Despite the variability in the duration of appointments and frequency of facilitating intervention, five professionals revealed that appointments would initially start at one hour weekly. However, they expect mothers to be able to self-manage their wellbeing independently as the number of appointments increases. This theme looks at some relevant quotes articulating this aspect as significant.

"…It would initially start out, usually once a week and keeps stretching out so that they are learning how to manage their health on their own"…**Sharon**
"Someone might continue on a weekly basis; it really depends on what state of mind they are when they started. If they are feeling better and starting to feel strong and confident to manage their health, then we go to every two weeks"...**Barbara**
"I encourage women to have conversations with family and friends because that is what we do with them and it helps improve their quality of life"… **Chloe**

"Initially we have several interactions, it really depends on the support required and how they are able to help themselves" ...**Zain**

The repeated use of "manage" seemed to be an essential aspect for professionals because they expect depressed mothers to increase their level of self-management after a couple of appointments. When asked how often they think their clients complete prescribed home treatment between appointments, 83% of the professionals thought women would not practice homework between appointments. Some of the reasons why professionals think women do not practice at home are due to a lack of information on the benefits of doing homework and trust.

"Some participants do not practise homework because of trust. It takes a while for some clients to trust me, depending on their background. There may be circumstances in their life that may not allow them to trust anyone, so they are self-protective and do not have 100% trust in what you have asked them to do"... **Sharon**

"One of the things mums lack is the information, if she's been told to use medication, what are the benefits of medication, what might help, what might not help? We need this information in mum's pack, reliable websites, and doctor's surgery"...**Philip**

In contrast, one professional thinks that her clients tend to do their homework.

"I always teach my clients how to self-practice at home. They can use the techniques I teach them whenever they feel depressed and in most cases helps them to make changes"… **Barbra**

There appeared to be a variation in the professional's option of depressed women's motivation to do homework or practice techniques. However, the combination of "always", "teach", and "changes" conveys the quality effort Barbra puts into ensuring that her clients are motivated to adhere to treatments. This is similar to Philip's opinion in ensuring that the women are aware of the treatments' purpose and benefits.

3.3 Theme 2: Providing multiple choice intervention

All participants stated that they used multiple interventions. This finding was particularly striking because four professionals agreed that combining depends on the kind of symptoms, the state of mind or the level of Depression of clients. In addition, some said that they suggested other therapies as adjunct support, irrespective of what has been done with their primary therapy.

"I use Psycho-education and certainly use interpersonal therapy. All these are pieces of the whole pile; I don't conform to anyone modality. I kind of combine them. Some mums may sadly be engaging in drugs, alcohol or other forms of not particularly help activities, and therefore additional support will be needed" …**Barbra**

"One of the things mums lack is information. If she has been told that she has PND, what does that mean, what might cause it, what can help, what might not help, what are the benefits of medication, where can she seek help? These are the kind of information I share as additional to therapy" ...**Philip**

"Mums can get additional support they need from peer groups and other mums who have been through PND. I something talk about these groups as helpful" …**Zain**

"In addition to CBT sessions, I give additional time for one to support and one very good thing is that a lot of women feel confident opening up about their feelings during these support sessions"… Sharon

These findings are consistent with the opinion that women with PND have used multiple interventions to achieve a greater outcome (Omisade et al., 2018a). The most common reason for combining interventions was the perception that some women require multiple therapies to manage several PND symptoms and provide tailored support. However, combining several interventions for PND symptoms might overwhelm depressed women.

3.4 Theme 3: Noticeable effect of symptoms

The following short dialogue illustrates that for a few professionals, there is a relationship between PND symptoms that can impact intervention outcomes.

Researcher: Do you think that the soothing of one symptom would affect other symptoms?
Professional: *"Hmm… I think so. What often happens sometimes… is that the interaction between the mother and the baby, the mother and the partner, husband or other has been broken and this can affects the depressed mothers' state of mind. So if they can manage their relationship, then there will be rapid improvement and treatment effect on other symptoms."* ***Philip***
Professional: *"…once, I was supporting a patient that was really excited that she could see the effect of the treatment, she said was encouraged and was not moody for most of her day when that happens…"* ***Chloe***

For professionals, there is a belief that when one or two of the symptoms of Depression is alleviated, there is a high tendency for the treatment to affect other symptoms to be rapid.

3.5 Theme 4: Delivery (Flexible / Adjunct)

Professional suggests that a flexible delivery helps depressed women adhere to treatments. For some professionals, a flexible delivery option is offered due to a built relationship and rapport with the client.

"There are sometimes when I have flexible schedule for those clients that contact me to say that they are not able to meet up with our agreed time. I build a relationship with my clients and that rapport established is motivating to them to make changes and adhere"... **Barbara**
"In addition to CBT sessions, I give additional time for one to support and one very good thing is that a lot of women feel confident opening up about their feelings during these support sessions"… **Sharon**

Barbra's quote conveys that a flexible delivery choice and an arrangement are associated with increased adherence. For a few professionals, a flexible delivery supports depressed women's engagement and commitment to intervention instructions and increases morale. One of the reasons depressed women like flexible delivery is that it allows them to fit other commitments and activities around treatment sessions, such as the overwhelming responsibility of caring for an infant and other children. However, flexible delivery must operate to meet professionals' availability because there might be trouble adjusting to changing appointments, as explained:

"To offer flexibility can be tricky like you might be aware that there are longer waiting times for some of these treatment sessions",...**Zain**

One interpretation is that Zain suggests that we must be careful when offering flexibility as there might be other people that need to be attended to. This might be due to the limited availability of human resources, and time commitments are required from both the practitioner and women, who can be filled with demanding responsibilities. However, it is essential to note that her statement does not convey total avoidance.

"Some mums get additional support they need from peer groups and other mums who have been through PND. I something talk about these groups as helpful" …**Zain**
"I kind of combine them. Some mums may sadly be engaging in drugs, alcohol or other forms of not particularly helpful activities, and therefore additional support will be needed" …**Barbara**

3.6 Theme 5: Easy accessibility

When asked about issues they are concerned with about the delivery of PND treatment, four respondents explained that the delivery of intervention significantly impacts the outcome. In addition, the importance of accessibility is conveyed in the interview because they commented on how concerned they were about the cost and location of receiving treatment. For example, Philip's quote articulates more about the cost and location of receiving treatment:

"Receiving treatment for postnatal Depression is quite expensive for both the society and the depressed women. Some of these women have to travel long distances to get the appropriate support, and this can negatively impact their compliance"…**Philip**

The duration of treatment sessions was linked to the delivery of the intervention. However, two professionals reported concerns regarding the treatment session timing because he thinks it is inadequate to achieve the desired outcome.

"Although some clients required a longer period…unfortunately, there are time slots allocation for each session that does not seem to be enough but, I do not believe the duration of appointments should not hinder women from complying with their prescribed treatment"… **Zain**
"I have been supporting women with postnatal depression for so many and years, and time is one of the greatest challenges that affect the quality of treatment." **Barbra**

4. DISCUSSION

Participants often referred to self-management as one factor influencing more significant PND intervention outcomes. Some other participants found an association between self-management and the number of treatment sessions. This study found that participants wanted their clients to manage their wellbeing and independently use interventions after treatment sessions. This suggests that support is required for implementing and sustaining coping skills and behaviours needed to self-manage on an ongoing basis. This finding is in line with studies that demonstrate that self-management is increasingly recognised as necessary for the effective management of treatment conditions (Department of Health, 2006; Powers et al., 2017). As such, this study suggests that when women struggle to adhere to treatment, self-management plans/options should be discussed with them, especially when they seem to be struggling with interventions as prescribed.

This study confirmed the use of multiple interventions, as highlighted by previous studies (Osman et al., 2014; Rojas et al., 2007; Turner et al., 2010). A growing body of research also demonstrates that providing additional support to prescribed treatment could enhance achieving the desired outcome and sustained effect (Broom et al., 2015). Participants reported that they provided multiple interventions due to tailored support mother's circumstances and needs, which influenced positive treatment results. Some participants stated that additional support, such as attending support groups, was rewarding for both the women receiving support and those providing the support. Some other participants thought it was an opportunity to gain from someone who had ideally experienced and recovered from PND. The interview suggests that because of these evaluations, these participants deemed the provision of multiple interventions beneficial for adherence to PND interventions. Furthermore, the noticeable effect of symptoms can be linked to the findings that it was only after women got into a supportive

treatment relationship and improved their communication that they could disclose their distress to others (McCarthy & McMahon, 2008). This finding suggests that soothing one PND symptom lightens the effects of other symptoms.

The delivery of PND intervention emerged as an essential aspect of adhering to PND interventions, primarily meaning being able to provide adjunct or flexible delivery options. Participants suggested providing women with flexible or additional delivery. Particularly useful in the context of this research was that women are filled with overwhelming responsibilities. There was a record of high compliance in a multi-component intervention that was supported by regular phone calls from trained mental health workers (Rojas et al., 2007). In this study, depressed women were constantly reminded to take medications as prescribed in sessions (Rojas et al., 2007). Studies that provided facilities for infant care as an additional delivery option reported a higher level of compliance with treatment (Honey, Bennett, & Morgan, 2002; Reay et al., 2006). Indeed, participants in this study advised that flexible or adjunct intervention delivery option is helpful for improved treatment adherence.

Participants described easy accessibility as an important factor for adherence to the intervention. The duration of the treatment session and the cost of receiving treatment, including struggles with travelling, location and waiting times, were all highlighted as key to improved adherence. Studies have documented the inability of women to attend regularly scheduled appointments due to the treatment location (Goodman, 2009; O'Mahen et al., 2013). Home-based interventions have reported increased treatment outcomes with no drop-outs from therapy occurring (Chabrol et al., 2002). This is mainly due to the convenient location of receiving treatment. Studies have suggested that the burden of Depression is reflected in depression-related costs (Gerhards et al., 2010). Accessibility factors might be helpful to consider when providing intervention adherence measures. Technology-based interventions are an ideal alternative to increase local women's accessibility to professional help and improve maternal outcomes (Shefaly, et al., 2019).

4.1 Limitation

The sample comprised six participants, which may compromise the full representativeness of our results and not reflect all practitioners' opinions. However, there are no specific rules for sample size in qualitative inquiry. Sample size depends on what you want to know, the purpose of the inquiry, what's at stake, what will be helpful, what will have credibility, and what can be done with available resources (Good, et al., 2019; Marshall, et al., 2013). Further studies could include a more diverse sample.

5. CONCLUSION

This study provides a reasonable basis for exploring professionals' perceptions of techniques that could facilitate adherence to PND-prescribed treatments, informed by an empirically validated theory. An essential strategy for facilitating adherence to PND treatment and the sustained outcome could be the use of a combination of multiple intervention techniques. This study establishes some techniques and interventions professionals use to facilitate improved adherence to PND treatments. It also provides information on how the subjective norms informed the qualitative study.

Self-Management is an essential factor in facilitating adherence and improved PND treatment results. Multiple interventions were apparent as a method of achieving improved well-being for women with PND, so combining interventions should be encouraged for tailored treatment outcomes. When women notice the effect of treatment, it builds a positive attitude toward treatment adherence, so we suggest that techniques that make treatment effect symptoms noticeable be discussed or provided because it could help control adherence behaviour. Furthermore, one barrier to seeking treatment was linked to trust and fear. This could mean that women need to be confident that they are receiving the required care and can engage with treatment effectively. Finally, the requirement of easy accessibility is an essential factor that could facilitate a flexible, adjunct platform such as a mobile application

that will facilitate confidentiality, and privacy and encourage adherence. Therefore, we recommend easy accessibility and increased engagement with treatment techniques.

While this study is informative about the factor that can facilitate adherence to PND interventions, further studies such as this could yield a more complete and solid picture of practitioner view on factors that can facilitate adherence behaviour and the use of additional support for PND and perhaps a larger sample size.

6. DECLARATION OF INTEREST

Author disclosure

This study protocol describes the original study approach and is not under consideration by any other journal. All authors approved the protocol and this submission.

AVAILABILITY OF DATA AND MATERIAL

The datasets generated and/or analysed during the current study are available from the corresponding author upon reasonable request.

FUNDING

No funding was provided for this study

ACKNOWLEDGMENT

There are no acknowledgements for this research.

REFERENCES

Abdul Majid, M. A., Othman, M., Mohamad, S. F., & Abdul Halim Lim, S. (2018). Achieving data saturation: Evidence from a qualitative study of job satisfaction. [SMRJ]. *Social and Management Research Journal*, *15*(2), 65–77. doi:10.24191/smrj.v15i2.4972

Ajzen, I. (2011). The theory of planned behaviour: Reactions and reflections. *Psychology and Health.*

Broom, M. A., Ladley, A.S., Rhyne, E.A., Halloran, D. A. (2015) Feasibility and Perception of Using Text Messages as an Adjunct Therapy for Low-Income, Minority Mothers With Postnatal Depression. *JMIR Mental Health, 2*(10).

Chabrol, H., Teissedre, F., Saint-Jean, M., Teisseyre, N., Roge, B., & Mullet, E. (2002). Prevention and treatment of post-partum Depression: A controlled randomised study on women at risk. *Psychological Medicine*, *32*(6), 1039–1047. doi:10.1017/S0033291702006062 PMID:12214785

Christenesen, H., Griffiths, K., & Farrer, L. (2009). Adherence in Internet for Anxiety and Depression: Systematic review. [2]. *Journal of Medical Internet Research*, 11.

Cuijpers, P., Brannmark, J. G., & Van Straten, A. (2008). Psychological Treatment of Postnatal Depression: A meta-analysis. *Journal of Clinical Psychology*, *64*(1), 113–118. doi:10.1002/jclp.20432 PMID:18161036

De Graaf, L. E., Gerhards, S. A. H., Arntz, A., Riper, H., Metsemakers, J. F. M., Evers, S. M., Severens, J. L., Widdershoven, G., & Huibers, M. J. (2009). Clinical effectiveness of online computerised cognitive–behavioural therapy without support for Depression in primary care: Randomised trial. *The British Journal of Psychiatry*, *195*(1), 73–80. doi:10.1192/bjp.bp.108.054429 PMID:19567900

Dennis, C., Ravitz, P., Grigoriadis, S., Jovellanos, M., Hodnett, E., Ross, L., & Zupancic, J. (2012). The effect of telephone-based interpersonal psychotherapy for the treatment of postnatal Depression: Study protocol for a randomised controlled trial. *Trials*, *13*(1), 38. doi:10.1186/1745-6215-13-38 PMID:22515528

Dennis, C.-L., & Chung-Lee, L. (2006). Postpartum depression help-seeking barriers and maternal treatment preferences: A qualitative systematic review. *Birth (Berkeley, Calif.)*, *33*(4), 323–331. doi:10.1111/j.1523-536X.2006.00130.x PMID:17150072

Dibley, L. (2011). Analysing narrative data using McCormack's Lenses. *Nurse Researcher*, *18*(3), 13–19. doi:10.7748/nr2011.04.18.3.13.c8458 PMID:21560921

Forman, N. D. (2000). Postpartum Depression: Identification of women at risk. *British Journal of Obstetrics and Gynaecology*, *107*(10), 1210–1217. doi:10.1111/j.1471-0528.2000.tb11609.x PMID:11028570

Francis, J. J., Johnston, M., Robertson, C., Glidewell, L., Entwistle, V., Eccles, M. P., & Grimshaw, J. M. (2010). What is an adequate sample size? Operationalising data saturation for theory-based interview studies. *Psychology & Health*, *25*(10), 1229–1245. doi:10.1080/08870440903194015 PMID:20204937

Gerhards, S. A., De Graaf, L. E., Jacobs, L. E., Severens, J. L., Huibers, M. J., Arntz, A., Riper, H., Widdershoven, G., Metsemakers, J. F., & Evers, S. M. (2010). Economic evaluation of online computerised cognitive–behavioural therapy without support for Depression in primary care: Randomised trial. *The British Journal of Psychiatry*, *196*(4), 310–318. doi:10.1192/bjp.bp.109.065748 PMID:20357309

Gonzalez, J., & Willimas, J. (2005). Adherence to Mental Health Treatment in a primary care clinic. *The Journal of the American Board of Family Practice*, *18*(2), 87–96. doi:10.3122/jabfm.18.2.87 PMID:15798137

Good, A., Omisade, O., Ancient, C., & Andrikopoulou, E. (2019). The use of interactive tables in promoting wellbeing in specific user groups. In *International Conference on Human-Computer Interaction* (pp. 506-519). Springer. doi:10.1007/978-3-030-22015-0_39

Goodman, J. H. (2009). Women's attitudes, preferences, and perceived barriers to treatment for perinatal Depression. *Birth (Berkeley, Calif.)*, *36*(1), 60–69. doi:10.1111/j.1523-536X.2008.00296.x PMID:19278385

Goodman, J. H., & Tyer-Viola, L. (2010). Detection, treatment, and referral of perinatal Depression and anxiety by obstetrical providers. *Journal of Women's Health*, *19*(3), 477–490. doi:10.1089/jwh.2008.1352 PMID:20156110

Grace, S. L., Evindar, A., & Stewart, D. E. (2003). The effect of postpartum Depression on child cognitive development and behavior: A review and critical analysis of the literature. *Archives of Women's Mental Health*, *6*(4), 263–274. doi:10.1007/s00737-003-0024-6 PMID:14628179

Gubrium, J. F., & Holstein, J. A. (2001). *Handbook of interview research: Context and method*. Sage Publications. doi:10.4135/9781412973588

Henshaw, C. A. (2004). What do women think about treatments for PND. *Clinical Effectiveness in Nursing*, *8*, 170–175. doi:10.1016/j.cein.2005.03.003

Hoffbrand, S., Howard, L., & Crawley, H. (2001). Antidepressant Drug Treatment for Postnatal Depression. *Cochrane Database of Systematic Reviews*, 2. PMID:11406023

Honey, K. L., Bennett, P., & Morgan, M. (2002, November). A brief psycho-educational group intervention for postnatal Depression. *British Journal of Clinical Psychology*, *41*(4), 405–409. doi:10.1348/014466502760387515 PMID:12437794

Huang, L., Zhao, Y., Qiang, C., & Fan, B. (2018). Is cognitive behavioral therapy a better choice for women with postnatal Depression? A systematic review and meta-analysis. *PLoS One*, *13*(10), e0205243. doi:10.1371/journal.pone.0205243 PMID:30321198

Kaltenthaler, E., Parry, G., Beverley, C., & Ferriter, M. (2008). Computerised cognitive-behavioural therapy for Depression: Systematic review. *The British Journal of Psychiatry*, *193*(3), 181–184. doi:10.1192/bjp.bp.106.025981 PMID:18757972

Marshall, B., Cardon, P., Poddar, A., & Fontenot, R. (2013). Does sample size matter in qualitative research?: A review of qualitative interviews in IS research. *Journal of Computer Information Systems*, *54*(1), 11–22. doi:10.1080/08874417.2013.11645667

McCarthy, M., & McMahon, C. (2008). Acceptance and Experience of Treatment for PND in a Community Mental Health Setting. *Health Care for Women International*, *29*, 618–637. doi:10.1080/07399330802089172 PMID:18569047

Merry, S. N., Stasiak, K., Shepheard, M., Frampton, C., Fleming, T., & Lucassen, M. F. G. (2012). The effectiveness of SPARX, a computerised self help intervention for adolescents seeking help for Depression:randomised controlled non-inferiority trial. *BMJ (Clinical Research Ed.)*, *344*(apr18 3), 1–16. doi:10.1136/bmj.e2598 PMID:22517917

Michie, S., & Abbraham, C. (2004). Interventions to change health behaviours: Evidence-based or evidence inspired? *Psychology & Health*, *19*(1), 29–49. doi:10.1080/0887044031000141199

Milgrom, J., Danaher, B. G., Seeley, J. R., Holt, C. J., Holt, C., Ericksen, J., Tyler, M. S., Gau, J. M., & Gemmill, A. W. (2021). Internet and face-to-face cognitive behavioral therapy for postnatal Depression compared with treatment as usual: Randomised controlled trial of MumMoodBooster. *Journal of Medical Internet Research*, *23*(12), e17185. doi:10.2196/17185 PMID:34889742

Morrell, J. C. (2006). Review of interventions to prevent or treat PND. *Clinical Effectiveness in Nursing*, *952*, 135–161. doi:10.1016/j.cein.2006.11.006

O'Mahen, H. A., Richards, D. A., Woodford, J., & Wilkinson, E., McGinley. J., Taylor, R. S., Warren. (2013). Netmum, a phase II randomised controlled trial of guide Internet behavioural activation treatment for postpartum Depression. *Psychological Medicine*, 1–15. PMID:24148703

Omisade, O., Good, A., Fitch, T., & Briggs, J. (2018a). An analysis of factors affecting postnatal depression intervention adherence. In Data Analytics in Medicine: Concepts, Methodologies, Tools, and Applications (pp. 879-897). IGI Global.

Omisade, O., Good, A., Fitch, T., & Briggs, J. (2020). An analysis of factors affecting postnatal depression intervention adherence. In Data Analytics in Medicine: Concepts, Methodologies, Tools, and Applications (pp. 879-897). IGI Global.

Omisade, O. I., Good, A., & Fitch, T. (2018b). Association between Intervention Delivery Approach for Postnatal Depression and its Subsequent Adherence. *International Journal of Women's Health and Wellness*, *4*(1).

Osman, H., Saliba, M., Chaaya, M., & Naasan, G. (2014). Interventions to reduce postpartum stress in firsttime mothers: A randomised-controlled trial. *BMC Women's Health*, *14*(1), 125. doi:10.1186/1472-6874-14-125 PMID:25315167

Pampallona, S., Bollini, P., Tibaldi, G., Kupelnick, B., & Munizza, C. (2002). Patients adherence in the treatment of Depression. *The British Journal of Psychiatry*, *180*(2), 104–109. doi:10.1192/bjp.180.2.104 PMID:11823317

Parsons, C. E., Young, S. K., Rochat, T., Kringelbach, M. L., & Stein, A. (2012). Postnatal Depression and its effects on child development: A review of evidence from low-and middle-income countries. *British Medical Bulletin*, *101*(1), 57–79. doi:10.1093/bmb/ldr047 PMID:22130907

Powers, M. A., Bardsley, J., Cypress, M., Duker, P., Funnell, M. M., Fischl, A. H., Maryniuk, M. D., Siminerio, L., & Vivian, E. (2017). Diabetes self-management education and support in type 2 diabetes: A joint position statement of the American Diabetes Association, the American Association of Diabetes Educators, and the Academy of Nutrition and Dietetics. *The Diabetes Educator*, *43*(1), 40–53. doi:10.1177/0145721716689694 PMID:28118121

Proudfoot, J., Ryen, C., Everitt, B., Sharpio, D., Goldberg, D., Mnn, A., Tylee, A., Mark, I., & Gray, J. A. (2004). Clinical efficacy of computerised cognitive-behavioural therapy for anxiety and depression in primary care: Randomised controlled trial. *The British Journal of Psychiatry*, *185*(1), 46–54. doi:10.1192/bjp.185.1.46 PMID:15231555

Reay R, Fisher Y, Robertson M, Adams E, Owen C. (2006). Group interpersonal psychotherapy for postnatal Depression: a pilot study. *Archives of Women's Mental Health. 9*(1):31- 9.

Rojas G, Fritsch R, Solis J, Jadresic E, Castillo C, González M, Guajardo V, Lewis G, Peters TJ, Araya R. (2007) Treatment of postnatal Depression in low-income mothers in primary-care clinics in Santiago, Chile: a randomised controlled trial. *The Lancet*. *10;370*(9599),1629-1637.

Shorey, S., Chee, C. Y. I., Ng, E. D., Lau, Y., Dennis, C. L., & Chan, Y. H. (2019). Evaluation of a technology-based peer-support intervention program for preventing postnatal Depression (part 1): Randomised controlled trial. *Journal of Medical Internet Research*, *21*(8), e12410. doi:10.2196/12410 PMID:31469084

Sleeman, K. E., Koffman, J., Bristowe, K., Rumble, C., Burman, R., Leonard, S., & Hopkins, P. et al. (2015). 'It doesn't do the care for you': A qualitative study of health care professionals' perceptions of the benefits and harms of integrated care pathways for end of life care. *BMJ Open*, *5*(9), e008242. doi:10.1136/bmjopen-2015-008242 PMID:26369795

Smith JA, Osborn M. (2004). Interpretative phenomenological analysis. *Doing social psychology research, 1*,:229-254.

Thombs, B. D., Benedetti, A., Kloda, L. A., Levis, B., Riehm, K. E., Azar, M., Cuijpers, P., Gilbody, S., Ioannidis, J. P. A., McMillan, D., Patten, S. B., Shrier, I., Steele, R. J., Ziegelstein, R. C., Tonelli, M., Mitchell, N., Comeau, L., Schinazi, J., & Vigod, S. (2015). Diagnostic accuracy of the Edinburgh Postnatal Depression Scale [EPDS] for detecting major Depression in pregnant and postnatal women: Protocol for a systematic review and individual patient data meta-analyses. *BMJ Open*, *5*(10), 5. doi:10.1136/bmjopen-2015-009742 PMID:26486977

Torous, J., Friedman, R., & Keshavan, M. (2014). Smartphone ownership and interest in mobile applications to monitor symptoms of mental health condition. [1]. *JMIR mHealth and uHealth*, *2*(1), 2. doi:10.2196/mhealth.2994 PMID:25098314

Turner, K. M., Chew-Graham, C., Folkes, L., & Sharp, D. (2010). Women's experiences of health visitor delivered listening visits as a treatment for postnatal Depression: A qualitative study. *Patient Education and Counseling*, *78*(2), 234–239. doi:10.1016/j.pec.2009.05.022 PMID:19574015

Vandenberk, T., Lanssens, D., Storms, V., Thijs, I. M., Bamelis, L., Grieten, L., Gyselaers, W., Tang, E., & Luyten, P. (2019). Relationship between adherence to remote monitoring and patient characteristics: Observational study in women with pregnancy-induced hypertension. *JMIR mHealth and uHealth*, *7*(8), e12574. doi:10.2196/12574 PMID:31464190

Wan, J., Hu, B., Moore, P., & Ashford, R. (2008). Intelligent mobile computing to assist in the treatment of Depression. *Pervasive Computing and Application, IEEE*, *2*, 650–655. doi:10.1109/ICPCA.2008.4783691

Williams, S. L., Michie, S., Dale, J., Stallard, N., & French, D. P. (2015). The effect of a brief intervention to promote walking on the Theory of Planned Behavior construct: A cluster randomised controlled trial in general practice. *Patient Education and Counseling*, *98*(5), 651–659. Advance online publication. doi:10.1016/j.pec.2015.01.010 PMID:25677127

Yonkers, K. A., Lin, H., Howell, H. B., Heath, A. C., & Cohen, L. S. (2008). Pharmacological Treatment of Postnatal Women with New Onset Major Depressive Disorder: A Randomized Controlled Trial with Paroxetine. *The Journal of Clinical Psychiatry*, *69*(4), 659–665. doi:10.4088/JCP.v69n0420 PMID:18363420

Omobolanle Omisade is the Unit Coordinator and a Senior Lecturer in Human Computer Interaction at the School of Computing, University of Portsmouth. Omisade gained a PhD in 2018, MSc in Software Engineering in 2013 and BSc in Computing in 2010 with the School of Computing all at the University of Portsmouth. Omisade is responsible for teaching undergraduate, and taught postgraduate students User Experience Design and Interaction Design modules. Omisade works with other members of the supervisory team to support and guide PhD students with their research. Omisade has a keen interest in research activities in: Human-Computer Interaction, User Experience Design and Artificial intelligence, Mobile Health, Ubiquitous Computing, and tools that could facilitate behavioural change and in particular, help support wellbeing

Alice Good is a Senior Lecturer in Human Computer Interaction and Research Methods at the School of Computing, University of Portsmouth. She is also the course leader for the Masters of Research in Technology. Good's research interests lie in tools and applications that support mental health and wellbeing. Her expertise lies in user centered design and evaluation, including acceptance, user enjoyment, usability and accessibility. Good is a member of the University of Portsmouth Centre for Healthcare Modelling & Informatics and the University of the Portsmouth Ageing Network (UPAN). Her PhD looked at developing algorithms to analyse Web page accessibility (2008). Good also has a Masters in Human Centred Computer Systems. With 23 years of providing consultation in interface usability and accessibility, Good is also experienced in empirical research with the elderly and disabled. Good has been involved in several research projects relating to the design of mobile applications to support wellbeing, relating to different user groups including older people. Current research projects are looking at the effects of interactive tables facilitating social interaction on people with moderate to severe dementia and online shopping behaviour in older people.