2022-10-02

The Bidirectional Relationship Between Breastfeeding and Mental Health

Scarborough, J

10.12968/bjom.2022.30.10.554
British Journal of Midwifery
Mark Allen Healthcare

British Journal of Midwifery

The Bidirectional Relationship Between Breastfeeding and Mental Health

--Manuscript Draft--

Manuscript Number:	bjom.2022.0025R1
Full Title:	The Bidirectional Relationship Between Breastfeeding and Mental Health
Short Title:	Mental health and breastfeeding
Article Type:	Original research
Keywords:	Breastfeeding Thematic Analysis Attachment Support Information Mental health
Corresponding Author:	Alyson Norman, Ph.D, MSc, BSc University of Plymouth Plymouth, Devon UNITED KINGDOM
Corresponding Author Secondary Information:	
Corresponding Author's Institution:	University of Plymouth
Corresponding Author's Secondary Institution:	
First Author:	Jennifer Scarborough
First Author Secondary Information:	
Order of Authors:	Jennifer Scarborough
	Alyson Norman, Ph.D, MSc, BSc
	Leanne Cooper
Order of Authors Secondary Information:	
Abstract:	Background Breastfeeding rates in the UK are among the lowest in the world, despite the well-known benefits to maternal and infant health. The impact of breastfeeding on women's mental health may contribute to this. Aims To better understand the bi-directional relationship between breastfeeding and maternal mental health. Methods A total of 109 women aged 20-45 years who had attempted to breastfeed between 2018 and 2019 were recruited. A mixed-methods design encompassed two components; participants (n=109) completed an online questionnaire, of which 24 took part in telephone interviews, analysed using a thematic approach. Findings Five main themes were identified: pressure to breastfeed, provision of information and support, mixed impact on mental health, mental health impacting breastfeeding, and attachment. Conclusions

	Whilst a positive breastfeeding experience can lead to positive wellbeing, women highlighted a pressure to breastfeed which often led to negative wellbeing. Support and information are needed to promote mental health and longer breastfeeding duration, specifically for those mothers experiencing mental health difficulties.
Suggested Reviewers:	
Response to Reviewers:	Reviewer #1: Interesting that in your key words you don't include mental health - how will your paper be found in a search linked to this area? This was an oversight and has now been added – thank you CPD reflective questions *In our aim to increase inclusivity should you change pregnant mothers to 'pregnant mothers and people' and women to 'women and people'? Changed as suggested – thank you Introduction P 3 - 'Low breastfeeding rates reported in the UK led to UNICEF launching the Baby Friendly Hospital Initiative…' can you say when and if it had any impact. The date has been added and a sentence about the impact added to the end of the paragraph. P4 first line - if you say significance here it could imply statistically significant - if you mean this can you supply a statistic to demonstrate this or amend the word if you don't mean it in that way Changed to avoid confusion with statistical significance Data analysis 1.You haven't shared any of the quantitative data just open ended responses. It would be good to see how many responded to specific questions that were closed The responses to the closed questions have now been included You refer to appropriate and sufficient information - what do you mean by this - what is deemed sufficient and appropriate by one person may not be received that way by another so can you expand?This is a good point. A sentence has been added outlining that this is about providing a more balanced discussion around breastfeeding pros and cons. Can you state that they did not receive the standard or good level of support or that they reported/that they perceive this? Changed accordingly Reviewer 3 PDF commentsThe comments provided by reviewer 3 on the annotated PDF have been systematically addressed. Overall, the arguments outlined have been made more balanced, more recent references added and the rationale for the study has been re-written. 2.The rationale for using the particular mixed methods employed to answer this particular research question is unclear. This has now been explicitly noted at the end of the introduction section 3.The structure of this paper is very similar in parts (the Data Analysis section) to a B/F paper published in the April edition of BJM. If the authors of this paper are the same authors/study as the April paper, then an explicit mention of the earlier paper from the same, larger-scale study needs to be stated. The sample for this study is different but it is from the same paper. This was not previously noted as the previous paper had not yet been accepted for publication but this has now been added to the methods section. 4.The explanations of the methodology in the Methods and Data Analysis sections of this paper are not well linked to the research aim. These have now been updated in the methods section and the results section 5.The processes for developing the themes and findings using the CCA and Thematic Analysis processes are not clear. These have now been updated with a more systematic layout of the approach undertaken 6.There was no mention at all of the survey being a validated tool. It was not a validated tool – the details of the survey and how it was adapted from a previous study are included now. 7.It was surprising that there was no mention of any statistical analysis of the survey

	data. This has now been included within the results section 8.A table detailing the basic characteristics of the sample could be beneficial to readers. This has now been added 9.The findings and discussion are easy to follow, but reflect the significant heterogeneity of the sampling method used for this study, and also the very broad aim of the study to examine a wide spectrum of experiences for two distinct variables. The two stated variables are quite wide ranging: any type of B/F experience, and mental health as a concept. The levels of impact to mental health beyond what might be expected as part of average or normal p/n emotional and psychological challenges are not outlined. 10.One example of how the heterogeneity of the sample was revealed in the findings: - in the ' Provision of information and support' section of the findings, 3 of the 24 women reported a positive mental health support intervention. What is the context for this finding? What type of mental health interventions are being referred to? What specific mental health supports should have been offered or obtained for the 21 women that it is inferred did not receive them? This study specifically focused on understanding the lived experiences of a wide range of individuals who had breastfed and experienced changes in their mental health. As such we were not aiming to draw absolute conclusions but rather identify that the picture is more complex than a clear cut positive or negative relationship between mental health and breastfeeding. Some clarification has been added here to explain the situations described by participants. It is outside of the scope of this study to recommend appropriate or inappropriate intervention but the clarification helps to push the point that some intervention is needed to support mothers. 11.The discussion states that the study "...also examined the effect of pre-morbid maternal mental health on breastfeeding." That claim is not supported by the stated aim of the study, or the sampling method. If an objective had been to compare B/F experiences of healthy, low-risk women versus women with pre-existing MH issues, then a self-selection recruitment strategy was not indicated. The only stated inclusion criteria for the participation was any B/F in the preceding five years. Therefore, it was entirely possible that no women with a pre-existing MH diagnosis would self-select to join the study. This has now been removed and replaced with a broader discussion of the data. The data relating to pre-existing mental health issues has been added in the results section. 12.Crucially, the processes involved in the development of the final five themes needs to be better developed. The tables indicate verbatim quotes and the five themes. However, it is not clear from the findings section which themes arose from the initial deductive then subsequent inductive analysis. An appendix with a visual/table/figure outlining the initial coding, then the two levels of thematic review and 'map' of the analysis would greatly enhance the transparency of the mixed methodology employed by the researchers. An appendix has been added outline the stages of the analysis process and the different them constructions at each stage. A thematic map has also been added for the final analysis. 13.Finally, a significant number of the supporting references to this article are more than ten years old without any specific justification. It seems clear that a limitation to this paper that needs to be stated is that potentially some of the experiences reported by participants occurred as far back as 2013- which was 9 years ago. There have been many developments in the perinatal mental health speciality, as well as national and regional initiatives to enhance B/F support. The findings of this study are very difficult to generalise given the heterogeneity of the sample and the very broad variables being examined using this methodology. The references have been added to and updated throughout Reviewer 4

	1.The last line of the first paragraph needs revising, I believe UNICEF updated their standards in 2012 and the standards don't really address common difficulties. This has been changed and the point about not addressing common difficulties has been noted. 1.Elsewhere in the article it is said that a woman "who has bipolar" that sounds like it should be bipolar disorder or something of that vein. Changed accordingly – thank you
Additional Information:	
Question	**Response**
Please enter the word count of your manuscript **excluding references and tables**	4246

The Bidirectional Relationship Between

Breastfeeding and Mental Health

Authors: Jennifer Scarborough[1], Alyson Norman[2], Leanne Cooper[3]

1) Jennifer Scarborough: jennifer.scarborough@nhs.net, Perinatal Peer Support Lead, Livewell Southwest.
2) Alyson Norman: alyson.norman@plymouth.ac.uk, Associate Professor in Psychology, School of Psychology, University of Plymouth.
3) Leanne Cooper: leanne.cooper@uk.bnpparibas.com, Senior Funding Manager, BNP Paribas Leasing Solutions

1: Perinatal Mental Health Team, Livewell Southwest, Devon, UK

2: School of Psychology, University of Plymouth, Drake Circus, Devon, UK

3: BNP Paribas Leasing Solutions, St James Parade, Bristol, UK

Corresponding author: B229 Portland Square, Drake Circus, Plymouth, Pl4 8AA, 01752 584844, alyson.norman@plymouth.ac.uk, Associate Professor in Psychology

Funding statement: There was no funding associated with this reported study.

Acknowledgments: Thank you to all the participants who gave up their time to take part.

Abstract

Background: Breastfeeding rates in the UK are among the lowest in the world, despite the well-known benefits to maternal and infant health. The impact of breastfeeding on women's mental health may contribute to this.

Aims: To better understand the bi-directional relationship between breastfeeding and maternal mental health.

Methods: A total of 109 women aged 20-45 years who had attempted to breastfeed between 2018 and 2019 were recruited. A mixed-methods design encompassed two components; participants (n=109) completed an online questionnaire, of which 24 took part in telephone interviews, analysed using a thematic approach.

Findings: Five main themes were identified: pressure to breastfeed, provision of information and support, mixed impact on mental health, mental health impacting breastfeeding, and attachment.

Conclusions: Whilst a positive breastfeeding experience can lead to positive wellbeing, women highlighted a pressure to breastfeed which often led to negative wellbeing. Support and information are needed to promote mental health and longer breastfeeding duration, specifically for those mothers experiencing mental health difficulties.

Keywords

Breastfeeding / Thematic Analysis / Attachment / Support / Information / Mental Health

CPD Reflective Questions

How might professionals support pregnant mothers and people who have had a previous negative experience with breastfeeding?

How can professionals support women and people experiencing mental health difficulties to breastfeed?

Is there enough information provided to mothers and people about potential difficulties of breastfeeding?

How does the 'breast is best' message impact mothers and people, specifically those who are not able to breastfeed?

How can we promote the benefits of breastfeeding without making women and people feel pressured?

Introduction

Breastfeeding provides significant benefits for mothers, infants and society, yet breast feeding rates in the United Kingdom (UK) are among the lowest in the world (McAndrew et al. 2012). Typically, the number of women who initiate breastfeeding is 80%; however, the rate of exclusive breastfeeding within the UK is less than 50% by six weeks of age, and by six months drops to less than 1% (Renfrew et al. 2012; Nicholson & Hayward, 2021). The World Health Organisation (WHO) recommend breastfeeding takes place exclusively for the first six months, followed by breastfeeding alongside the introduction of solids up to and past two years old (WHO, 2022). Breast milk provides protection from infection and disease, whilst also supporting physical and cognitive development (Victoria et al. 2016). Maternal benefits include a lower risk for breast and ovarian cancer (Gonzalez-Jimenez et al. 2004; Ip et al. 2009). Low breastfeeding rates reported in the UK led to UNICEF launching the Baby Friendly Hospital Initiative (BFHI) in 1994, working in partnership with the World Health Organisation (WHO, 2012). The aim was to encourage facilities and health-care professionals (HCPs) providing maternal and neonatal services, to implement the 'Ten Steps to Successful Breastfeeding', a combination of policies and practices, to support breastfeeding. Revised in 2012, steps include discussing the importance and management of breastfeeding with pregnant women and their families and supporting mothers to initiate and maintain breastfeeding and manage common difficulties (WHO, 2012). While these steps were useful, they fail to address the common difficulties expressed by people who breastfeed (Keevash et al, 2018).

Emotional and psychological changes occurring in the immediate postnatal period are suggested to be the greatest changes a woman will experience in her lifetime (O'Hara & Wisner, 2014). Feelings of distress or disappointment about the delivery, anxiety about the baby, and perceived inability to cope are among many negative feelings post-delivery (O'Hara & Wisner, 2014). While for many these reactions are likely to be short-lived and transient, an important complication of pregnancy and childbirth is perinatal mental illness, with childbirth associated with the onset of depressive and anxiety disorders (O'Hara & Wisner, 2014; Keevash et al, 2018; Norman et al, 2022) and trauma-related symptoms (Baptie et al, 2021). While perinatal mental health difficulties occur in a small subset of individuals, they can cause extreme distress to the mother and her family, as well as costing an estimated cost of £8.1 billion each year to society in the UK (Bauer et al, 2014). Of this cost, only 28% relate to mother, with 72% relating to adverse impacts on the child (e.g. long-term physical and mental illness, reduced quality of life and reduced career prospects over a lifetime).Women experiencing perinatal mental health difficulties should have access to specialist advice, clear referral and management protocols in accordance with NICE guidelines (NICE, 2014), however service provision in the UK remains inadequate (Bauer et al. 2014; Baptie et al, 2021; Norman et al, 2022).

Such negative changes to maternal mental health can have a significant impact on women, specifically influencing a mother's ability to breastfeed, with research highlighting the association between maternal mental health and breast-feeding behaviour (Britton, 2007). Field et al. (2010) found that women experiencing antenatal depressive symptoms were less likely to initiate breastfeeding and experience earlier cessation compared to non-symptomatic mothers. While many factors can lead to early cessation that do not include perinatal mental health issues (Norman et al, 2022),

early cessation has been identified in other studies of postnatal depressive symptoms (Dennis & McQueen, 2007; Silva et al. 2017) and wider studies looking at factors influencing breastfeeding cessation (Keevash et al, 2018; Norman et al, 2022). Some studies have identified that longer breastfeeding duration was significantly associated with lower levels of anxiety and depression (Borra et al. 2015; Webber & Benedict, 2019) and further studies have identified breastfeeding as a possible long-term protective factor against later symptoms of depression in some women up to two years after delivery (Hahn-Holbrook et al. 2013).

The literature to date has identified a relationship between breastfeeding and mental health and that the impact of mental illness following birth can influence the choice of individuals to either continue or to cease breastfeeding. While literature has evidenced the protective impact of breastfeeding upon mental health (Krol & Grossman, 2018), other have outlined that breastfeeding can lead to negative impacts on maternal mental health, usually associated with feeding complications and lack of support (Norman et al, 2022). Therefore, the aim of the present study was to use a mixed-methods approach to better understand the relationship between mental health and breastfeeding, with specific focus on the possible bi-directional relationship that may exist. A secondary aim of the study was to use more qualitative methodological to better understand the factors that may influence the relationship mental health and breastfeeding. The rationale for employing a mixed-methods approach was to gather qualitative data about the experiences of breastfeeding people while collecting data from a broader sample to better understand how these experiences may be extrapolated to a wider population of breastfeeding people.

Method

Participants

Participants (n=109) were recruited through adverts on social media, specifically breastfeeding support sites on Facebook, inviting them to take part in a survey about their breastfeeding experience.

Inclusion Criteria

Participants were eligible to take part in the study if they had breastfed in the five years preceding data collection (from 2018 to 2019). This time limit was applied to ensure the experiences documented reflect recent breastfeeding practice and policy in the UK. The length of time that mothers had to have spent breastfeeding was not stipulated to allow for all women who have initiated breastfeeding to take part. The length of time individuals had breastfed for was recorded. The study focused on understanding lived experiences, so the authors were interested in capturing the experiences of all those who had breastfed, even for a very limited period of time.

The study received 109 responses (see table 1 for participant demographics) and the first 27 who expressed interest were selected for telephone interviews. The study interviewed 24 women (aged 20-45 years), with data collected between May 2018 and July 2019. The breastfeeding duration ranged from 10 days to over 25 months.

INSERT TABLE 1 HERE

Ethical approval was obtained from the [University name, Faculty of Health and Human Sciences] before recruitment and all ethical guidelines and data protection procedures were followed throughout the study.

Design and procedure

The project employed a mixed-methods research design (Hanson et al. 2005) to enable the researchers to employ the advantages of both models and ameliorating any potential disadvantages (Creswell et al. 2003; Johnson et al. 2007). The study aimed to use a predominantly qualitative approach but by using a survey, the authors were able to understand whether the rich data gained from the interviews could be extrapolated to a wider population. The questionnaire was self-designed and adapted from a survey used in a previous larger-scale study of breastfeeding behaviour (Norman et al, 2022). The survey was predominantly qualitative in structure but with the inclusion of a series of Likert scales to provide quantitative ratings. The current study used the aspects of the original survey used by Norman et al (2022) that related specifically to breastfeeding experiences and maternal mental health and included additional qualitative questions to gain a better understanding of mental health issues that affected the sample antenatally, perinatally and postnatally.

Stage 1 – Participants completed an online survey that consisted of seventeen closed questions, and additional open-ended questions, allowing the participants to elaborate on their responses (See Appendix 1). These focused on their experiences of breastfeeding and the impact of breastfeeding on their mental health. Those interested in taking part in a follow-up interview study were asked to provide an email address. At the end of the survey, participants were given the option to provide their email address if they wished to take part in the semi-structured interviews. Of the 27 participants who expressed an interest, 24 took part in the second phase.

Stage 2 – Semi-structured telephone interviews lasting approximately 30 minutes took place over the phone. The interview schedule asked basic demographic information as well as open-ended questions about feeding choices (knowledge, experience,

difficulties breastfeeding), any support received (support from family, support from health care professionals, pressure to feed a certain way) mental health (antenatal mental health issues, postnatal mental health issues, support they received) and their overall breastfeeding experience. Responses allowed the researcher to gain insight into mother's feelings surrounding breastfeeding, their experiences and to attribute meaning to their experiences giving a rich interview response. The interviews were recorded and transcription from the audio recordings verbatim. The transcribed interviews were then analysed using a mixed thematic approach, or framework analysis (Smith & Firth, 2011), using both a deductive and inductive approach to analysis following the processes outlined for both in Braun and Clark (2006).

Data analysis

The data from the online survey were analysed using a mixed-methods approach whereby quantitative questions were analysed using descriptive statistics and combined with qualitative data on related themes to understand the extent of difficulties and experiences across the survey population. The qualitative sections were then analysed using conventional content analysis (CCA). CCA was an appropriate approach to data analysis as although there has been previous literature outlining links between mental health and breastfeeding the multiple ways in which these two factors might be linked is still not fully understood. CCA is often used to describe phenomena with a limited research base (Hsieh & Shannon, 2005). The analysis process involved 1) reading the data repeatedly and writing exploratory comments, 2) re-reading the data to derive codes within the data that capture key thoughts and concepts, 3) organise codes into related categories and then meaningful clusters, which identified the master themes and 4) a validation analysis of the codes

was conducted by another member of the research team. The data from the qualitative sections of the survey were then triangulated with the results from the quantitative sections of the survey. Finally, the themes generated using CCA were presented in a table that was used as a framework for analysis in the subsequent interviews.

The interview data were analysed using a mixed thematic approach using deductive and inductive methods was conducted on the interview data. Initially, a form of deductive analysis was undertaken using the framework generated using the survey data. This process was undertaken initially to identify the similarities that existed between the survey data and the interview data. A further inductive analysis was subsequently applied to the data, in order to look for any new themes or codes that had not formed part of the original analysis. This process was undertaken after an initial deductive sweep to allow any changes to the original analysis to be made based on emerging constructs from the data or from changes to the original themes based on the richer interview data (See Appendix 2). Both processes of analysis were validity checked by an additional member of the research team and were conducted using the processes outlined by Braun and Clark (2006).

Results

Overall, 77 (70.6%) respondents to the questionnaire rated their breastfeeding experience as positive or very positive, while 20 (18.3%) rated their experience as negative or very negative (12 rated their experience as neutral). Data pertaining to mental health issues pre-pregnancy, antenatally and postnatally can be seen in table 1.

Detailed analysis of the free-text responses and interviews identified five main themes: pressure to breastfeed, provision of information and support, mixed impact on mental health, mental health impacting breastfeeding, and attachment (see Figure 1).

INSERT FIGURE 1 HERE

Pressure to breastfeed

Feeling pressure to breastfeed was experienced by 41 of the respondents in the survey. Pressure was reportedly driven internally by 13 respondents, by midwives and health visitors for 10 respondents and by either society (9 respondents) or friends and family (3 respondents). The remaining participants did not disclose the source of pressure.

Women in the survey and interviews discussed feeling pressure to breastfeed from multiple sources (Table 2), with the most common source being internally driven "*I didn't feel pressure from anyone but myself."* Pressure from health professionals was perceived by several mothers. One mother described feeling "*that pressure, like a threat*" from midwives, which may have had a negative impact on mental wellbeing. Societal pressure was described by some mothers who felt it was "*expected to breastfeed and made to feel as though you've failed as a parent if you don't or can't.* The message 'breast is best' was discussed by 11 mothers in the interviews and the negative impact it had on their mental wellbeing. Many reported feelings of guilt or failure to do the best for their baby if they did not breastfeed, due to the 'breast is best' message.

INSERT TABLE 2 here

Provision of information and support

Overall, women reported that information provided by health professionals was inadequate and insufficient (Table 3), specifically surrounding the difficulties of breastfeeding and what to expect. Difficulties with breastfeeding were experienced by 93 respondents, with the most common issue being poor latching (30 respondents)), followed by tongue tie (16 respondents), painful feeding (16 respondents), mastitis (6 respondents), low supply (5 respondents) thrush (2 respondents) and nipple trauma (2 respondents).

With information emphasising the benefits of breastfeeding, women were unprepared for difficulties such as pain or "*cracked nipples, the actual gritting your teeth when you've got mastitis"*. Women reported that not having this information left them lacking confidence, feeling upset and unprepared when they experienced those unexpected difficulties. Women reported wanting this information to help them feel more prepared.

Whilst some women reported getting more information from friends, family or other mothers, this information often focused on the negative aspects of breastfeeding or "*scaremongering."*

Participants highlighted a "*distinct lack of support"* from health professionals, which in some cases, meant women were unable to initiate breastfeeding or led to early cessation even when that "*was not our intention"*. Furthermore, in some cases, the lack of support from health professionals "*Played a major role"* in negative maternal wellbeing. It is important to acknowledge that not all women had negative experiences surrounding support from health professionals. Some women reported valuable support with "*different feeding positions and latch techniques."* Worryingly, women

highlighted "*"Minimal support for mental health"* from health professionals, with only three mothers reporting a positive experience with mental health intervention and support. In these instances, the mothers had reported feelings of depression and anxiety on the standard checklist given to UK mothers during routine home visits. Of the interview sample, 11 specifically referred to these checklists and many commented on having good experiences when they reported mental health issues. The three participants noted above all described situations where they had reported such symptoms and were told that "*someone who get back to you with support*". In all three instances, it took over six months (nine months in one instance) for them to receive a phone call offering support.

INSERT TABLE 3 here

Mixed impact on mental health

Mental health issues prior to pregnancy were experienced by 21 individuals in the survey. Of these, all continued to experience mental health issues during pregnancy along with an additional during pregnancy were experienced by 28 (25.7%) of respondents with the most common issue being comorbid depression and anxiety (11 respondents) with some respondents experiencing comorbidities across these conditions. Postnatally, 45 individuals reported mental health issues. This included all those who experienced mental health issues in pregnancy as well as a further 17 respondents. Postnatal mental health issues were reported by 9 individuals (37.5%). Furthermore, 49 (45%) of respondents to the questionnaire reported their deliveries as traumatic, with multiple reasons given such as emergency C-Section (23 respondents) and assisted delivery (9 respondents).

Sub-theme: Negative Impact: Three sub-themes emerged regarding breastfeeding having a negative impact on maternal mental health (Table 4). The first sub-theme was the impact of failure to breastfeed on mental health. Mothers reported feeling like "*a failure for giving up*" if they were unable, or struggled to, breastfeed. For some mothers, feeding was possible, but pain and/or frequency of feeding left them feeling "*tired and isolated* and "exhausted."

Some mothers reported feeling lonely and depressed, in one case, a mother began hallucinating and needed specialist care. Finally, mothers reported a negative impact on mental health, particularly "*horrendous guilt,"* when they ceased breastfeeding, particularly when they had stopped earlier than anticipated.

Sub-theme: Positive mental wellbeing: Many mothers felt that a positive breastfeeding experience had a positive impact on their mental wellbeing, describing their experiences as "*empowering*" and "*rewarding*."

INSERT TABLE 4 here

Mental Health Impacting Breastfeeding

Maternal mental illness can negatively impact on the mother's ability to breastfeed and her breastfeeding experience (Table 5). One mother reported that it was not the mental illness that impacted breastfeeding, but that anxiety led to poor eating behaviour as a way of coping, which in turn affected her milk supply and consequently, led to the early cessation of breastfeeding. In extreme cases, mothers require inpatient mental health intervention. One mother admitted with bipolar disorder highlighted how lack of support, clean equipment and milk storage facilities resulted in early cessation, despite wanting to continue breastfeeding.

INSERT TABLE 5 here

Attachment

Mothers reporting a positive breastfeeding experience discussed the closeness they felt with their infant and how breastfeeding helped with "*bonding with baby*" (Table 5). In contrast, those mothers reporting a negative breastfeeding experience felt breastfeeding was detrimental to establishing a bond with infant due to feeling "*resentful*" and in "*pain*."

Discussion

The study identified five themes associated with breastfeeding and maternal mental health; pressure to breastfeed, provision of information and support, a mixed impact on mental health, mental health impacting breastfeeding, and attachment. Women reported feeling pressure to breastfeed arising from multiple sources, including internally driven with mothers putting extraordinary pressure on themselves to breastfeed successfully. This, consequently, impacted their mental health as they continued to struggle with breastfeeding despite difficulties, feeling exhausted, and at times, anxious. Other mothers referred to feeling pressure from the 'breast is best' campaign (a campaign that promotes exclusive breastfeeding for the first six months). Mothers who struggled with low milk supply, pain, exhaustion and illness, noted the profound effect on their mental health. Feelings of guilt and failure were expressed by mothers unable to meet the expectations set by this campaign, with some describing a disconnect between the message of strongly encouraging breastfeeding but without sufficient support in place to facilitate successful breastfeeding.

The National Institute of Health and Clinical Excellence (NICE) guidelines state that health professionals should ensure pregnant women are offered breastfeeding

information and education, including the indicators of good attachment, positioning and successful feeding (NICE, 2014). The present study suggests this was not always the case with information from health professionals often being inadequate and limited, particularly surrounding breastfeeding difficulties. Appropriate information can promote a positive continuation of breastfeeding (Heidari et al. 2017), therefore women should be given sufficient information of not only the benefits of breastfeeding, but also the difficulties they may encounter. While what is regarded as appropriate and sufficient information is likely to vary across individuals, currently many studies have identified that breastfeeding mother and people have identified not receiving enough information about the difficulties of breastfeeding (Thurgood et al, 2022; Norman et al, 2022l Keevash et al, 2018). This may be a deliberate attempt by healthcare professionals to promote the benefits of breastfeeding, but psychologically this leaves people feeling unprepared for the challenges associated with breastfeeding. Therefore, a more honest approach is required to provide a more balanced perspective on breastfeeding.

Whilst some mothers reported a good level of support, others reported not receiving information that matched the standards recommended by NICE (2008). Guidelines state that healthcare professionals should have sufficient time, as a priority, to support a woman during initiation and continuation of breastfeeding (NICE, 2008). Inadequate support from health professionals meant many women were unable to initiate breastfeeding or experienced early cessation. In some cases, mothers felt that a lack of support had a negative impact on their mental health. This study supports the view that providing additional support may prevent or reduce the incidence of depression in new mothers, an identified risk factor for postnatal depression (Webber and Benedict, 2019).

Hahn-Holbrook et al. (2013) suggested that breastfeeding could protect some mothers from depressive symptoms and lead to a reduction in stress. While the reverse was true for some of our participants, a large proportion of mothers felt breastfeeding did have a positive effect on their mental health. Some of the women described their breastfeeding experience as empowering and rewarding, with one mother stating that breastfeeding helped with her postnatal depression.

Research suggests that breastfeeding facilitates a secure attachment between mother and infant, a bond essential for the infant to grow and thrive (Gibbs et al. 2018). For many mothers, breastfeeding is not solely about meeting the nutritional needs of the infant, it is about the transition to motherhood and their role as a 'good mother' (Marshall et al. 2007, Keevash et al. 2018). This study found that, for many women, breastfeeding strengthened the bond between mother and infant, with many reporting that it made them feel they were fulfilling their role as a 'good mother' for breastfeeding. However, failure to breastfeed, or early cessation, had a negative impact on mental health, with some mothers reporting feelings of guilt and failure regardless of the reason for early cessation. This in turn led to self-reported poor attachment relationships with their infants.

A small number in the study reported pre-existing poor mental health that was exacerbated during breastfeeding. Others reported postnatal onset of poor mental health, particularly surrounding mood disturbance and related poor nutrition, which resulted in difficulties breastfeeding and early cessation. Optimal maternal nutrition is necessary for effective breastfeeding (Lewallen et al. 2006). Some women suggested poor nutrition and hydration had a negative impact on milk supply which in turn, led to the use of formula. This highlights the importance of supporting mothers with their

mental health throughout their breastfeeding journey. Sadly, for many of our participants, this was also an area they felt was inadequate and ineffective.

Strengths and Limitations of the Study

Using a qualitative approach allowed women to openly discuss their breastfeeding experiences, increasing the understanding of the issues around breastfeeding and maternal mental health. The limitation of this approach is that data cannot necessarily be extrapolated to all breastfeeding women of different cultural backgrounds, socio-economic or educational backgrounds, as most participants identified as white British from middle class backgrounds with a high level of educational attainment. However, women from across the UK participated suggesting this study may reflect breastfeeding experiences across different health care trusts. It must also be noted that the rate of perinatal mental health issues in the survey and interviews were higher than the rates in the general population (35%, 37.5% and 20% (NHS England, 2022) respectively), suggesting the sample was not entirely representative of the population. However, this may suggest that rates of mental ill-health following pregnancy and birth are currently underreported.

The data from this study were based on the experiences of mothers from who had breastfed from 2013 to 2019. It is possible, therefore, that the current study does not reflect current practice in the UK. Due to the recent COVID-19 pandemic, studies have suggested that the has been very a decline in the availability of advice and support for breastfeeding mothers over the last two years (Thurgood et al, 2022; Brown & Shenker, 2020; Costantini et al, 2021; Vasquez-Vasquez et al, 2021).

Implications for practice and policy

This study has identified pressure among mothers to breastfeed which in some instances had a negative impact on their mental health. While it is important to promote the benefits of exclusive breastfeeding (Couto et al. 2020), it is important that this is done in a cautious and compassionate way that provides information and support to mothers without judgement. The findings from this study, and others suggest that while well-intentioned, campaigns such as 'Breast is Best' may not be promoting breastfeeding in the positive and inclusive way that is needed by mothers (Keevash et al. 2018, Srivastava et al. 2022). Instead, encouraging breastfeeding alongside honesty about the difficulties inherent with breastfeeding and compassion for those who struggle may prove more effective (Keevash et al. 2018).

Additionally, midwifery and health visiting services throughout the UK need to provide more tailored support and information to mothers attempting to initiate and continue breastfeeding (Norman et al. 2022; Srivastava et al. 2022; Keevash et al. 2018). It is also imperative that services provide better mental health support to mothers who are experiencing either pre-morbid mental health issues, or who start to develop difficulties as a result of breastfeeding. While good attachment can come from breastfeeding, this study clearly highlights that for individuals with poor mental health, a lack of perceived support can lead to apparent attachment difficulties.

Conclusion

This study aimed to investigate the bidirectional relationship between breast feeding and mental health. This study identified that mental health could have a positive or negative impact on breastfeeding behaviour, with poor pre-morbid mental health leading to difficulties with breastfeeding. Additionally, the study highlighted the impact of breastfeeding itself upon mental health both negatively, due to pressure, poor support and information, but also positively in terms of a sense of empowerment. This bi-directional relationship is crucial in understanding the impact of breastfeeding in infant attachment and provides direction for healthcare professionals in providing better support for breastfeeding mothers.

References

Baptie, G., Januario EM, Norman A. (2021). Empowered or powerless? Contributing factors for women's appraisal of traumatic and non-traumatic childbirth. BJM,

in press.

Bauer A, Parsonage M, Knapp, M, 2014. Costs of perinatal mental health problems. Centre for Mental Health & London School of Economics. Retrieved from https://www.nwcscnsenate.nhs.uk/files/3914/7030/1256/Costs_of_perinatal_mh. pdf

Borra C, Iacova M, Sevilla A. New evidence on breastfeeding and postpartum depression: The importance of understanding women's intentions. Maternal Child Health Journal. 2015;19(4):897-907.

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

Britton JR. Postpartum anxiety and breastfeeding. Journal of Reproductive Medicine. 2007;52(8): 689-695.

Brown A, Shenker N. Experiences of breastfeeding during COVID-19: Lessons for future practical and emotional support. Maternal & child nutrition. 2021 Jan;17(1):e13088.

Costantini C, Joyce A, Britez Y. Breastfeeding Experiences During the COVID-19 Lockdown in the United Kingdom: An Exploratory Study Into Maternal Opinions and Emotional States. Journal of Human Lactation. 2021 Nov;37(4):649-62.

Couto G, Dias V, Oliveira I. 'Benefits of exclusive breastfeeding: An integrative review'. Nursing Practice Today. 2020;7(4): 245-254. doi: 10.18502/npt.v7i4.4034.

Creswell JW. 2013. Qualitative inquiry and research design. SAGE, London.

Dennis CL, McQueen K. Does maternal postpartum depressive symptomatology influence infant feeding outcomes? Paediatrics. 2007;96: 590-594.

Field T, Diego M, Hernandez-Reif M, Figueiredo, B, Ezell S, Siblalingappa V. Depressed mothers and infants are more relaxed during breastfeeding versus bottle feeding interactions: brief report. Infant Behavior and Development. 2012;33: 241–244.

Gibbs BG, Forste R, Lybbert, E. Breastfeeding, Parenting, and Infant Attachment Behaviors. Maternal and Child Health Journal. 2018;22: 579-588. https://doi.org/10.1007/s10995-018-2427-z

Gonzalez-Jimenez E, Garcia PA, Aguilar MJ, Padilla CA, Alverez J. Breastfeeding and the prevention of breast cancer: a retrospective review of clinical histories. Journal of Clinical Nursing. 2004;23: 2397-403.

Hahn-Holbrook J, Haselton MG, Dunkel Schetter C, Glynn LM. Does breastfeeding offer protection against maternal depressive symptomatology?: A prospective study from pregnancy to 2 years after birth. Archives of women's mental health. 2013;16(5):411–422.

Hanson WE, Creswell, JW, Plano C, Vicki L, Petska KS, Creswell JD. Mixed Methods Research Designs in Counselling Psychology. Journal of counselling psychology. 2005; 52(2):224-235.

Heidari Z, Kohan S, Keshvari. Empowerment in breastfeeding as viewed by women: A qualitative study. Journal of Education and Health Promotion. 2017;33(6)

Johnson RB, Onwuegbuzie AJ, Turner LA. Towards a definition of mixed methods research. Journal of mixed methods research. 2007;1:112-133.

Keevash J, Norman A, Mortimer S. What influences women to continue or stop breastfeeding: A thematic analysis. BJM. 2018; October: doi.org/10.12968/bjom.2018.26.10.651.

Krol KM, Grossman T. Psychological effects of breastfeeding on children and mothers. Bundesgenundheitbl. 2018; 61: 977-985.

Lewallen L, Dick MJ, Flowers J, Powell W, Zickefoose K, Wall Y, Price Z. Breastfeeding Support and Early Cessation. Journal of Obstetric, Gynaecologic, and Neonatal Nursing. 2006; 35(2):166-172.

Marshall JL, Godfrey M, Renfrew MJ. Being a 'good mother': managing breastfeeding and merging identities. Social Science & Medicine. 2007;65(10):2147-2159.

McAndrew F, Thompson J, Fellows L, Large A, Speed M, Renfrew MJ. 2012 Infant Feeding Survey 2010. Leeds, UK: Health and Social Care Information Centre. Retrieved from https://sp.ukdataservice.ac.uk/doc/7281/mrdoc/pdf/7281_ifs-uk-2010_report.pdf

National Institute for Clinical Excellence (2008). Maternal and Child Nutrition. (PH11). Retrieved from https://www.nice.org.uk/guidance/PH11/chapter/4-Recommendations#breastfeeding-3.

National Institute for Clinical Excellence (2014). Antenatal and postnatal mental health: clinical management and service guidance (G192). Retrieved from https://www.nice.org.uk/guidance/cg192/chapter/1-Recommendations.

NHS England. (2022). Perinatal mental health. Accessed 13/07/22: https://www.england.nhs.uk/mental-health/perinatal/

Nicholson W, Hayward G. Breastfeeding Celebration Week – supporting mothers who breastfeed. 2021; UK Health Security Agency: https://ukhsa.blog.gov.uk/2021/06/25/breastfeeding-celebration-weeksupporting-mothers-who-breastfeed/

Norman A, Mortimer S, Baptie G, Perculievska N, Ferrario H. (2022). Breastfeeding experiences and support: A mixed-methods approach to identifying factors influencing breastfeeding behaviour. BJM. 2022; 30(4): 190-201.

O'Hara MW, Wisner KL. Perinatal mental illness: definition, description and aetiology. Clinical Obstetrics & Gynaecology. 2014;28(1):3-12.

Renfrew MJ, Pokhrel S, Quigley M, McCormick F, Fox-Rushby J, Dodds R, Williams A. Preventing disease and saving resources: the potential contribution of increasing breastfeeding rates in the UK. Report commissioned by Unicef, UK, Oct 2012.

Silva CS, Lima MC, Sequeira-de-Andrade L, Oliveira JS, Monteiro JS, Lima S, Santos R. Association Between Postpartum Depression and the Practice of Exclusive Breastfeeding in the First Three Months of Life. Journal of Paediatrics. 2016;93(4): 356-364.

Smith J, Firth J. Qualitative data analysis: the framework approach. Nurse researcher. 2011; 18(2): 52-62.

Srivastava K, Norman A, Ferrario H, Mason E, Mortimer S. A qualitative exploration of the Media's Influence on UK Women's views of Breastfeeding. BJM. 2022; 30(1); 10-18.

Thurgood SL, Clark-Carter D, Dean SE. An online questionnaire study investigating the impact of psychosocial factors on the duration of breastfeeding. Midwifery. 2022 Jun 1;109:103314.

Vazquez-Vazquez A, Dib S, Rougeaux E, Wells JC, Fewtrell MS. The impact of the Covid-19 lockdown on the experiences and feeding practices of new mothers in the UK: Preliminary data from the COVID-19 New Mum Study. Appetite. 2021 Jan 1;156:104985.

Victoria CG. Bahl R. Barros AJ. França GV. Horton S. Krasevec J. Murch S. Sankar MJ. Walker N. Rollins NC. Breastfeeding in the 21st century: epidemiology, mechanisms, and lifelong effect. The Lancet. 2016;387(10017), 475-490. https://doi: 10.1016/S0140-6736(15)01024-7.

Webber E, Benedict, B. Postpartum depression: A multidisciplinary approach to screening, management and breastfeeding support. Archives of Psychiatric Nursing. 2019;33(3): 284-289. https://doi.org/10.1016/j.apnu.2019.01.008

World Health Organisation. Health Topics/Breastfeeding. 2022. Geneva: World Health Organisation. Retrieved from https://www.who.int/health-topics/breastfeeding#tab=tab_2

World Health Organisation (WHO), UNICEF. Ten steps to successful breastfeeding. 2012. Geneva: World Health Organisation. Retrieved from https://www.who.int/nutrition/bfhi/ten-steps/en/

Appendix 1: Survey and interview structure

Survey Questions

1) Please state your age in years
2) Please state your gender
3) Please state your ethnicity
4) Please state your highest level of education
5) Please state your marital status
6) How many children do you have?
   - 1
   - 2
   - 3
   - 4+
7) How long did you breast feed for?
   - 0-1 week
   - 1-4 weeks
   - 1-3 months
   - 3-6 months
   - 6-12 months
   - 12+ months
   - 13-24 months
   - Over 2 years
8) Please discuss any issues which were encountered during breastfeeding (latching on, lack of support etc)
9) What support, guidance or advice surrounding breastfeeding did you receive prior to your child's birth?
10) Please outline if you ever experienced any pressure to breastfeed and is so the impact that this had on you.
11) Did you experience any mental health issues prior to pregnancy
    - No
    - Yes (if yes please specify)
12) Did you suffer from any mental health issues whilst pregnant?
    - No
    - Yes (If yes, please specify)
13) Please can you describe your birthing experience
14) Please discuss any ways in which you feel breastfeeding affected your mental health. This can be positive or negative effects
15) If you experienced negative effects on your mental health. Did you seek help?
    - No
    - Yes (If yes, please specify the support you sought)
16) Do you feel you received adequate support from health care professions for breast feeding and/or mental health issues?
    - Yes
    - No (If no, please specify)

17) Please discuss any ways in which stopping breastfeeding affected your mental health. This can be positive or negative effects
18) Please discuss your breastfeeding experience as a whole

Interview Schedule

Children

Can you tell me about your children?

(Age, Gender)

How long did you breast feed your child/ren for?

Feeding choices

What factors do you think influenced this decision?

What advice and guidance were you given prior to birth to help you to make a fully informed decision about how to feed your baby?

(Antenatal classes, alternative methods)

How well informed were you about the difficulties associated with breastfeeding, and what difficulties (if any) did you experience yourself?

(Pain, latching on, emotional strain, physical strain)

Support

How well supported did you feel in your choice of feeding method?

(partner, family, friends, midwives)

At any point was there a sense of pressure to feed your baby in a certain way?

(partner, family, midwives, society)

What additional support did you access for breastfeeding if any?

(midwives, health visitor, family, support groups)

Coping/mental health

How well did you cope with breastfeeding?

How much pressure, if any, did you put pressure on yourself to breastfeed?

Prior to pregnancy had you experienced any mental health difficulties?

During pregnancy did you experience any changes in your mental health?

What impact did any of your previous mental health issues, or mental health difficulties in pregnancy have on your feeding experience, if any?

In what ways did breastfeeding impact on your mental wellbeing, if at all?

Did you experience any changes to your mental health after birth?

(positive or negative)

What support did you receive for any mental health issues you experienced?

When you stopped breastfeeding, did you experience any changes in your mental wellbeing?

(positive or negative)

Overall, how would you describe your breastfeeding experience?

Appendix 2: Analysis process flow diagram and outcome at each stage

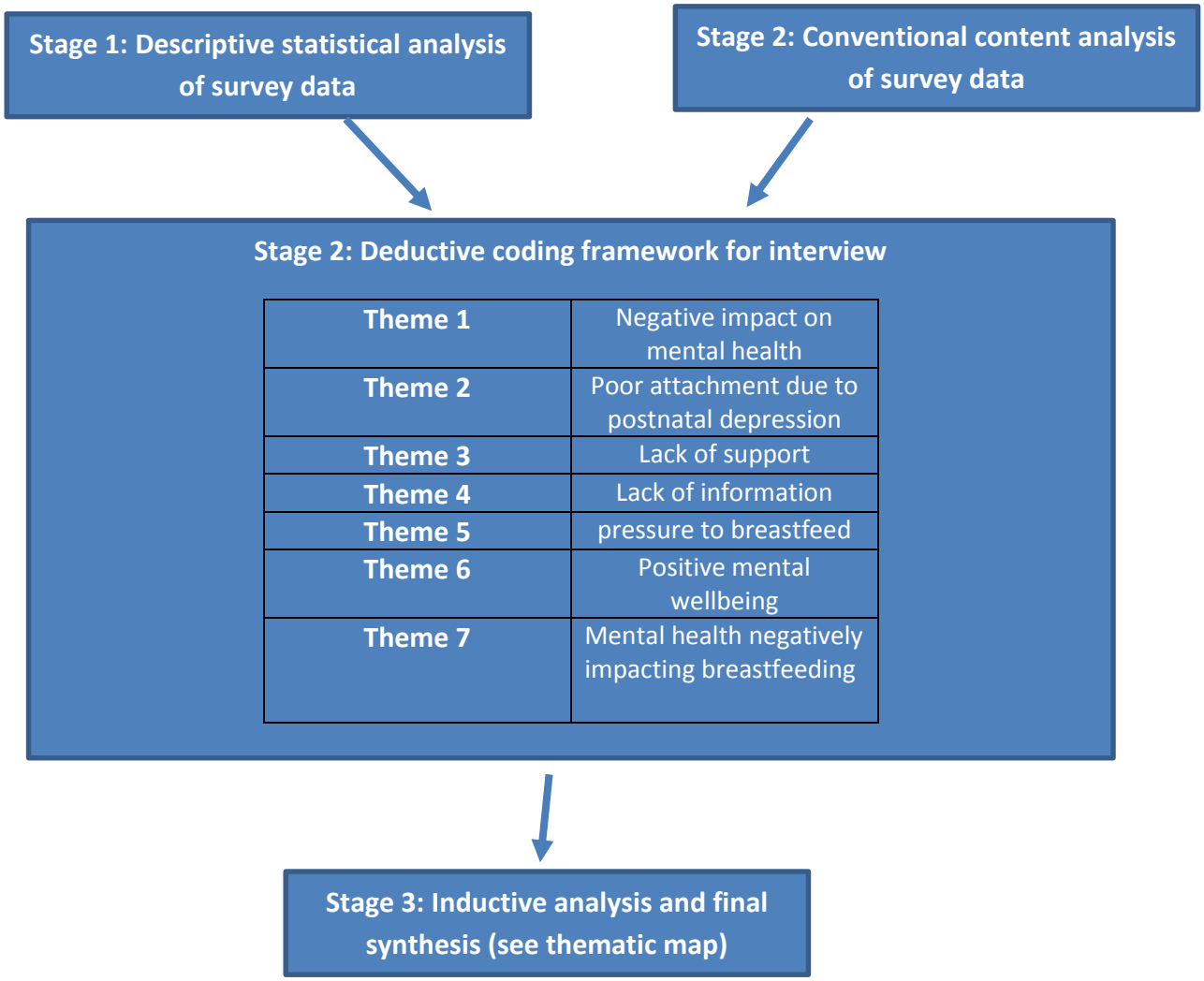

Figure 1: Thematic map of final analysisustration, photo)

Click here to download Figure (i.e. diagram, illustration, photo) figure1.jpg

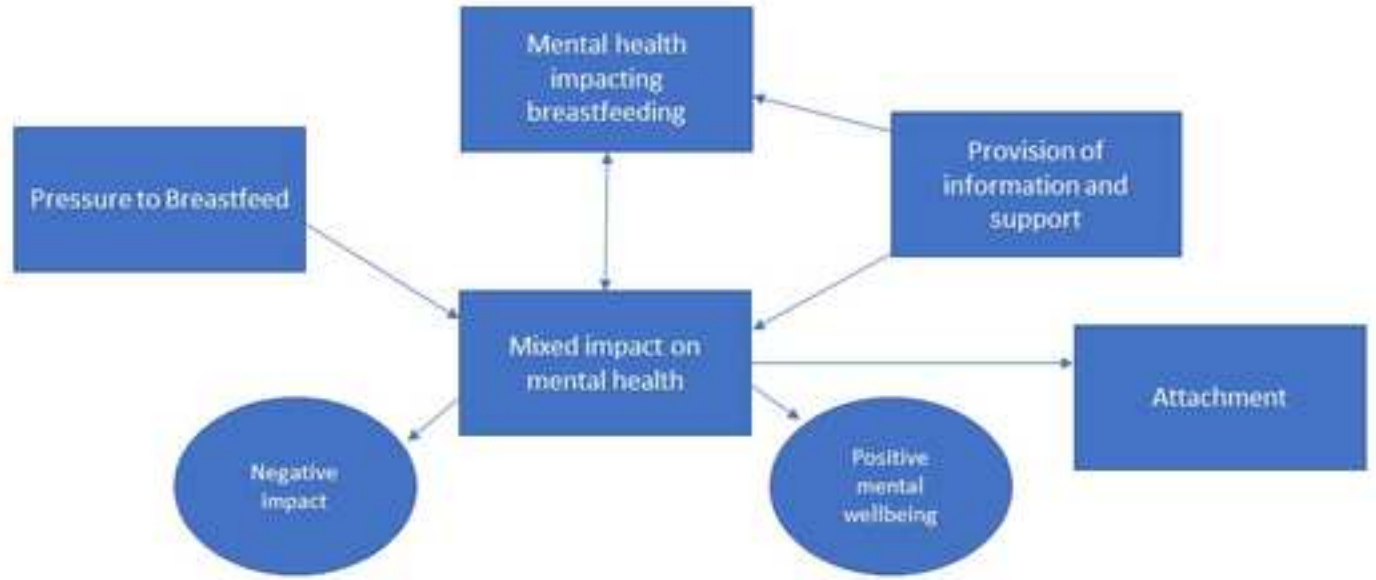

Table 1: Participant characteristics

Demographic information	Number of Participants
Age	
20-24	18
25-39	37
30-34	27
35-39	21
40-45	6
Mean age =	30.11 (sd = 5.58)
Gender	
Female	109
Ethnicity	
White British	106
White European	2
Black Caribbean	1
Level of education	
School leaver	31
Further education	28
Higher Education	34
Post graduate qualification	16
Marital status	
Single	11
Living with partner	29
Married	52
Divorced/separated	17
Breastfeeding Duration	
<1 week	0
1 week to 1 month	4
1 – 3 months	18
3-6 months	24
6-12 months	49
12-24 months	10
Over 2 years	4
Range = 10 days to 25 months	
Number of children	
1	64
2	39
3	4
4+	2
Pre-morbid mental health issues	

Comorbid anxiety and depression	7
Depression	3
Anxiety	4
Post-traumatic stress disorder	3
Emotionally unstable personality disorder	3
Bipolar disorder	1
Total	15*
Antenatal mental health issue	
Comorbid depression & Anxiety	11
Depression	8
Anxiety	8
Post-traumatic stress disorder	3
Emotionally unstable personality disorder	3
Bipolar disorder	1
Total	28*
Post-natal mental health issues	
Comorbid depression & Anxiety	13
Depression	9
Anxiety	10
Post-traumatic stress disorder	6
Emotionally unstable personality disorder	3
Bipolar disorder	1
Total	38

*Some respondents reported comorbid mental health issues

Table 2: Theme 1 Quotes

Theme 1: Pressure to Breastfeed	Quote
Internal pressure	*"I pressured myself to breastfeed the second because I hadn't with my first."* *"I pushed myself to be able to do that but yeh, probably more than I should have pushed myself."*
Pressure from healthcare Professionals	*"The stress and the fact that I felt like I was being threatened and there was that pressure and that obviously has a negative effect."* *"I was quite upset about it, and I'm quite a strong person really but I do remember sobbing my heart out after they left."*
Societal pressure/Breast is best campaign	*"Breast is best and it's the right thing to do. If you gave up it was frowned upon."* *"Pressure from society and the advice that breast is best from breast feeding advocates making me feel that if I didn't, I wasn't doing the best for my baby."*

Table 3: Theme 2 Quotes

Theme 2: Provision of Information and Support	Quote
Information provided by healthcare professionals	*"I had mastitis once and the pain is unbelievable, and no one prepares you for that."* *"I think that's why you get upset, that you can't do something because you've not been told so you think I'm not normal, this is not normal."* *"I think if you're prepared and you know about something, there's no surprise, no element of surprise and also you don't feel, I think sometimes if someone has told you, you already know that, you've been told, other people will be having this, it kind of makes you feel normal."*
Information provided by friends, family and others	*"it was mostly through all those stories you hear from other women that were saying it's so difficult, so painful and it's almost like an act of heroism to feed your own baby…. I felt like there were lots of scary stories about it"* *"it felt like scaremongering"*
Support from healthcare professionals	*"I didn't feel very supported. They would just grab my very painful boob and force in the baby's mouth telling me that's the way it should be done."* *"I'm saying yes but actually it wasn't the breastfeeding that affected my mental health, it was the lack of support and understanding that affected me."*
Mental health support from healthcare professionals	*"Mental health wise I also feel there isn't enough awareness outside of the specialist mental health teams about mental health issues and how their treatment can affect people."* *"Not nearly enough support with my PND."*

Table 4: Theme 3 Quotes

Theme 3: Mixed Impact on Mental Health	Quote
The impact of failure to breastfeed on mental health	*"I really wanted to and when I struggled, I felt I was failing."* *"The struggle made me feel like a failure."*
The impact of breastfeeding on mental health	*"felt trapped and pressured during first three months. Isolated and pinned to the sofa."* *"I managed a few months with my second child but had intense feelings of claustrophobia during feeding."* *"the sleep deprivation caused by breastfeeding caused me to hallucinate and the crisis team were sent out."*
The impact of ceasing breastfeeding on mental health	*"I stopped breastfeeding so that I could take anti-anxiety medication. I then felt guilty."* *"I felt such a horrendous guilt when I stopped, particularly because it was so soon after the birth and I felt I was neglecting my child. My mental health became a downward spiral from this point"*
Positive breastfeeding experience having a positive impact on mental health	*"how powerful it made me feel as a woman, that my body could give life and continue to nourish it too."* *"I really felt as though I had a super-power whilst doing it*

Table 5: Themes 4 & 5 Quotes

Theme 4: Mental Health Impacting Breastfeeding	**Quote**
Mental health negatively impacting ability to breastfeed	*"I was sectioned and basically told that my medication was being increased and the psychiatrist just basically laughed at me wanted to express sort of thing, so yeh, it was, and they had no procedures in place around expressing"* *"I was being handed equipment with dirt and dried on milk and being told it was sterile when it clearly wasn't"* *"There was nothing in place to support me with breast milk so that was the end of it"*
Theme 5: Attachment	**Quote**
Positive breastfeeding experience	*"I loved breastfeeding and the bond it has given me with my children. I have never felt so needed in my entire life"* *"Absolutely love breastfeeding and the relationship it builds with your baby. The bond is amazing"* *"Helped with bonding and claiming my role as mum"*
Negative breastfeeding experience	*"I became resentful of every feed because it was so, so painful. I did not bond with her until she was about 6 weeks"* *"Very painful, uncomfortable and felt I didn't bond with baby as quickly due to pressure to breastfeed and pain"*