Exploring the Emotional Impact of Breastfeeding Difficulties in the Context of Continued Breastfeeding.

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4th June 2018

Submitted in partial fulfilment of the degree of Doctorate in Clinical Psychology at the Division of Clinical Psychology, School of Psychology, University of Liverpool.

Acknowledgements

It has taken a multitude of people to make this research possible; people who have encouraged, supported, cajoled and pushed me across the finish line. There are too many to mention by name, but you know who you are.

I would like to thank all the women who gave up their time to be interviewed on this fascinating topic, to the peer supporters at Home-Start who supported recruitment, and the team at Bridgewater Foundation Trust NHS.

To Professor Pauline Slade, Dr Jo Harrold and Dr Vicky Fallon for your incredible support, honest feedback and encouragement in my darkest hours…… we have come a long way!

To Andy, Trish and Stewart who have been lifesavers in looking after our boys. To all my family and friends who have journeyed with me through the highs and lows of this course, answered my research queries at all times of the day and night, and been there for me, no matter what. I can never thank you enough for your unwavering belief in me. I love you all.

Finally, to my two gorgeous boys, Cameron and Jake, who can now have their mum back to normal. You are my inspiration every single day, and I am so proud of your understanding and maturity while I have been battling with the demands of this research. I love you both so much.

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Introduction: Thesis overview

Exclusive breastfeeding (EBF) is evidenced to be the best preventative intervention for supporting child health outcomes worldwide (Global breastfeeding collective, 2017). The World Health Organisation (WHO) recommend six-months of EBF (WHO, 2011) to reduce infant mortality and protect against diseases for both mother and baby (Victora et al., 2016). Despite the known physical health outcomes, exclusive breastfeeding rates remain low; only 40% of infants were exclusively breastfed up to six-months worldwide (Global breastfeeding collective, 2017) and EBF rates in the UK were below one-per-cent (McAndrew, Thompson, Fellows, Large, Speed & Renfrew, 2012).

It has been theorised that breastfeeding also has a positive association with the development of the bi-directional mother-infant relationship (Leung & Sauve, 2005; Scharfe, 2012). However, a review by Jansen, de Weerth and Riksen-Walraven (2008) concluded that there was not sufficient evidence to support this link. The first paper within this thesis, a systematic review of the literature, aimed to extend the work of Jansen et al., (2008) by using a detailed search strategy and including the important concept of maternal sensitivity. This paper explores the relationship between breastfeeding duration and three aspects of the mother-infant relationship, namely infant-attachment, maternal-bond, and maternal sensitivity.

Despite the many benefits of breastfeeding, many women experience breastfeeding difficulties, which have been named as a factor in breastfeeding cessation, and the experience of postnatal distress (Gerd, Bergman, Dahlgren, Roswall & Alm, 2012; Staehelin, Kurth, Schindler, Schmid & Stutz, 2013). Research has shown that women who initiated EBF before moving to formula feeding were at

greater risk of experiencing guilt (Fallon, Komninou, Bennett, Halford & Harrold, 2017) and feelings of failure (Lee, 2007). However, the emotional impact of breastfeeding difficulties on women who continue to breastfeed is not known. The second paper within this thesis is a qualitative study which aimed to explore the experiences of eight women who had breastfeeding difficulties whilst continuing to breastfeed. This utilised Interpretative Phenomenological Analysis (IPA) to provide a detailed account of their experiences, and to understand the factors which enabled them to continue.

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CHAPTER 1

SYSTEMATIC REVIEW

A systematic review of the relationship between breastfeeding duration and infant attachment, maternal bond and maternal sensitivity.

Manuscript prepared for submission to ‘Maternal and Child Nutrition’

Abstract

Background: The physical health benefits of breastfeeding are widely known. It has also been theorised that breastfeeding has an association with the mother-infant relationship. This systematic review of the literature aimed to examine the relationship between breastfeeding duration and aspects of the mother-infant relationship, namely attachment, the maternal-bond and maternal-sensitivity.

Method: A comprehensive search strategy was devised to identify peer reviewed literature using search terms including: ‘breastfeed*’, ‘infant attachment’, ‘maternal bond’, ‘maternal sensitivity’ and ‘duration’. Papers were screened, and included if they focussed on one of the named aspects of the mother-infant relationship and breastfeeding duration. The exclusion criteria were for studies of pre-term infants, expressed milk, and intervention studies. The quality of included papers was assessed, and narrative synthesis was used to analyse the data.

Results: Ten studies meeting the criteria were included in the review; five examining infant-attachment, two on maternal-bond and seven investigating maternal-sensitivity. The results on the relationship between breastfeeding duration and infant-attachment were mixed, although the majority found a positive association. Studies of maternal-bond indicated a link, although the evidence was limited. Research on maternal sensitivity highlighted a positive bi-directional relationship with breastfeeding duration. Studies using a continuous measurement of infant-attachment were more sensitive than those using dichotomous measures.

Conclusion: This review demonstrated a largely positive relationship between infant attachment, maternal bond, maternal sensitivity and breastfeeding duration. Findings were discussed in light of evidence favouring a continuous measure of attachment,

rather than the traditional categorisation. The implications of a bi-directional relationship highlighted a need for further research into pre-natal factors influencing maternal bond and sensitivity. Pre-natal interventions aimed at increasing maternal sensitivity may also impact positively on breastfeeding outcomes.

The agenda of breastfeeding has received international attention, with the World Health Organisation (WHO) recommending six-months of exclusive breastfeeding (EBF) for all infants (WHO, 2011). Breastfeeding has been reported to support optimal health outcomes for both mother and baby, reducing infant mortality and promoting long-term protection against diseases such as breast and ovarian cancer for women who breastfed (Victora et al., 2016). Breastfed infants were also more likely to have a higher intelligence quotient (IQ) extending into adulthood (Victora et al., 2016). The United Nations International Children's Emergency Fund (UNICEF) advocate that all women should be supported and encouraged to exclusively breastfeed for the first six-months of their baby's life. They developed the Baby-friendly Hospital Initiative, which sets out guidelines to support successful breastfeeding, including training for health care staff, information for women on the benefits of breastfeeding, and supporting women to breastfeed immediately after birth (WHO & UNICEF, 2009). Despite the benefits of breastfeeding, many women opt for alternative infant feeding methods, with 88% of babies being given milk other than breastmilk within the first six-months (McAndrew, Thompson, Fellows, Large, Speed, & Renfrew, 2012). The rate of EBF at six-months is below one per cent in the UK (McAndrew et al., 2012).

It has been widely hypothesised that breastfeeding also has a beneficial impact on three aspects of the mother-infant relationship namely, infant-attachment, maternal-bond, and maternal-sensitivity (Leung & Sauve, 2005; Scharfe, 2012). However, the role of breastfeeding duration in shaping the dyadic mother-infant relationship remains unclear. Given the recommendation of six-months EBF (WHO, 2011), the impact of breastfeeding duration is an important consideration. To explore

this relationship, the multifaceted nature of the mother-infant relationship must first be examined.

Attachment is a strong emotional bond from the infant to their caregiver. Infants are predisposed from birth to seek proximity to adults who will meet their survival needs (Bowlby, 1969; Landers & Sullivan, 2012). Infants innately use social behaviours such as crying, smiling and vocalising to increase this contact (Landers & Sullivan, 2012). The experience of care that the child receives impacts on how they make sense of the world and their expectations of how effectively their needs will be met (Ainsworth, Blehar, Waters & Wall,1978).

Secure attachment to a caregiver is crucial to the social and emotional development of an infant, extending into childhood and arguably adult life. It has been highlighted that early attachment experiences impact on the development of a child's social competence in relation to their peers. Insecure attachment is related to the development of behavioural difficulties in childhood and increased risk of emotional dysregulation (van der Voort, Juffer & Bakermans-Kranenbur, 2014). Infant attachment style has been linked to the quality of social and romantic relationships in adulthood (Hazan & Shaver, 1987), and to intergenerational parenting style (Cassiba, Coppola, Sette, Curci, & Constantini, 2017), highlighting the importance of positive parent-infant relationships.

The maternal bond has been described as the enduring emotional link which forms from the mother to her infant, and promotes care giving from mother to infant (Klaus & Kennell, 1976). There are many theories regarding the development of the maternal bond, including the importance of postpartum skin to skin contact, which has also been shown to have a positive relationship with breastfeeding duration (Moore, Anderson, Bergman, & Dowswell, 2012).

Ainsworth, Bell and Stayton (1974) defined maternal sensitivity as the ability of the mother to perceive the infant's signals accurately and to respond promptly and appropriately to their child. They found that the mothers of insecurely attached children were more likely to respond inappropriately to their infant's behaviour because they were unable or unwilling to interpret the meaning behind the behaviour.

Maternal sensitivity has been labelled as an effective predictor of attachment security, and Ainsworth (1973) theorised that a sensitive response from an adult to an infant, influences the quality of the attachment relationship. Infants are more likely to exhibit crying behaviours, appear anxious, and are less likely to show exploratory behaviours when mothers are slow to respond to their cues (Ainsworth et al., 1978).

UNICEF (1999) promotes breastfeeding as "laying the foundation for a caring and trusting relationship between mother and child" (p.1). One theory postulates that frequent skin to skin contact, increased maternal gaze and the release of oxytocin whilst breastfeeding increases the quality of interactions (Else-Quest, Hyde & Clark, 2003). Women who experience skin to skin contact with their infant immediately after birth are more likely to breastfeed, and to breastfeed for longer, than dyads where early skin to skin contact does not occur (Moore et al., 2012).

Some research suggests that the release of maternal oxytocin during breastfeeding enhances the mother-infant bond (Uvnas-Moberg, 2012; Zetterstrom, 1999). Theorising that the oxytocin released to regulate milk production is positively related to increased social behaviour and a reduction in anxiety in breastfeeding mothers (Feldman, Weller, Zagoory-Sharon, & Levine, 2007; Uvnas-Moberg, 2012). Mothers of exclusively breastfed infants are also reported to spend substantially

more time feeding their baby and engaging in emotional care than mothers who are exclusively formula feeding (Smith & Ellwood, 2011; Smith & Forrester, 2017).

Given the evidence for improved interactions, increased amount of time spent engaging in skin to skin contact, and the oxytocin releasing effect of suckling, it is important to consider the role of breastfeeding duration. Leading us to question whether there is a dose response relationship between breastfeeding and the development of infant attachment, maternal bond and maternal sensitivity.

Responsive feeding has been highlighted as best practice for breastfeeding mothers (UNICEF, 2016), which encourages mothers to respond to their baby's cues by offering the breast for food, comfort or reassurance. However, responsive feeding can also be achieved by mothers who formula feed their babies; through physical closeness and offering the bottle in response to infant cues, rather than feeding to a schedule (UNICEF, 2016). This suggests that maternal sensitivity can been developed regardless of infant feeding method.

Despite the evidence demonstrating a potential association between breastfeeding duration and infant-attachment, maternal-bond, and maternal sensitivity, a review by Jansen, de Weerth, and Riksen-Walraven (2008) concluded that the empirical evidence did not support a link between breastfeeding and the mother-infant relationship. Jansen et al., (2008) discusses the methodological limitations within the research area, however does not provide a thorough assessment of the quality of the six studies included within the review, which casts doubts on the validity of the conclusions.

It is argued that the scope of the search used by Jansen et al., (2008) was also limited, and therefore unlikely to have captured all the available research. Only three terms were used within the review (bond and/or attachment with breast feed*)

and no synonyms were used to expand on the search strategy. Recent research has highlighted the importance of maternal sensitivity on child outcomes (Leerkes, Blankson, & O'Brien, 2009), an area which was not included within this review. This oversight, means that some key findings are not discussed, such as results highlighting a positive relationship between breastfeeding and maternal sensitivity at three-months (Britton, Britton, & Gronwaldt, 2006).

Based on the limitations highlighted, another review is warranted, which would provide a more comprehensive understanding of the literature covered by Jansen et al., (2008), extending this by using a detailed search strategy and including the important concept of maternal sensitivity. Given the significance placed on the duration of EBF (WHO, 2011; WHO & UNICEF, 2009), it is also important to consider the impact of breastfeeding duration on outcomes in the infant-mother relationship, and the implications of exclusive or 'any' breastfeeding.

Aim

The aim of this review is to systematically examine the relevant literature to discern whether a relationship exists, in either direction, between breastfeeding duration and infant attachment, maternal bond and maternal sensitivity. This includes attending to the impact of the duration of EBF, when compared with 'any' breastfeeding duration, to inform policy, practice, and interventions that may improve the dyadic infant-mother relationship and breastfeeding.

Method

Eligibility Criteria

Studies were included within this systematic review if they focussed on infant attachment, maternal bond or maternal sensitivity, and the relationship between this and breastfeeding duration. To increase the range of data available, qualitative, quantitative and mixed methods studies were included within the search, provided they met the inclusion criteria (Table 1). The complete protocol for this systematic review was published online (see PROSPERO, reference 99032).

For the purposes of this review, breastfeeding duration was defined as an initiation of breastfeeding following the birth of the infant, which includes EBF as recommended by WHO (2011), and 'any' breastfeeding (supplemented with formula or expressed breast milk).

The operational definition of attachment used in this review was the emotional bond that an infant forms towards its caregiver (Bowlby, 1969); maternal bond was defined as the emotional link from mother to infant (Klaus & Kennell, 1976); maternal sensitivity was defined as an appropriate response from mother to infant, which is attuned to the needs of the infant (Meins et al., 2001).

Information Sources

The aim of this review was to systematically review all available published literature including qualitative and quantitative methodologies. The information sources were broad to ensure that the search was comprehensive, and allowed for inclusion of all relevant literature.

The search strategy was limited to the inception year of each database to 2018. Databases searched were MEDLINE (inception – March 2018), Cumulative Index to Nursing and Allied Health Literature (CINAHL) (inception – March 2018), PsycInfo (inception – March 2018), Scopus (inception – March 2018), and Web of science (inception- March 2018). The following search terms were used:

Term one: “attachment”, or “infant attachment”, or “maternal bond*”, or “bond*”, or “maternal sensitivity”,

And

Term two: “breastfeed*”, or “breast-feed*”, or “breast feed*”, or “lactation”,

And

Term three: “duration”, or “length”, or “time”, or “continuation”.

Boolean operators were used to combine the keywords and truncation applied to retrieve variants of the search terms. The reference list of each study included within the review was manually searched to gather any further articles that were not identified by the original search.

Table 1

Inclusion and Exclusion Criteria

Inclusion Criteria

- Studies of postnatal infant attachment/ maternal bond/ maternal sensitivity, and the relationship between this and breastfeeding duration.
- Articles which are available in English.
- Studies including women who initiated breastfeeding and who use direct breastfeeding, rather than expressed milk.
- Qualitative and quantitative studies.
- Studies using validated measure of attachment/ maternal bond/ maternal sensitivity (Quantitative only).
- Empirical papers where women/ infants and their relationship are the primary data source.
- Women aged 16 or over.

Exclusion Criteria

- Studies exploring breastfeeding positioning (latch).
- Pre-natal attachment (unless postnatal measures are also included).
- Studies including special samples (i.e. looked after children, birth trauma, pre-term infants, or those with additional health needs).
- Intervention, animal, or single case study designs.
- Studies exploring attachment between the infant and another family member.
- Studies exploring the perspective of health care professionals, hospital procedures or health promotion.

Table 1

Study Selection

Titles which were identified within the search strategy were screened and any duplicates or articles that were evidently unsuitable were excluded. The remaining abstracts were then read by two reviewers independently and excluded where appropriate (MH & VF). Any discrepancies were discussed and shared with a third reviewer if a consensus could not be reached (PS). The full text of any remaining

studies were then assessed by two reviewers to confirm inclusion in the systematic review (see Figure 1). A narrative synthesis was then used to analyse the results.

Data Extraction

For each study included in the review, information was collected on study design, participants (sample size and characteristics), measures taken, and results (Table 2).

Quality Assessment

The Newcastle-Ottawa Quality Assessment Scale (NOS; Wells et al., 2013) was then completed for each included cohort study (Appendix A). This is a quality assessment tool used for the evaluation of non-randomised studies and has been tested to be valid and reliable based on previous application within similar populations (Wells et al., 2013). An adapted version of the NOS was obtained (Appendix B) and used for cross-sectional design studies (Herzog et al., 2013).

The NOS allows for assessment of studies based on selection of the study participants, comparison of data and how outcomes were measured. Studies are allocated ‘stars’ based on their demonstration of meeting each criterion.

One of the items on the cohort tool; ‘selection of the non-exposed cohort’ on the NOS was excluded as it was not applicable to the studies being assessed. This meant that studies could receive a maximum of seven stars for the quality of each cohort study as can be seen in Table 3. Cross-sectional designs could receive a maximum of ten stars for quality (see Table 4).

To ensure the quality of this systematic review, a PRISMA checklist was completed (see Appendix C).

Results

A total of 1290 records were obtained via the electronic search, 578 duplicates were removed through merging the records, and a further 46 duplicates were removed by hand. An additional search was completed in March 2018, revealing an additional 31 papers, of which 17 duplicates were removed by hand. The remaining 680 articles were screened on title and abstract, with 29 full text records being assessed for eligibility. The most common reason for exclusion during the screening process was to remove animal studies (n=212). A further 19 studies were excluded on screening full text papers (see Figure 1). The most common exclusion reason was quantitative studies without a measure of attachment, maternal bond, or maternal sensitivity (n=6).

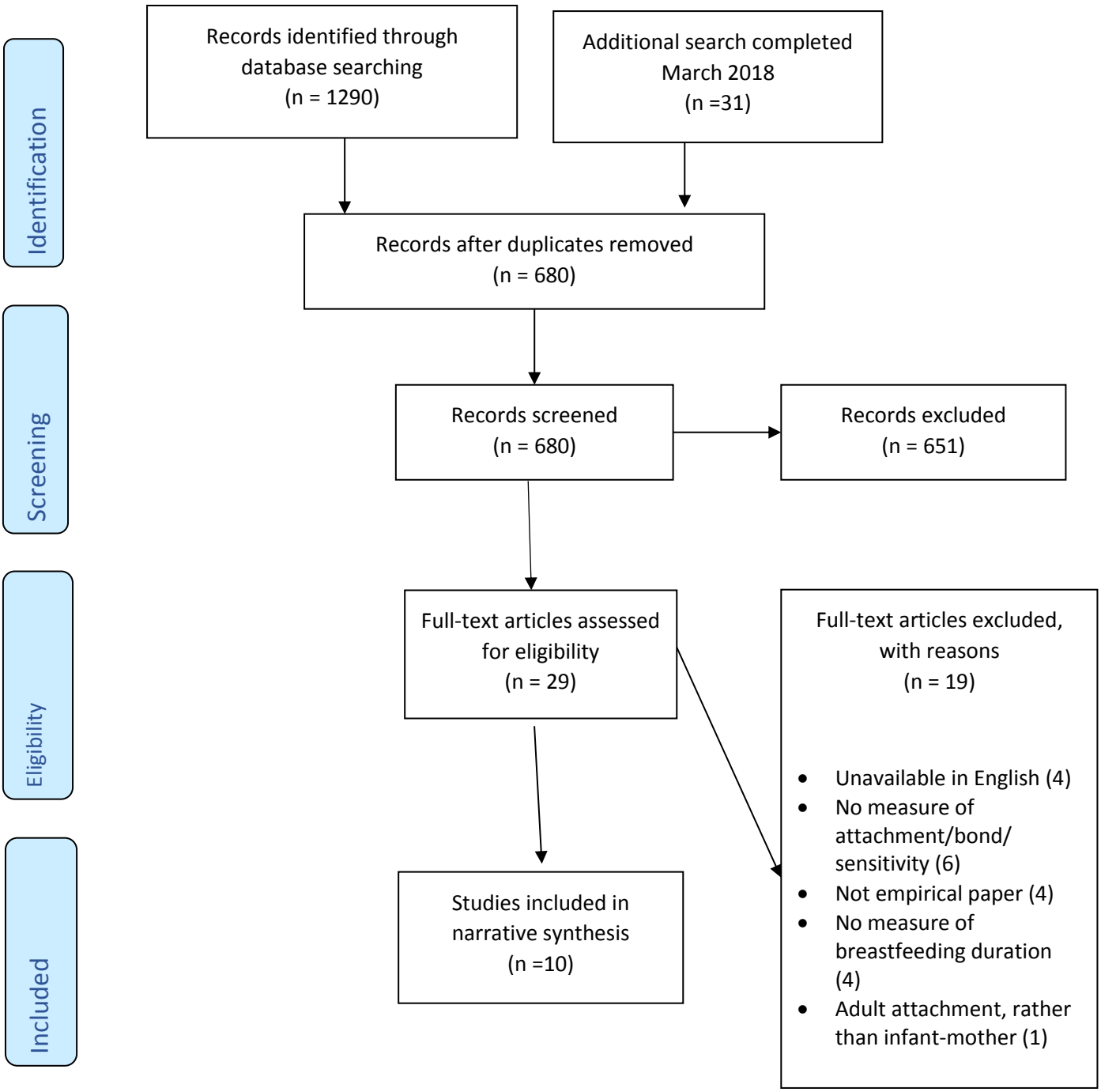

Figure 1. Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) diagram showing the flow of information through the systematic review.

Characteristics of Included Studies

The characteristics of the 10 studies included in this review are detailed in Table 2. Three of the included studies overlap with those reviewed by Jansen et al., (2008): Britton et al., (2006); Cernadas, Noceda, Barrera, Martinez, Garsd, (2003); Fergusson and Woodward (1999). These were selected due to the inclusion of breastfeeding duration, alongside measures of infant attachment, maternal sensitivity or maternal bond.

Table 2 highlights that the current review includes six studies from the USA, two from Europe, one from South America and one from New Zealand. Across the studies, a total of 6,576 participants were recruited for data collection. Three cross-sectional designs were included (Brandt, Andrews & Kvale 1998; Drake, 2005; Keller, Medved, & Armano, 2016), and seven cohort studies (Britton et al., 2006; Cernadas et al., 2003; Fergusson & Woodward, 1999; Jackson, 2016; Papp, 2013; Tharner et al., 2012; Weaver, Schofield, & Papp, 2017), five of which used existing data gathered as part of larger cohort studies (Fergusson & Woodward, 1999; Jackson, 2016; Papp, 2013; Tharner et al., 2012; Weaver et al., 2017). The attrition rate for cohort studies ranged from 0- 27%. The age of the child at the time of evaluation ranged from 28 hours from birth, to 18 years of age. However, seven of the included studies completed all follow-up measures before two years of age (Brandt et al., 1998; Britton et al., 2006; Cernadas et al., 2003; Drake, 2005; Jackson, 2016; Keller et al., 2016; Tharner et al., 2012). Breastfeeding duration was determined by self-report of the mother in all studies, with the exception of one (Fergusson & Woodward, 1999) who used data from medical records to evidence

breastfeeding duration. Most studies completed statistical analysis to reduce the bias of additional variables know to affect breastfeeding duration, maternal bond/sensitivity and attachment (Britton et al., 2006; Cernadas et al., 2003; Drake, 2005; Fergusson & Woodward, 1999; Jackson, 2016; Keller et al., 2016; Papp, 2013; Tharner et al., 2012; Weaver et al., 2017). These confounding variables included age, education and socioeconomic status of the mother.

Table 2

Study characteristics

Authors (year)	**Location**	**Study Design**	**Sample**	***n* at baseline**	**Measurement of attachment/ bond/ sensitivity**	**Age of infant/ child at Evaluation Moment**	**Control for confounders**	**Measurement of breastfeeding outcome.**	**Lost to follow-up (%)**
Britton et al., 2006	USA	Prospective non-randomised longitudinal cohort study.	Opportunity sampling for women attending prenatal health visits. All methods of infant feeding included.	174	Maternal sensitivity. Infant attachment Nursing Child Assessment Satellite Training Feeding scale (NCAST). Ainsworth Strange Situation Procedure (SSP)	NCAST at 3, 6, and 12 months. SSP at 12 months.	Maternal age, education, ethnicity, smoking, and employment status	Prospective. bf[a] outcome obtained via written self-report at 3, 6, 9 and 12 months.	13
Fergusson & Woodward, 1999	N.Z	Longitudinal study of a birth cohort. Interviews with parent/ child and quantitative scales.	Birth cohort (born in 1977). All methods of infant feeding included.	999	Parent- child relationship. 28- item inventory of Parent and Peer Attachment (IPPA) measured at age 15. Maternal care and overprotection subscales of the parental bonding instrument (PBI) which is retrospective- age 16.	Attachment and maternal sensitivity measures taken at age 15 and 16.	Maternal age, maternal education, socioeconomic status, parental circumstances, maternal smoking, family living standards, income, child demographics gender/ birthweight, gestational age at birth, child's birth order)	Retrospective measures at four months, and one-year, with data compared with medical records.	27 Reasons given.

Authors (year)	**Location**	**Study Design**	**Sample**	***n* at baseline**	**Measurement of attachment/ bond/ sensitivity**	**Age of infant/ child at Evaluation Moment**	**Control for confounders**	**Measurement of breastfeeding outcome.**	**Lost to follow-up (%)**
Jackson, 2016	USA	Data taken from the Early Childhood Longitudinal Study: Birth cohort (ECLS-B) children born in 2001	Recruitment of same sex twins using stratified sampling method of birth certificates registered in the USA in the year 2001. All methods of infant feeding included.	976	Toddler attachment. Toddler Attachment Scale TAS-45. which is a modified version of the Attachment Q sort (AQS) TAS 45 is an assessment tool	Measure of attachment taken at 2 years.	Household economic disadvantage, maternal education and genetic factors.	Prospective. bf outcome determined by mother self-report.	Not reported.
Tharner et al., 2012	N.L	Prospective cohort study. Questionnaires, observation in clinic, and genotyping.	Embedded within the Generation R study, investigating growth, development and health from foetal life into young adulthood. All methods of infant feeding included.	628	Attachment Maternal sensitivity Strange situation procedure to measure attachment. Maternal sensitive responsiveness assessed in lab using Ainsworth's rating scale. Genotyping for Oxytocin.	bf measures at 2 and 6 months. Attachment and maternal sensitivity at 14 months.	Child gender, delivery, birth weight, 5-minute apgar score, maternal age, prenatal family functioning, maternal depressive symptoms.	Prospective. bf duration determined by Postal questionnaire at 2 and 6 months. Feeding was also categorised into exclusive bf, exclusive bottle feeding and mixed.	Not reported.

Authors (year)	**Location**	**Study Design**	**Sample**	***n* at baseline**	**Measurement of attachment/ bond/ sensitivity**	**Age of infant/ child at Evaluation Moment**	**Control for confounders**	**Measurement of breastfeeding outcome.**	**Lost to follow-up (%)**
Weaver et al., 2017	USA	Cohort study, observational methods.	Part of a larger study. Recruited in 1991 shortly after child's birth. All methods of infant feeding included.	1364	Parental sensitivity Attachment Attachment Behaviour Qset Videotaped, blind coded observation of parental sensitivity.	Observation of parental sensitivity were obtained eight times between the child's birth and age 11. Attachment measured at 24 months.	Marital status, ethnicity, race, mother's years of education.	Prospective. bf duration determined by self-report of Mother. Interview with mother to determine bf duration five time points between 1 and 36 months	27 No reasons given
Cernadas et al., 2003	Argentina	Cohort observational study	Women enrolled at a maternity hospital between sept 1996 and January 1997. All methods of infant feeding included.	584	Mother-infant bond Observational scale of mother-infant bond. Scale created by the authors.	First observation was between 12 and 24 hours since birth and second observation was between 48 and 72 hours.	maternal age, parity, the number of prenatal visits, the presence or absence of disorders in pregnancy, whether the mother had taken a prenatal course, the number of children, type of delivery, birthweight, gender, Apgar score at 1 and 5 minutes, and maternal education.	Prospective. bf duration determined at hospital discharge, and via telephone interview with mother at two weeks, one month and then monthly to six months.	7.7

Authors (year)	**Location**	**Study Design**	**Sample**	***n* at baseline**	**Measurement of attachment/ bond/ sensitivity**	**Age of infant/ child at Evaluation Moment**	**Control for confounders**	**Measurement of breastfeeding outcome.**	**Lost to follow-up (%)**
Keller et al., 2016	Croatia	Observational, cross sectional study.	Recruitment of sample is not reported within the paper. All methods of infant feeding included.	303	Disorder of the mother-infant relationship International English Big-Five Mini-Markers (assessment of five dimensions of personality) Adapted version of the Postpartum Bonding Questionnaire (PBQ)	Under 2 years of age.	Factors known to impact on bf duration were controlled for; age, parity, delivery, mastitis, education.	Retrospective measures of bf outcome. Structured questionnaire-self-report.	N/A
Brandt et al., 1998	USA	Cross sectional design. Observational study.	Random sample of Latina women in third trimester of pregnancy. All methods of infant feeding included.	42	Infant-mother interaction (maternal sensitivity) Nursing Child Assessment Feeding Scale (NCAFS)	28- 90 hours (range)	No	Prospective. bf outcome measured at 6 weeks, by telephone interview.	N/A
Drake, 2005	USA	Cross sectional survey design. Internet survey data collection.	Convenience sample from paediatric clinic and internet advertising. All methods of infant feeding included.	200	The Maternal Infant Responsiveness Instrument (MIRI) Measure maternal sensitivity, satisfaction with life, self-esteem, infant feeding and demographics	Infant age 2-4 months (range)	Socio-demographics, and maternal characteristics (self-esteem and satisfaction with life)	Prospective. bf duration determined by questionnaire at one time point.	N/A

Authors (year)	**Location**	**Study Design**	**Sample**	***n* at baseline**	**Measurement of attachment/ bond/ sensitivity**	**Age of infant/ child at Evaluation Moment**	**Control for confounders**	**Measurement of breastfeeding outcome.**	**Lost to follow-up (%)**
Papp, 2013	USA	Longitudinal cohort study, observational methods.	Part of a larger cohort study of children born in 1991. Recruited using random sampling plan designed to represent the economic, educational and ethnic diversity of each research site. All methods of infant feeding included.	1306	Maternal sensitivity Semi-structured observations.	Interactions between mother and child observed at 6 and 15 months in the home environment and 24 and 36 months in the lab.	maternal depressive symptoms, support in the home environment (as measured by HOME tool) race, education, mothers age, marital status.	Prospective. Interview with mother to determine bf duration at 1-month, 6-months, 15-months, 24-months and 36-months.	Not reported

Table 2

[a] Breastfeeding abbreviated to bf within table.

Quality Assessment

The studies included within this review comprised of seven cohort studies and three cross-sectional study designs, which were assessed for quality using the Newcastle-Ottowa Scale for Cohort Designs, and adapted for cross-sectional studies. The results of quality assessment are shown in Tables 3 and 4.

Cohort Studies.

The quality assessment ratings for the seven cohort studies ranged from five to seven out of a possible seven, and were generally of a high standard based on the criteria.

Four of the cohort studies were assessed as providing a sample which was representative of the population under study. With samples designed to represent the economic, cultural or ethnic diversity of the research site (Fergusson & Woodward, 1999; Jackson, 2016; Papp, 2013; Weaver et al., 2017). Two studies did not give a detailed description of the cohort or comparison to the population (Britton et al., 2006; Cernadas, 2003), and one study used a selective group for their sample, although good reason was given for this (Tharner et al., 2012).

All seven cohort studies used statistical analysis to control for confounding variables that are known to affect the duration of breastfeeding. These included maternal age, socioeconomic status and level of maternal education.

Breastfeeding duration was recorded based on self-report alone in six of the cohort studies. However, Fergusson and Woodward (1999) used self-report alongside evidence from medical records to ascertain breastfeeding duration.

Follow up duration ranged from six-months to 18 years, and in all cases, this was an adequate time period for the outcomes to be evaluated. Three studies used a pre-existing data set, which meant that participants were only included in the study if they had complete data (Papp, 2013; Tharner et al., 2012; Weaver et al., 2017). Two studies had a small attrition rate (<15%), which is unlikely to introduce bias, one study did not report the number of participants who were lost to follow-up (Jackson, 2016) and one study had a higher rate of attrition (21%) however detailed reasons were provided for this (Fergusson & Woodward, 1999).

Cross-sectional studies.

The quality assessment of the three cross-sectional studies were rated between five and seven out of a possible ten using the adapted Newcastle-Ottawa Scale.

Two studies demonstrated a representative sample from the target population (Brandt et al., 1998; Drake, 2005), one study did not give enough description of the sampling strategy and population (Keller et al.,2016).

All three cross-sectional studies described and justified their sample size using power calculations, and all used validated tools to measure attachment, bond or sensitivity.

Two studies used statistical analysis to control for confounding variables, and gave detailed descriptions of the statistical tests used, along with confidence intervals and probability values (Drake, 2005; Keller et al., 2016). However, Brandt et al., (1998) do not give an appropriate level of description to ascertain the suitability of statistical tests, and confounders were not accounted for within analysis.

Table 3

Quality assessment of cohort studies

Author, year	**Selection (max 2 stars)**		**Comparability (max 2 stars)**	**Outcome (max 3 stars)**			**Total score (max 7 stars)**
	Representativeness of the cohort.	Ascertainment of exposure	Comparability of cohort on the basis of design or analysis	Assessment of outcome	Was follow-up long enough for outcomes to occur	Adequacy of follow-up of cohort	
Britton et al., 2006	-[b]	*[c]	**	*	*	*	6
Cernadas et al., 2003	-	*	**	*	*	*	6
Fergusson & Woodward, 1999	*	*	**	-	*	-	5
Jackson, 2016	*	-	**	*	*	-	5
Papp, 2013	*	*	**	*	*	*	7
Tharner et al., 2012	-	-	**	*	*	*	5
Weaver et al., 2017	*	*	**	*	*	*	7

Table 3

[a] Each dash represents that the criterion was not met within the study.

[b] Each asterisk represents that the criterion was met within the study.

Table 4

Quality assessment of cross-sectional studies

Author, year	**Selection (max 5 stars)**				**Comparability (max 2 stars)**	**Outcome (max 3 stars)**		**Total score (max 10 stars)**
	Representativeness of the sample.	Sample size	Non-respondents	Ascertainment of the exposure	Confounding factors are controlled.	Assessment of outcome	Statistical test	
Brandt et al., 1998	*[a]	*	*	**	-[b]	-	-	5
Drake, 2005	*	*	-	**	**	-	*	7
Keller et al., 2016	-	*	-	**	**	-	*	6

Table 4

[a] Each asterisk represents that the criterion was met within the study

[b] Each dash represents that the criterion was not met within the study.

Overall Outcomes

A summary of the overall outcomes for all included studies can be found in Table 5, including a description of the methodological strengths and limitations. A narrative synthesis approach was used rather than a meta-analysis due to the heterogeneity of the data, the variety of different outcomes being measured and the variability in timings of when measures were used. The results were synthesised and grouped together according to the outcome under investigation; infant attachment, maternal bond or maternal sensitivity. Information contained within tables was also grouped according to outcome, although a number of studies reported multiple outcomes. The reporting of multivariate analyses took precedence over bivariate analyses where available. Probability values and test statistics are reported wherever possible, however some studies did not report test statistics (Cernedas et al., 2003; Fergusson & Woodward, 1999).

Table 5

Overall outcomes and methodological comments

Authors, year	Infants continuing to be breastfed by time point (% where applicable)	Outcome of interest	Summary of findings	Methodological Comment
Britton et al., 2006	3 months: 61.6 6 months: 50.6 9 months: 37.5 12 months: 25	Attachment Maternal sensitivity	1. mothers who initiated bf[a] had higher sensitivity scores than those who did not (p<.001). Women who continued any bf to 3 months had higher sensitivity scores than those who ceased before 3 months (p<.001). The sensitivity scores of women who exclusively bf at 3 months were significantly higher than those who partially bf (p=.002) and those who had ceased bf (p<.001) 2. when dyads were grouped among the three major attachment categories, there was no difference in the proportion of women who initiated (F_2=.299; p=.742 or duration or exclusivity of bf (F_2=2.09; p=.128). 3. bf duration correlated with maternal sensitivity (r=0.39; p=.000) but not with attachment security (r=0.03; p=.75). 4. quality of the dyadic interaction as assessed by the NCAST[b] at 6 months did not differ for mothers who exclusively bottle fed, or mixed feeding (F_2=1.43; p=.24). 5. amongst mothers who initiated bf, mean sensitivity scores were higher for those who bf for 12 months compared with those who did not (p=.003). the mean scores were higher for those who bf exclusively for at least six months compared with those who did not (p=.001)	All raters were trained, two or more raters were used to check reliability, although the inter-rater reliability was not reported. Raters were blind to hypotheses and the relevance of feeding method to the study. Good reporting of demographics.

Authors, year	Infants continuing to be breastfed by time point (% where applicable)	Outcome of interest	Summary of findings	Methodological Comment
Fergusson & Woodward, 1999	Child not bf: 29.6 Child bf < 4 months 27.1 Child bf 4-7 months 19.4 Child bf for 8+ months 23.8	Perceived attachment to parents. Maternal care Maternal overprotection.	Multivariate analysis showed that the duration of bf was significantly associated with adolescent perceived maternal care ($p<0.01$) but was not related to perceived parental attachment ($p>0.10$) or maternal overprotection ($p>0.10$)	This is a large cohort studies, so has good sample size. A longitudinal approach allows for follow up. The measures used for psychosocial adjustment are reliable and valid. For the purposes of this review, the Inventory of Parent and Peer Attachment (IPPA) is looking at parents and does not differentiate between mother and father.
Jackson, 2016	Percentages not given. Males bf for 2.77 months (mean) (sd= 4.56) Females bf for 3.21 (mean) (sd= 4.61)	Infant attachment	Relative to their co-twin, twins who bf for longer durations are significantly more likely to exhibit secure attachment patterns ($b=0.03$; $p<0.01$) and significantly less likely to exhibit dependency ($b=-0.02$; $p<0.01$). Longer duration of breastfeeding was also associated with higher scores of attachment security ($b=1.12$; $p<0.01$) and lower scores of ambivalence ($b=0.085$; $p<0.01$). bf did not appear to influence avoidance. Results suggest a slightly stronger tendency toward secure attachment in females (OR+1.15; $p<0.01$) relative to males (OR=0.85; p not reported).	Unable to gather data on bf exclusivity due to variation between twins. Trained interviewers assisted by a computer rated the attachment. However, the paper does not address inter-rater reliability. Environmental and genetic confounding variables are considered within the analysis.

Authors, year	Infants continuing to be breastfed by time point (% where applicable)	Outcome of interest	Summary of findings	Methodological Comment
Tharner et al., 2012	Never (not initiated) 10 Initiated and ceased before second month <2 months 22 bf ceased between 2-6 months 36 bf continued for at least 6 months >6 months 31	Infant attachment Maternal sensitivity	Longer duration of bf was associated with more maternal sensitive responsiveness (B=0.11; p=0.02) as well as more attachment security (B=0.24; p=0.03 and less attachment disorganisation. The results were only significant when using continuous measures of attachment security rather than categorisation. Women who bf for >6 months were significantly more sensitive that those who bf for <2 months (p=0.05). Children bf for >6 months were more secure than infants who had never been bf (p=0.01 and infants who were bf for 2-6 months (p=0.05). Maternal sensitivity was not found to be related to attachment security Genotype- no interactional effect of oxytocin genotype and bf on maternal sensitive response, attachment security or attachment disorganisation (B=0.02; p=.76).	The nature of lab observations may lack in ecological validity. Homogenous population: white Dutch women- limits generalisability to low risk western populations. Large sample numbers. Strange Situation Procedure (SSP) is considered to be the gold standard in attachment measurements. All measures were coded by two trained coders.
Weaver et al., 2017	Never: 28.6 6 weeks: 50.3 6 months: 26.4 9 months:16.6 12 months: 9.7 18 months: 2.7 20 months: 1	Infant attachment Maternal sensitivity	Mothers who reported bf at 6 weeks were more sensitive during observation at 6 months (b=.85 SE= .02). Maternal sensitivity was significantly higher at 15 months for women who were still bf at 6 months. bf status at 6 week and 6 months predicted higher attachment security at 24 months. No evidence for attachment as a mediator between bf duration and sensitivity.	No data on inclusion or exclusion or recruitment. Measures used were shown to be reliable and valid. Coders were blind to family circumstances. 20% of tapes were randomly selected to measure intercoder reliability.

Authors, year	Infants continuing to be breastfed by time point (% where applicable)	Outcome of interest	Summary of findings	Methodological Comment
Cernadas et al., 2003	EBF[c] at hospital discharge 97 1 month 83 4 months 56 6 months 19	Maternal bond.	Very good mother infant bonding was significantly associated with duration of EBF and EBF at 6 months. Longer duration of bf was significantly associated with positive maternal attitudes toward bf, adequate family support, good mother-infant bonding, appropriate sucking technique and no nipple problems. Level of maternal education and duration of bf of previous child were significantly related to the current duration of EBF. Previous experience of bf was the most powerful predictive factor of EBF at 6 months.	Observational data, based on a scale created by the authors (lacks evidence of reliability or validity, although had been used by authors for 2 years prior to the study). Good description of how mother-infant bonding was evaluated. Score descriptors are all positive and there are no negative scores (e.g. Poor or inadequate.). Evaluations were made by two observers and compared for reliability. Investigators agreed on the meaning of each item and how the score was to be obtained. Breastfeeding in the recruitment hospital was mandatory, which may prevent generalisability to other hospital settings.
Keller et al., 2016	bf beyond six months: 61.1	Maternal bond	Spearman's Rank Correlation Coefficient revealed no significant relationship between any of the measures on the PBQ[d] and bf duration. In regression analysis, the 'anxiety about care' factor negatively predicted breastfeeding duration beyond the minimal 6-month recommendation (b=-0.25; *p*=0.009).	Power calculations reported, and internal reliability was assessed as high using the Cronbach alpha coefficients (0.75 and 0.88). PBQ is widely implemented and validated. Limited information given about recruitment, inclusion/ exclusion criteria and methodology. Full results for bf duration are excluded from the paper.

Authors, year	Infants continuing to be breastfed by time point (% where applicable)	Outcome of interest	Summary of findings	Methodological Comment
Brandt et al., 1998	6 weeks: 60	Maternal sensitivity.	Nursing Child Assessment Feeding Scale (NCAFS) scores for women continuing to bf at 6 weeks post-partum were significantly higher 28-90 hours after birth than were the scores of women who had switched to formula by 6 weeks ($t=2.43$; $p<0.05$). Higher scores consistent with greater attachment. Dyads who were still bf at 6 weeks were far more likely to interact positively and show consistent attachment behaviours.	Very short-term follow-up (6 weeks) Only assesses mother child interaction at <4 days. Small sample, lack of generalisability (all low-income Latina families, receiving medical aid). Home visits give ecological validity. Researcher rating NCAFS must achieve 90% accuracy during training, to increase reliability (Crohnbach's alpha= .86).
Drake, 2005	EBF at 6 weeks: 63	Maternal sensitivity	There was no difference detected in self-reported maternal sensitivity on the Maternal Infant Responsiveness Instrument (MIRI) scores ($t = .133$; $p = .894$) between women in this study who exclusively formula fed ($n = 34$) and those who exclusively breastfed ($n =109$). No significant differences in MIRI scores according to feeding group. Mothers who bf for at least 6 weeks did not rate any more maternal responsive behaviours than those who bottle fed.	Measures only taken at a single time point (no follow-up). self-report possibility of social desirability e.g. recording self as 'a good parent'. MIRI tested to be valid and reliable.

Authors, year	Infants continuing to be breastfed by time point (% where applicable)	Outcome of interest	Summary of findings	Methodological Comment
Papp, 2013	Never: 28 Ever bf: 72 bf at 6 months:27	Maternal sensitivity	mother child dyads who breastfed and breastfed longer showed relatively higher observed relationship quality and total HOME[e] scores at 6 months compared with those who did not bf or who bf for a shorter duration. (no mention of sig in this section.) current bf was positively associated with maternal sensitivity p=0.001 and child positivity p=0.022 but not reliably associated with child negativity. at level 2, covariates were introduced into the model. this analysis showed that bf was associated with increases in maternal sensitivity over time, accounting for demographic controls. This was significant p<0.05 when comparing those who never bf to those who did, and those who bf for less than 6 months and those who bf for over 6 months, significant at <0.05. When confounders were accounted for, bf was not associated with trajectories of observed child behaviour.	Within this paper, some details missing which would be of use for replication, such as the exact measures used and an overall list of demographics. However, this study is using the same data set as Weaver et al., 2017. Longitudinal study, looks at changes across time. Analyses for confounding variables and how this impacts on BF duration.

Table 5

[a] Breastfeeding abbreviated to bf within table.

[b] Nursing Child Assessment Satellite Training (NCAST).

[c] Exclusive breastfeeding (EBF).

[d] Postpartum Bonding Questionnaire (PBQ).

[e] Home Observation Measurement of the Environment (HOME)

The relationship between breastfeeding duration and infant attachment.

The relationship between attachment and breastfeeding duration was explored by five of the studies included within this review (Britton et al., 2006; Fergusson & Woodward, 1999; Jackson, 2016; Tharner et al., 2012; Weaver et al., 2017). The overall results were mixed, with three studies finding a positive association between breastfeeding duration and attachment (Fergusson & Woodward, 1999; Jackson, 2016; Weaver et al., 2017), one study finding no association (Britton et al., 2006) and one study reporting mixed findings (Tharner et al., 2012).

Britton et al., (2006) used the Ainsworth Strange Situation Procedure (SSP) to assess attachment, which is considered to be the gold standard of evaluating attachment (Farnfield, 2014). This prospective cohort study measured infant attachment at 12 months (n=174). Using linear and logistic regression models of multivariate analysis, they found no difference in the attachment of infants according to breastfeeding status; initiation ($X^{2=}$ .266; p=.876), duration ($F_{2=}$ .299; p=.742), or exclusivity of breastfeeding (F_2=2.09; p=.128).

Tharner et al., (2012) also used the SSP to assess attachment at 14 months, in a prospective cohort design including 628 infants and their mothers. A significant relationship was found between length of ‘any’ breastfeeding duration, attachment security (b=.24; CI= .02, .46; p=.03), and attachment disorganisation (b=-.20; CI=-.36, -.03; p=.02), after controlling for exclusivity. The results were significant when using continuous measures of attachment, however there was no significant

association when using attachment categories, rather than continuous measures, due to the lack of statistical power needed for this analysis, as noted by the authors.

They also found evidence of a dose-response relationship, with infants who were breastfed beyond six-months having a significantly more secure attachment relationship than infants who had never been breastfed (CI=0.00, 1.74; p=.01), and infants who had been breastfed two to six months (CI=0.00, 0.98; p=.05). Breastfeeding beyond six-months was also significantly associated with less disorganised attachment than infants who had never been breastfed (CI=-1.14, 0.00; p=.05) and children who had been breastfed for less than two-months (CI=-.86, 0.00; p=.05).

Jackson (2016) completed a cohort study of same-sex twins (n=976) with attachment measures taken at 24-months. The results highlighted that longer duration of 'any' breastfeeding was associated with higher levels of attachment security (b=.03; SE=.01; p<.01) lower dependency (b=-.02; SE=.01; p=<.01). Significant associations were also found between breastfeeding duration and specific attachment hotspots; comfortably cuddly (b=.02; SE=.01; p<.05), cooperative (b=.03; SE=.01;p=<.01), enjoys company (b=.02; SE=.01; p<.01), independence (b=.02; SE=.01; p<.01), seeking attention (b=-.02; SE.01; p<.01), upset by separation (b=-.02; SE=.01; p<.05), and demanding/angry (b=-.03; SE=.00; p<.03). Secure (b=1.12; SE=.05; p<.01) and ambivalent (b=.85; SE=.04; p<.01) attachment styles were also significantly associated with breastfeeding duration.

In a cohort study (n=1364) Weaver et al., (2017) found that breastfeeding status at six-weeks (b=.04; SE=.01p<.05) and six-months (b=.04; SE=.01; p<.05) was significantly predictive of attachment security using the Attachment Behaviour

Q-set , at 24 months, although they did not differentiate between EBF and ‘any’ breastfeeding.

Fergusson and Woodward (1999) offered an insight into the impact of breastfeeding duration on attachment beyond infancy and childhood, into adolescence. They measured perceived attachment towards parents at age 15, and multivariate analysis highlighted that ‘any’ breastfeeding duration was not significantly associated with perceived attachment ($p>0.10$). However, it could be argued that self-report perceived attachment may not be an accurate indication of attachment security. This study also looks at *parental* attachment, rather than simply focussing on the mother, however was still included in the review due to the measures of maternal sensitivity which were also utilised within this study.

The relationship between breastfeeding duration and maternal bond.

Two studies included measures of maternal bond (Cernadas et al., 2003; Keller et al., 2016). Cernadas et al., (2003) used a cohort design to measure the maternal bond on two occasions between 12 and 72 hours postnatal (n=584). Observations and evaluations were made by two independent observers and any discrepancies led to an additional observation by a third observer. Exclusive breastfeeding duration was measured up to six-months postnatal. They found that maternal bond rated as ‘very good’ was significantly associated with duration of exclusive breastfeeding ($p<0.05$). There was also a positive relationship between maternal bond and exclusive breastfeeding at six-months ($p<.001$).

A cross-sectional study measured the attachment of 303 infants up to the age of two years old, and defined breastfeeding as any breastmilk given, regardless of

exclusivity (Keller et al., 2016). Using binary logistic regression, they found no link between impaired bond, rejection and anger, or risk of abuse. However, they did find that the 'anxiety about care' dimension of the Postpartum Bonding Questionnaire (PBQ) was negatively associated with breastfeeding duration beyond six-months (b= -0.25; OR=.78;CI=.65 -.94; p=.009).

The relationship between breastfeeding duration and maternal-sensitivity.

Seven studies examined the relationship between breastfeeding duration and maternal sensitivity (Brandt et al, 1998; Britton et al., 2006; Drake, 2005; Fergusson & Woodward, 1999; Papp, 2013; Tharner et al., 2012; Weaver et al., 2017).

In a cohort study (n=1364) Weaver et al., (2017) reported that 'any' breastfeeding at six-weeks predicted increased maternal sensitivity at six-months (b=.64;SE=.02;p<.05) and that 'any' breastfeeding at six-months was positively related to maternal sensitivity at 15-months (b=.55; SE=.02; p<.05) compared to infants with a shorter breastfeeding duration or no breastfeeding. Papp (2013) used the same data set over a shorter follow-up period, and found that at six-months, 'any' breastfeeding and maternal sensitivity were positively correlated (b=.182; p<0.01) using hierarchical linear regression.

One study measured maternal sensitivity within the first 28-90 hours postpartum to explore how this impacted upon breastfeeding duration (Brandt et al., 1998). This cross-sectional study of 42 women, found that those with higher scores

of maternal sensitivity in this early period, were more likely to breastfeed for at least six-weeks, compared to those with lower sensitivity scores ($t=2.43$; $p<0.05$).

Britton et al., (2006) reported a positive relationship between 'any' breastfeeding at 12-months (OR=1.45;CI=1.09,1.91; p<.05), EBF at six-months (OR=1.89; CI=1.35,2.66; p<.001) and maternal sensitivity.

In a cross-sectional study (n=200), Drake (2005) found no significant difference in maternal sensitivity/ responsiveness between women who exclusively breastfed and those who exclusively formula fed ($t=.133$; $p=.894$). This study used two dichotomised groups (exclusive breastfeeding or exclusive bottle-feeding), thus does not account for mixed or partial feeding. Tharner et al., (2012) found a positive relationship between 'any' breastfeeding duration and maternal sensitivity, with a peak in maternal sensitivity measurable after six-months of breastfeeding duration ($B=0.11$; $p=0.02$).

Longer-term outcomes were reported by Fergusson & Woodward (1999), finding that higher levels of maternal care on a maternal sensitivity sub-scale were associated with breastfeeding duration, compared to those who were bottle-fed ($p<0.01$). These results were taken from a retrospective measure, and thus must be interpreted with caution.

Discussion

The health benefits of breastfeeding for at least six-months are well researched and widely accepted. However, less is known about the relationship between breastfeeding duration and infant attachment, maternal-bond and maternal sensitivity. The aim of this review was to discern if such a relationship exists, and how the duration of breastfeeding may affect this.

Breastfeeding duration and infant attachment

Five studies explored the relationship between breastfeeding duration and infant attachment (Britton et al., 2006; Fergusson & Woodward, 1999; Jackson, 2016; Tharner et al., 2012; Weaver et al., 2017), revealing mixed results. Three studies found a positive association between duration of 'any' breastfeeding and infant attachment (Jackson,2016; Tharner et al., 2012; Weaver et al., 2017) highlighting that infants who are breastfed for longer are more likely to have a secure attachment relationship with their caregiver. Britton et al., (2006) and Fergusson and Woodward (1999) found no relationship between 'any' breastfeeding duration and attachment.

These studies used a variety of methods to measure infant attachment; three of which used independent, blind assessment (Britton et al., 2006; Tharner et al., 2012; Weaver et al., 2017) to reduce the risk of bias and increase validity. Jackson, (2016) used trained observers to evaluate the outcomes, assisted by computer technology, whilst Fergusson and Woodward (1999) used self-report measures to record the perceived attachment of adolescents towards their parents. It could be

argued that the latter may not be an accurate indication of attachment security due to its reliance on self-report measures.

The findings may indicate that the positive association between breastfeeding duration and attachment is present within the first few years of life (Jackson, 2016; Tharner et al., 2012; Weaver et al., 2017), but that the positive effects have dissipated by adolescence (Fegusson & Woodward, 1999). However, the findings of Britton et al., (2006) do not support this theory. One explanation for these divergent findings may be due to the small sample size (n=174) when compared to the other studies. The authors acknowledge that the power was inadequate to detect subtle differences in attachment styles.

Another consideration raised by Tharner et al., (2012) is to question the continued appropriateness of a dichotomous measure of attachment. They highlighted that viewing attachment on a continuum, rather than simplistic categorisation is arguably a more ecologically valid way in which to perceive attachment, and more likely to show significant results. Britton et al., (2006) used categorical measures, which, when combined with a smaller sample size, may account for the findings. The age of the child at the time of attachment evaluation also varied between studies. Britton et al., (2006) assessed infants at the youngest age of 12-months, compared with Weaver et al., (2017) and Jackson (2016) at 24-months, or Tharner et al., (2012) at 14-months. It could be argued that the age of the child at the time of assessment could impact on the findings. Britton et al., (2006) suggest that a self-selecting sample is a limitation of their study, and may have attracted confident and competent parents to participate.

Breastfeeding duration and maternal bond

The first study exploring the association between breastfeeding duration and maternal bond, highlighted the potential for a bi-directional relationship (Cernadas et al., 2003). They measured maternal bond within the first 72-hours after birth, and reviewed the association between this and breastfeeding duration up to six-months. The findings revealed a significant relationship between early maternal bond and duration of EBF up to six-months. Cernadas et al., (2003) used two independent observers to rate interactions and these were compared to ensure inter-rater reliability. The findings highlight that a stronger maternal bond in the immediate period after birth is associated with continuous breastfeeding to six-months. This may indicate that women who are intrinsically more likely to bond with their babies are also more likely to breastfeed for longer possibly due to pre-natal personality factors, although birth experiences, support network and other factors may all influence this dynamic. This idea is supported by Brandt et al., (1998) who similarly found that the maternal sensitivity scores of women in the first 90-hours postnatally were higher for those who would continue to breastfeed for longer, indicating that pre-natal factors may be important.

Keller et al., (2016) also studied maternal bond, and found that only the ‘anxiety about care’ dimension of the PBQ showed a significant negative association with ‘any’ breastfeeding duration beyond six-months. However, these findings must be interpreted with caution as the retrospective nature of these self-report measures may have introduced recall bias.

Breastfeeding duration and maternal sensitivity

The importance of maternal sensitivity on child development outcomes has been researched for many years (Ainsworth et al., 1974; Leerkes et al., 2009) This review found a clear positive relationship between breastfeeding duration and maternal sensitivity in six out of the seven studies measuring this variable (Brandt et al., 1998; Britton et al., 2006; Fergusson & Woodward, 1999; Papp, 2013; Tharner et al., 2012; Weaver et al., 2017). Drake (2005) studied two dichotomised groups: Exclusive formula feeding and exclusive breastfeeding, and found no difference in maternal sensitivity.

The majority of these findings highlighted the link between 'any' breastfeeding duration and increased maternal sensitivity, regardless of exclusivity. However, Britton et al., (2006) reported that EBF at six-months was superior to 'any' breastfeeding in determining maternal sensitivity, and 'any' breastfeeding was significantly associated with maternal sensitivity at 12-months.

The findings of Brandt et al., (1998) also highlighted a possibility of a bi-directional relationship; with higher scores of maternal sensitivity in the initial 28-90 hours postpartum being significantly related to 'any' breastfeeding duration up to six-weeks. However, this was a small homogenous sample of low-income Latina women receiving medical aid, and the findings may not be generalisable. It would be interesting to explore whether this positive trajectory continued beyond the six-week marker to match the guidelines for exclusive breastfeeding for six-months (WHO,

2011), and to assess whether the exclusivity of breastfeeding would influence the findings.

The long-term benefits of attachment security are known, with research demonstrating that attachment style is often maintained throughout childhood and into adult life (Cassiba et al., 2017; Hazan & Shaver, 1987). Two of the studies included in this review explored the longitudinal relationship between breastfeeding duration and maternal sensitivity (Fergusson & Woodward, 1999; Weaver et al., 2017) taking measures at follow-up until the age of 11 and 18 respectively. These studies offer a unique insight into how the duration of breastfeeding predicts greater maternal-sensitivity, both observed and self-reported, into later childhood and adolescence.

A review by Jansen et al., (2008) reported that the evidence did not support a link between breastfeeding and the mother-infant relationship. However, they did not focus specifically on breastfeeding duration, as recommended by WHO (2011). There were also a number of limitations to this review, principally an inadequate search strategy, a lack of quality assessment for the included studies and no consideration of maternal sensitivity. The current systematic review was designed to resolve these limitations, and the extended search strategy revealed different findings to those of Jansen et al., (2008). These novel findings have shown a clearer positive association between infant attachment and breastfeeding duration, especially when using continuous measures of attachment. The current review also found a clear positive relationship between breastfeeding duration and maternal sensitivity, which was not explored by Jansen et al., (2008). The bi-directional relationship between breastfeeding duration and maternal sensitivity/ maternal bond

has also been demonstrated within this review, which is important for considering interventions which may simultaneously impact on breastfeeding duration and the mother-infant relationship.

Strengths and limitations

One of the limitations in synthesising this data was the diversity in measures used, the outcome of interest, and the age of the child at assessment. For example, the evaluation of attachment, bond and sensitivity ranged from 28 hours after birth, to 18 years of age. Measures ranged from self-report to independent blind coded observation, which differ significantly in robustness. Due to the multi-faceted nature of the mother-infant relationship, three different outcomes were explored (infant attachment, maternal-bond and maternal sensitivity), this variation makes between study comparison particularly difficult to interpret.

Although the findings of this review highlight the important relationship between breastfeeding duration and the dyadic mother-infant relationship, they do not explore the mechanisms behind this, which is a limitation. Previous research suggests that breastfeeding mothers spend more time engaging in care giving behaviours, which may explain the enhanced relationship (Smith & Ellwood, 2011; Smith & Forrester, 2017). Another theory is that the release of oxytocin during breastfeeding is responsible for an increase in maternal social behaviours, and a decrease in maternal anxiety (Feldman et al., 2007; Uvas-Moberg, 2012; Zetterstrom, 1999).

This review has also highlighted the possibility of a bi-directional relationship between breastfeeding duration and maternal bond/ maternal sensitivity. Two studies

(Brandt et al., 1998; Cernadas et al., 2003) measured maternal sensitivity and bond, respectively, in the very early postpartum period (ranging between 12-90 hours after birth) and found a positive association with breastfeeding duration. Others e.g. Britton et al., (2006) measured maternal sensitivity at 12-months and found a significant relationship between this and increased breastfeeding duration. However, the scope of this review cannot infer the direction of causality based on the timing of when measures were taken. This is a limitation, and further research is needed to explore the concept of a possible bi-directional relationship.

Longitudinal cohort studies have been extremely effective in following up long-term outcomes, demonstrating the importance of early experiences on later development. All of the cohort studies within this review had a good follow-up period, which allowed for an understanding of the impact of breastfeeding duration on infant attachment and maternal sensitivity beyond infancy and into childhood and adolescence. There were no longitudinal studies exploring maternal-bond.

Clinical implications

Research has demonstrated the importance of early relationships on the psychological, cognitive and emotional wellbeing of children (Ainsworth et al., 1978; Van der Voort et al., 2014), and public health initiatives have recognised the benefit of perinatal services to increase the opportunities that women have to bond with their infants (Douglas, & Bateson, 2017; Lee, Foley, & Mee, 2013). This includes breastfeeding, in addition to other opportunities such as skin-to-skin contact (Moore et al., 2012) and responsive feeding, regardless of infant feeding method (UNICEF, 2016).

The findings of this review have implications for both practices aimed at increasing breastfeeding rates, and interventions to support positive mother-infant interactions. The possibility of a bi-directional relationship between breastfeeding duration and, maternal bond/ maternal sensitivity has not been recognised within previous reviews. The findings indicate that pre-natal interventions to increase maternal sensitivity may also have a positive impact on breastfeeding duration.

Future research

Research into breastfeeding outcomes is an area complicated by the diversity of how this is categorised. Studies vary greatly in how EBF is prioritised compared to 'any' breastfeeding, although WHO (2011) guidelines suggest that EBF is key for the first six-months of life. The nature of gathering breastfeeding data is also reliant on self-report measures, with all but one study within this report using self-report data alone. The reliability of this information may be called into question, with the possibility of respondents being biased in favour of reporting EBF. Breastfeeding duration categories are also varied across studies, making comparison difficult. The use of a standardised tool for reporting breastfeeding data would be useful in creating homogeneity across the research base (e.g., Labbok & Starling, 2012).

Given the possibility of a bi-directional relationship between breastfeeding duration and maternal bond/ sensitivity, more research is needed to explore this in further detail and to bridge some of the limitations identified within this review.

The link between maternal sensitivity and infant attachment has been suggested for many years (Ainsworth et al., 1974; Wolff, & Ljzendoorn, 1997). Further research is needed to understand the link between maternal sensitivity, the development of secure infant-attachment, and breastfeeding.

Conclusion

Overall, this review highlights a positive association between increased breastfeeding duration and the quality of the dyadic mother-infant relationship. Research suggests that this may be a bi-directional relationship, with high scores of maternal sensitivity and maternal bond immediately after birth leading to increased breastfeeding duration. This review highlights novel findings that there is a clear positive relationship between maternal sensitivity and breastfeeding duration, although there remain mixed findings on the link between breastfeeding duration and infant attachment, and the maternal bond. More research is needed to understand the factors which influence the pre-natal development of maternal-sensitivity and maternal-bond which may lead to an impetus on pre-natal bonding interventions for mothers, which simultaneously improve breastfeeding rates.

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CHAPTER 2

EMPIRICAL PAPER

Exploring the emotional impact of breastfeeding difficulties in the context of continued breastfeeding.

Manuscript prepared for submission to 'Maternal and Child Nutrition'

Abstract

Background: Breastfeeding offers many health benefits to both mother and infant. However, many women experience breastfeeding difficulties which have been linked to postnatal distress. This study aims to explore the emotional impact of breastfeeding difficulties on women who continue to breastfeed, and to understand the factors which enable women to continue.

Method: A qualitative methodology was used to conduct semi-structured interviews with eight women who had experienced breastfeeding difficulties and continued to breastfeed. The interviews were analysed using Interpretative Phenomenological Analysis (IPA).

Results: Six super-ordinate themes were developed through exploration of the women's experiences: 'Expectations vs reality', 'Support and criticism: the influence of personal and professional others', 'Complete and utter failure: A place of no hope', 'Sole responsibility', Cultural perception of breastfeeding', and 'One day at a time: Overcoming obstacles with determination'.

Conclusions: The findings revealed that women felt unprepared for the difficulties which they experienced, the expectation that breastfeeding was a natural process led to a sense of failing their baby when feeding became problematic. Empathetic and immediately accessible support was key in enabling breastfeeding continuation, in addition to personal determination and perseverance. Women felt that breastfeeding was not culturally acceptable, and the additional pressure of breastfeeding with difficulty left women feeling vulnerable and exposed. Clinical implications were for transparent breastfeeding advice, and for immediate access to practical and emotional support.

The health benefits of breastfeeding are well documented; offering protection against many childhood illnesses, increased intelligence in childhood, and a reduction in breast cancer for mothers (Victora et al., 2016). The World Health Organisation (WHO) recommends six-months of exclusive breastfeeding (EBF) for all infants (WHO, 2011), and the United Nations International Children's Emergency Fund (UNICEF) developed the Baby-friendly Hospital Initiative, which sets out guidelines for health care staff to support successful breastfeeding. The standards of this initiative include ensuring skin-to-skin contact between mother and baby immediately after birth, at least until completion of the first feed, information for women on the benefits of breastfeeding, and specialist training on breastfeeding for health care workers (WHO & UNICEF, 2009). Despite international promotion to achieve increased outcomes of EBF, only 23% of UK women continued to exclusively breastfeed at six-weeks, reducing to just one-per-cent at six-months (McAndrew, Thompson, Fellows, Large, Speed, & Renfrew, 2012).

Gerd, Bergman, Dahlgren, Roswall, and Alm (2012) reported that over a quarter of women experience breastfeeding difficulties within the first week, and a third of women cite breastfeeding difficulties as the reason for breastfeeding cessation. Breastfeeding difficulties are subjective, and therefore challenging to define. However, they can be broadly categorised into: Poor latch, breast or nipple pain, concerns about low milk supply and worries about inadequate infant intake (Chantry, 2011). Breastfeeding difficulties have also been named as a contributing factor in the experience of postnatal distress (Gerd et al., 2012; Staehelin, Kurth, Schindler, Schmid, & Stutz, 2013). However, the emotional impact of breastfeeding difficulties has largely been ignored within the literature. This is an important area of

study in the context of how many women experience breastfeeding difficulties, and the implications of breastfeeding difficulties for continuation of EBF.

A common theme within the literature is the pervasive nature of breastfeeding difficulties, and how this can overshadow life with a new baby. Breastfeeding difficulties have been cited as a common stressor for new mothers, leading to emotional distress (Henshaw, Fried, Siskind, Newhouse, & Cooper, 2015). Feeding is an integral part of motherhood, and problems can lead to feelings of failure, anxiety and frustration (Coates, Ayers, & de Visser, 2014; Palmer, Carlsson, Mollberg, & Nystrom, 2012). Proactive support from healthcare professionals, such as providing antenatal preparation and offering early support as a prevention of difficulties, is crucial to women during their experience of breastfeeding difficulties (Hoddinott, Craig, Britten & McInnes, 2012). However, professional breastfeeding support has been controversial within the literature, with a number of studies suggesting that perceived pressure from support services to continue breastfeeding can lead to additional distress in the postnatal period (Coates et al., 2014; Chaput, Adair, Nettel-Aguirre, Musto, & Tough, 2015).

Hoddinott et al., (2012) found a dissonance between the ideals of care and the reality of support, with the latter being perceived as fragmented and inconsistent. Studies have also shown that the pro-breastfeeding literature, which is provided to women during pregnancy and in the postnatal period, contributes to feelings of guilt and shame, and often restricts women's choice of infant feeding method (Benoit, Goldberg, & Campbell-Yeo, 2016; Williams, Donaghue & Kurz, 2016). There is also a perception that some health professionals are prohibited from providing information around formula feeding to women who switch from EBF (Lagan, Symon, Dalzell & Whitford, 2014).

Studies exploring the phenomenon of women who initiated breastfeeding and later switched to formula feeding have found common themes including; feelings of relief, guilt and failure, and inadequate support (Lee, 2007; Mozingo, Davis, Droppleman, & Merideth, 2000). Women who intended to breastfeed, or who initiated EBF before moving to formula feeding, were found to be at greater risk of experiencing guilt about their feeding choice (Fallon, Komninou, Bennett, Halford & Harrold, 2017). These studies have generated a detailed understanding of the emotional burden of ceasing to breastfeed, and enabled a greater understanding of women who have lived through this transition.

Although there is a wealth of information about the psychological implications of moving from breastfeeding to formula feeding, there is a scarcity of research on the emotional impact of continued breastfeeding in the context of breastfeeding difficulties. Little is known about the factors which enable women to continue to breastfeed when facing adversity. Two qualitative studies have explored the lived experience of women *initiating* breastfeeding whilst experiencing breastfeeding difficulties (Palmer et al., 2012; Williamson, Leeming, Lyttle & Johnson, 2012). Palmer et al., (2012) interviewed women who had experienced severe breastfeeding difficulties and required a prolonged hospital stay because of these difficulties following the birth of their child. As the focus of this study was on initiation, women were interviewed within eight-weeks postnatal, regardless of their current infant feeding method. Their findings revealed that women experiencing difficulties felt they had failed as a mother, and that their expectations of motherhood had been shattered. However, their results did not distinguish between those who continued to breastfeed, and those who had ceased breastfeeding.

Williamson et al., (2012) also explored the experiences of women initiating breastfeeding whilst having breastfeeding difficulties, with interviews conducted within the first seven-days postnatal. This was an interesting methodology, using audio diaries for women to record their experiences in the moment, allowing for an account based in the context of the difficulties. The results highlighted that women felt as though their maternal identity was threatened by experiencing breastfeeding difficulties. Although these two studies are valuable, they do not capture the experiences of women who *continue* to breastfeed despite adversity.

One study used a retrospective case-controlled methodology to compare women who continued to breastfeed, and those who switched to alternative feeding methods in the context of breastfeeding problems (Hegney, Fallon, & O'Brien, 2008). This study allowed the researchers to compare two groups of women, and infer possible differences in the coping strategies and personal qualities of women who continued to breastfeed, and those who discontinued breastfeeding. Findings revealed that women who continued to breastfeed were more likely to rely on trusted health care professionals, and to have peers with whom they could share their experiences.

Although this study does explore continued breastfeeding, there were some methodological limitations which leave a gap in the research area. Firstly, this was a retrospective design, with women being interviewed up to two-years after their experiences of breastfeeding difficulties. This leads to questions about the reliability of the findings, with the possibility of recall bias, and is unlikely to have captured the nature of the emotional experiences in retrospect. This study also uses thematic analysis, which can provide an overview of the topic area, however this analysis

does not allow for the depth of meaning which can be found with other qualitative methodologies.

It is important to consider the emotional implications of continued breastfeeding in the context of breastfeeding difficulties, especially given its prevalence, with 12% of women reporting breastfeeding problems at a time when breastfeeding has already been established (McAndrew et al., 2012). Given that breastfeeding difficulties are associated with early breastfeeding cessation (Gerd et al., 2012), it is important that women are supported to overcome the difficulties and to have access to psychological support to ensure the wellbeing of mother-infant dyads, and to increase rates of EBF. Further research in this area would lead to increased understanding of how to support other women experiencing difficulties, and to explore the impact of breastfeeding difficulties on mental health. Findings could be used to inform policy, and to increase the knowledge of how women can be effectively supported by health care professionals.

Aims and objectives

The aim of this study was to (a) understand the personal experiences of women who have continued to breastfeed whilst experiencing breastfeeding difficulties; (b) explore the emotional impact of these difficulties; (c) find meaning in the factors which enable women to continue to breastfeed despite these difficulties.

For the purposes of this study, breastfeeding is defined as infants who receive over 80% of their nutrition directly from the breast, or four out of every five feeds (Labbok & Krasovec, 1990; Labbok & Starling, 2012). Due to the qualitative methodology, it is important to acknowledge the subjective nature of breastfeeding

difficulties, and how they are experienced by each individual differently. Therefore, breastfeeding difficulties will be defined as any adverse factors, which the woman themselves would define as a difficulty.

Method

Design

A qualitative methodology was used to aid the exploration of the research aims. Individual semi-structured interviews were conducted with eight participants and data was analysed using Interpretative Phenomenological Analysis (IPA). This is a qualitative approach concerned with understanding, in detail, the meaning that people attribute to their life experiences, and how they make sense of these experiences (Smith, Flowers, & Larkin, 2009). This approach acknowledges the role of the researchers own experiences within the interpretations that are made through analysis.

Ethical Approval

Ethical approval was granted by the Health Research Authority (HRA) and the study was sponsored by the Clinical Research Governance Team. Participants were provided with an information sheet and fully informed written consent was gained prior to commencement of the interviews.

Participants

Eight women were recruited through purposive sampling, they were selected on the basis that they were primiparous, breastfeeding for the majority of feeds (80%), and had experienced a prolonged difficulty with breastfeeding (see inclusion and exclusion criteria Table 1). All women had an infant aged between the ages of 6

and 16 weeks. The age of infant at the time of interview was chosen to select women who had already established breastfeeding, but before weaning onto solid foods.

Table 1

Inclusion and Exclusion Criteria

Inclusion Criteria • Women using breastfeeding as their primary feeding method at the time of interview (babies who have over 80% of their milk intake directly from the breast, or four out of every five feeds). • Over 18 years of age. • Primiparous women with a single birth. • Baby born at full term (above 37 weeks gestation). • Infant aged between 6-16 weeks at the time of mother's participation. • Good comprehension of the English language. • Breastfeeding difficulties for at least four weeks since the birth of their baby (on at least four out of seven days in any one week)
Exclusion Criteria • Primary feeding method of bottle feeding/ expressed milk feeding. • Multiparous women. • Under 18 years of age. • Women with pre-term infants. • Medical problems known to affect breastfeeding. • Currently under the care of a Psychiatrist, to exclude women with severe and enduring mental health difficulties.
Table 1

Procedure

Women were recruited via two sampling streams: (a) Referral from breastfeeding peer supporters from Home-Start, an organisation commissioned to provide breastfeeding support to women within the locality of the study. Home-Start Peer supporters gave the Participant Information Sheet (PIS) to eligible women (Appendix F) and, with their consent, took the contact details of those expressing an interest to share with the researcher (Appendix H). (b) The researcher attended

breastfeeding groups to disseminate leaflets advertising the study (Appendix E). Women were invited to contact the researcher if they were interested in participation.

All those who expressed an interest in participation were sent a copy of the PIS, and this was followed up with a telephone call to provide further information and to answer any questions. The eligibility criteria were used during telephone contact to assess suitability for participation in the study. Verbal consent was taken prior to arranging an interview appointment.

If agreeable to participation, the PIS was discussed prior to the interview, and women were given an opportunity to ask questions before completing the consent form (Appendix G).

Interview procedure

Data was gathered through semi-structured face to face interviews, which were conducted in the participant's own home, or a place of their choosing, to ensure that women felt comfortable and could meet the needs of their baby throughout the interview. Interviews lasted between 40-60 minutes; basic demographic details were taken and a topic guide was used to ensure that all relevant areas were covered. The topic guide included questions regarding the emotions experienced when the difficulties were at their worst, how the breastfeeding difficulties impacted on life as a new mother, and why women continued to breastfeed despite experiencing difficulties (see appendix I for full topic guide). However, interviews were person-centred and questions were guided by exploration of the women's own experiences, aiming to understand their personal meaning. All interviews were audio recorded and transcribed by the researcher (MH) or a paid transcriber working for the University of Liverpool.

Analysis

The guidelines for IPA analysis were followed, as recommended by Smith et al., (2009), although they stress the idiosyncratic nature of IPA. The initial stage of analysis was for the researcher to immerse in the data through listening to the audio recordings, reading and re-reading the written transcripts. Detailed notations were then made; describing the content, language and initial concepts. For the first two interviews, this process was completed independently by two researchers and the exploratory comments were shared and discussed to ensure that the analysis remained close to the participants' own experiences.

Emerging themes were then developed for each interview; attending to the participants' own words, and the researcher's initial interpretation of meaning. Emerging themes were explored in more detail, searching for patterns and divergence (see appendix L for a sample transcript with analysis). Next, was a process of connecting emerging themes together to develop clusters of concepts that were clearly linked; disconfirming information was also sought out. This process was completed for each interview in isolation, before moving on to compare themes and patterns across participants; creating super-ordinate themes for the group as a whole, whilst maintaining individual meaning through the use of direct quotes and interpretations. To ensure anonymity, all women were given a pseudonym to facilitate reporting the results.

Reflexivity

The IPA methodology accepts and embraces the role of the researcher in the interpretative process (Reid, Flowers, & Larkin, 2005), acknowledging that the analysis is interpretative, grounded in the data, yet subjective. It is, therefore,

important to reflect upon the researchers own position throughout the process (see Appendix K for reflexive statement).

Quality Assurance

The quality of analysis was monitored through regular discussion with the research team (MH, VF, PS, JH). Emergent themes were shared, and a transparent evidence trail was provided to map the super-ordinate themes and the comprising sub-themes onto the transcriptions. A reflexive diary was completed, and the personal experience of the researcher was 'bracketed' to aid with the interpretation.

Results

Participant characteristics

Eight women were recruited for this study, aged between 29 and 37. All were living with partners, and six were married. All were in full-time employment prior to birth, and most were educated to at least degree level (n=7). Their infants were aged between 6 and 16 weeks old at the time of interview (mean= 10 weeks); three infants were female and five were male. To maintain anonymity given the small sample size, the full table of participant characteristics has been omitted.

Themes

Six super-ordinate themes emerged, which captured the individual experiences of each of the women (Table 2).

Table 2

Super-ordinate themes and constituent sub-themes

Super-ordinate Themes	Constituent Sub-themes
1. Expectations vs reality	• Unrealistic expectations. • Breastfeeding as a skill: Two steps forward and one step back. • Moving from inexperience to experience.
2. Support and criticism: The influence of personal and professional others.	• Empathy and encouragement. • Tolerating the critical views of important others. • Immediately available support. • Lots of different ideas vs Conflicting advice.
3. Complete and utter failure: A place of no hope.	• You and your body failing your baby • Not good enough in any way.
4. Sole responsibility	• Pressure. • Precious time together.
5. Cultural perception of breastfeeding	• Home as a safe base for breastfeeding. • Vulnerability in public. • Non-acceptance within society.
6. One day at a time: Overcoming obstacles with determination	• Determination- not a quitter. • Keeping your options open. • Light at the end of the tunnel.

Table 2

Contextual information.

The aim of this study was to understand the experiences of women who have continued to breastfeed whilst experiencing breastfeeding difficulties for at least four weeks, and to explore the emotional impact of these difficulties, in addition to finding meaning in the factors which enable women to continue to breastfeed despite these difficulties.

Women described a number of reasons which motivated them to initiate breastfeeding, and which indicated why breastfeeding was important to them. This included the multiple health benefits of breast milk for babies, and the benefits for them in terms of convenience.

> *It was mainly just because of the benefits for him, like the health benefits and erm just from what I'd read about I don't know how your body makes it perfect just for him like with the right amount of fat and protein and I thought the formula can't really do that individually for each baby can it?* (Emily)

> *When you hear people talk about buying, getting formula and sterilising and doing all that… I thought, you know with having him and everything else that you're doing…. I can't be doing (laugh) I can't cope with doing all that (laughs) it just felt like another thing to have to cope with.* (Suzie)

Many women highlighted the importance of family history of breastfeeding, which impacted on breastfeeding initiation.

I think because I was breastfed, I'm the oldest of five erm so my Mums breastfed all of us erm and before I had (baby's name) my Sister had 2 children she's had 2 children she's breastfed them all so I've been brought up in a breastfeeding family erm and all my friends have breastfed, all my Sisters friends have breastfed. (Adele)

The participants described a "*multitude of problems*" (Adele) which created their experience of breastfeeding difficulties. These problems often occurred simultaneously, and snowballed into further difficulties such as tongue-tie, leading to poor latch, persistent pain, thrush and mastitis. All of the women interviewed had experienced two or more difficulties with breastfeeding.

With the tongue tie it was causing me a lot of pain then as well erm it was making me quite sore…..and then he's got thrush as well on his tongue that goes back to me and we keep passing it back to each other….so I have it in my breast and he has it on his tongue so that's been another difficulty that we've been trying to get through. (Emily)

Theme 1- Expectations vs reality.

This first super-ordinate theme reflects the dissonance between ante-natal expectations and their realities of breastfeeding a baby. A sense of unrealistic expectations, both internal and conveyed by others, left women unexpectedly discovering that breastfeeding was a skill to learn. This theme captures the journey

as women move through the transitional phase from being pregnant, to becoming a new mother; inexperienced at breastfeeding, to finally reaching a point of experience.

Unrealistic expectations.

Having prior expectations about motherhood, and specifically breastfeeding, meant that women were unpleasantly surprised by how hard the reality of breastfeeding was.

> *I thought it would be quite a nice experience, I never thought it would be as hard as it turned out to be. It was really, really painful I never thought it would be that painful. It was quite excruciating.* (Nicky)

The women spoke of their experiences of receiving breastfeeding information antenatally, and how this can often be biased towards raising positive expectations about breastfeeding. *"In theory, it all sounds all wonderful and you think, oh yeah that, that's a doddle (laughs) and it wasn't quite like that*" (Ruth).

> *I think they do need to be a bit more realistic ….this whole positive blooming experience, it's just not realistic….and it kind of gets you second guessing everything then* (Jade)

The women spoke of a delicate balance between knowing enough about the difficulties of breastfeeding, without this acting as a deterrent to initiation. *"It's a bit of*

a toss-up, you could go, really go into detail and tell them all the hard things that there are- could really put them off doing it" (Suzie).

> *Maybe just a bit more information when you're pregnant on 'its going to be difficult, sort of prepare' but then you don't want to tell people it's going to be too difficult cos then they will be like oh well why would I do that. It's just so it's not such a shock.* (Lottie)

Some women acknowledged that no amount of ante-natal education would have enabled them to understand the true experience of breastfeeding difficulties. *"You can't explain how difficult it is, you can't explain that to somebody, they'll never understand it. You can say it's difficult but you can't quite explain it"* (Nicky); *"even all that preparation doesn't prepare you for how difficult it is." (*Suzie).

> *They can bring the woollen boobs round as much as they want but it doesn't teach you anything. Until you're actually doing, it with a real baby, nothing can, nothing can teach you it.* (Ruth)

Breastfeeding as a skill: Two steps forward and one step back.

Women expressed surprise that breastfeeding was a skill which had to be learnt by both mother and baby. The prior assumption was that the infant would instinctively know how to latch onto the breast correctly, and that this would be a

natural process. "*I never thought there would be techniques to breast feeding, I just thought that, you know, that babies just know what to do"* (Nicky).

> *I thought oh it's just breast feeding so you just put them to the breast and then that's it… but it wasn't like that.* (Kate)

> *It's quite a thing to like master I think it's quite a hard skill, because it was our first baby as well everything was new.* (Jade)

This led to a sense of failure and disillusionment, where women felt that they were doing it 'wrong'.

> *I felt like it had been going right, in the beginning and then it… suddenly I felt like I'd just taken a dozen steps backwards and I thought, oh my God, I'm gonna be miserable forever* (Suzie)

> *You think…you're kind of failing your baby a little bit not being able to breastfeed. Then one of the midwives did say to me like it's a learning curve for both of you…. (*Nicky)

The journey towards experience was not linear, and women described times of elation, followed by another obstacle *"you think oh yes I've got this now I know what I'm doing and then there's another little hurdle and you're like oh ok that's a spanner in the works for today"* (Adele). This was viewed in different ways by each individual.

Some women found this frustrating *"You put two steps forward and one step back" (Lottie)*. Whereas others viewed it as a challenge to be overcome "*I kind of approached it like a bit of a task and a challenge"* (Suzie).

The way in which 'setbacks' were perceived led to a difference in the emotional response of each woman, whether this be viewed as a catastrophe "*I thought I'd been doing so well for so long, we just had to go straight back to the beginning again, and both of us learning from scratch"* (Suzie), or as an adventure "*Every day's a learning curve…and you're learning something new every day and yes, it's exciting and fun but it's also really scary"* (Adele).

Moving from inexperience to experience.

Ruth explained how she became trapped in a negative cycle, accepting a sub-optimal latch to ensure that her baby was feeding. However, it became easier to recognise and correct this as she became more experienced.

> *I think you end up settling, you get a bad latch, but you think well he's feeding so just let it be and then that causes damage and then you're even more sore next time around…. I think I'm getting better at recognising the early signs of a problem. Erm I think I am getting better at taking him off and on again, because I've been through that cycle enough times to know that it's of no benefit to just let him feed because, oh well its best if he's feeding.* (Ruth)

Adele found that a sense of mastery developed over time, and this resonated with a sense of elation.

> *I mean the first six-weeks is really hard like incredibly hard and then when you got that 6 weeks it's like a hurdle and it's like oh my God I'm mastering this now I know what I'm doing.* (Adele)

Theme 2- Support and criticism: The influence of personal and professional others.

The second super-ordinate theme explores the importance of input from others, and how this can be perceived as supportive or critical of breastfeeding. There was value placed on how partners, family and friends could have a supportive role, despite nutrition only being provided by the mother.

Empathy and encouragement.

Women expressed feeling most supported by those who were able to demonstrate a high level of empathy. It was key for others to be aware and understand the reality of their experienced difficulties *"I think having a supportive partner is really important in it. Someone who recognises how hard it is"* (Emily).

> *I know he (husband) feels really guilty when he hands him over to me, I mean if he's been crying and he tries to settle him and then he comes back and he's like, no he's hungry. I know he feels really guilty about handing him back to me, actually just knowing that he's aware about just how hard it can be* (Ruth)

> *I did notice when certain friends came round that had experienced breastfeeding, they kind of knew. It just made me feel more at ease, whereas other friends that hadn't that were not never experienced children at all…that was quite hard* (Kate)

Most of the women who were interviewed, expressed that encouragement from significant others was key in supporting them to persevere and continue with breastfeeding throughout their difficulties.

> *I'd say like 99% of the people around me were very supportive of it and they were very positive of breast feeding. So that helped very much erm because and the fact that they were honest about how difficult it was. People around me just encouraged me, I think that's what kept me going* (Lottie)

Although encouragement was not universally welcomed; speaking of her husband, Kate gave a sense of how positive comments appeared disingenuous to her:

> *He's just like 'oh you're doing a good job', and the health visitor and the midwives are like 'you're doing a really good job' and they say that and you just it seems a bit patronising.*

Tolerating the critical views of important others.

Women shared that important people within their lives were not all supportive of breastfeeding, and it was common for family members to express negative opinions, and to suggest that bottle-feeding might be a better choice for the baby. *"My mum's told me -just put him on the bottle, he'll be fine, you were, you had a bottle"* (Ruth).

when I was at my grans I was feeding him and he was coming off crying because of reflux, and she was like oh are you sure he's getting enough milk from you I don't think you're giving him what he needs, maybe he should go onto formula (Emily)

Critical comments which called into question the wisdom of continuing to breastfeed had to be tolerated. However, some expressed that being pushed to bottle-feed actually made them more determined to persevere with breastfeeding '*People saying that just made me more determined to carry on'* (Suzie)

Immediately available support.

The immediacy of access to support was crucial in supporting women to continue breastfeeding in moments of despair. The importance of this was commented upon by all of the women, and was always with reference to the care provided by health care professionals, or the peer supporters from Home-Start, rather than family members.

Home-start have been there, there was one day when I was just really at the end of my tether, and just really felt that I couldn't carry on with it, I was just so sore. I rang them up and as soon as they answered the phone I just burst into tears, erm and they were here within half an hour. You really can't fault that. (Ruth)

Home-start were a massive help… I was in a state, and she was really, really good and she was like 'I can stay for as long as you want'. Sometimes I'd be so upset I wouldn't be able to speak, and then she'd be like 'oh I can stay for as long as you want me to' (Nicky)

It seemed that women often accessed these services when they had exhausted all their own personal resources, and needed the support of an external other. Some women expressed that the knowledge that this support could be so easily accessed enhanced their capacity to cope with difficulties.

Knowing that support is there is helpful, even actually when you don't need it. Knowing that I could ring them and they could come out was sometimes enough for me to think, well I'll just try it again, and I'll just see. (Lottie)

Lots of different ideas vs Conflicting advice.

Professional support was seen as important at the time of difficulty, although conflicting advice was viewed both positively and negatively by different women. This finding highlights the idiosyncratic phenomenological meaning behind the experience of what it is *like* to be surrounded with ideas and advice. Ruth viewed this very positively:

All the different people around, all had different ideas, I could take the bits of what they said, because bits of it worked for me, and bits of it didn't so they said 'oh well try this' and it just didn't work, but then the next person came

along and said 'oh try this' and I was like, oh, that, that worked. Erm and I think the benefit was having lots of different people with different ideas.

Whereas Adele found the range of advice confusing ….

I think sometimes it really hard because you hear so much conflicting information…like today (at the baby clinic*) one person will tell you one thing and then you go back a week later and somebody else will tell you another thing. It can be quite difficult that because you do one thing and you think you're doing it right and then you get told oh no don't do that you know you need to do this.*

And Lottie experienced both positive and negative elements …..

I found it quite, not inconsistent, but the amount of different people that came in quite a few of them did say different things like the way I've sort of ended up doing it is sort of like sandwiching my breast a bit to sort of latch her on so some of them will do that, other ones came in and said oh no don't do that you just need to leave it naturally and sort of latch her on, but it probably helped with different opinions cos you could kind of work out what worked best for you really.

Theme 3- Complete and utter failure: A place of no hope.

This theme embodies the distress and sense of complete failure that was experienced by all the women within this study, although this fluctuated over time, depending on the severity of difficulties.

You and your body failing your baby.

All women conveyed a sense of guilt that they were somehow failing their baby, as if a lack of pleasure in something which is 'meant' to be a positive experience was indicative of failure. The linguistic use of the word failure is an interesting concept given that all of the women were continuing to breastfeed. This highlights the meaning of failure for these women was not ceasing to breastfeed, as might be expected, but a judgement on their efficacy to provide life-sustaining nutrition to their infant. This ignited emotions and cognitions of '*complete and utter failure at some points'* (Suzie). Suzie also described this as '*mentally agonising'*, and Emily described the physical and mental pain of seeing her child battle to feed from the breast '*it was painful for me…. and it was painful watching him struggle'*.

The sense of failing to breastfeed effectively, was further compounded if the baby did not gain weight from one week to the next '*you feel you're failing them if they are not putting on enough weight' (*Adele*).* This was echoed by many of the women who held the belief that any decline in the rate of weight gain was evidence of their failure to provide for their child.

> *I felt guilt…of not being able to provide for him. I think… err just kind of generally down. Beat myself up about it….. Kind of frustrated at myself that I can't do it (*Ruth)

Women also expressed the idea that they were physically designed to be able to feed their infant, and that their body was letting them and their baby down by failing to function as it should. '*Your body is made to do it, and it's not performing, you just think, sometimes, what is wrong with me that this isn't working?'* (Suzie).

This led to feelings of frustration and despair, with the language used suggesting a broken body and a broken sense of self as a mother.

*I kept thinking I must, I must be able to do it (*Emily)

what's wrong with him, what's wrong with me? (Kate)

Not good enough in any way.

The emotional experience seems to be one of desolation, with women describing themselves as worthless '*(I'm) worthless like, oh why can't I feed him?'* (Kate), or not good enough *You're not doing it right or you're not perfect you're not good enough stuff like that. Vulnerable and low self-esteem* (Jade). A sense of hopelessness also prevailed within the narrative *Oh my God, there's no hope, there's no hope here.* (Suzie).

This perception of 'not being good enough' spread into other areas of motherhood, and life, and made women question their abilities and self-worth.

felt like I wasn't good enough. When it was at its worst I was just, felt, I meant like you're never gonna be… if you can't do this, what else are you gonna be able to do? …You kind of feel disappointed in yourself, and that feeling will infiltrate every other part of your life….when I was playing with him, I thought I'm no good at this either, and when trying to get him to sleep and he's not going to sleep… oh im not good at that. I think a lot of it stemmed from that angst and disappointment with the breastfeeding. (Suzie)

There was also a sense of internal pressure and criticism, despite the enormous effort that had gone into continuing to breastfeed despite the difficulties: '*you are your worst critic aren't you… you just judge yourself'* (Kate*).* Some women described this as '*beating myself up'* (Adele*), or 'an emotional rollercoaster'* (Lottie).

Theme 4- Sole responsibility.

Pressure.

All women described feeling a pressure upon them in being solely responsible for providing breast-milk to ensure the growth and development of their baby. This seemed to be in the context of the powerful belief about the benefits of breastfeeding for the baby's health and wellbeing. This knowledge left women vulnerable to an increased internal pressure to breastfeed, regardless of great personal distress "*the onus is just on me … the only one that he can get his food from…it's so relentless"* (Kate).

> *that pressure to, cos I guess it comes down to the fact that you're solely responsible aren't you? so erm when you're feeding them yourself there's no one else who can help. I mean, I'm fully responsible for all of his weight gain, that can only come from me.* (Ruth)

There were also benefits to having sole responsibility for breastfeeding; a sense of pride and achievement "*it's a really nice thought to think that I'm the one keeping her alive"* (Lottie). Ruth described the contradiction between pressure and

pride *“I am quite proud of it as well in where we’ve come, but yeah, there is definitely a pressure with it”.*

Precious time together.

Many women reported enjoying the sole responsibility at times, being able to safeguard a special time between them and their baby, which excluded all others. This was seen as a time for bonding, peace and pleasure *“I think I enjoyed the closeness, she needs me and not anyone else”* (Jade).

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it was kind of our time and it was all on me too kind of just take care of this little human being who and I just needed to feed her. erm it made us stronger if anything erm and it makes me closer even closer to her now. (Nicky)

It’s nice to feel that I can, I'm really like the only one who can feed him and its nice, nice to think that I've grown this little person…. from just from me really….my little baby (Emily)

For some women, this special time with their baby came at a cost; a loss of independence, and frustration at being unable to afford some time away from their child. Restoring some form of independence was seen as important for their own wellbeing, and possibly a survival of their pre-existing self.

the social aspect I suppose gets you a bit down but… yes erm the only thing is like now just get a bit bummed when everyone's going out drinking…. and like if I wanted to go …you're solely the person that can only do it. (Jade)

Maybe if it was easier, then I'd have more time to do other things like go out and just be out and do more activities…. just to keep in touch with the world because I feel like it's good for my mental health. Basically, it's just a freedom thing. (Kate)

Theme 5- Cultural perception of breastfeeding.

The fifth super-ordinate theme showed a dichotomy with seeing breastfeeding at home as safe and breastfeeding outside the home as threatening and hostile.

Home as a safe base for breastfeeding.

Breastfeeding in the home environment fostered a sense of safety to women during their most vulnerable moments. This allowed women to be 'exposed' physically and emotionally without judgement, and to experience their physical and mental distress in private. '*I wouldn't want to be out and have to feed him on that (bad) side, erm I'd want to be at home'* (Ruth).

it wasn't a relaxing experience, it wasn't a pleasurable thing that I was doing at the time, I didn't feel like I was doing it well, but I didn't want to take that out of a safe space. (Suzie)

It got to a point where I was getting so stressed out about the feeding, like…. I'd be sitting here in tears, putting him on-off, on-off, never confident that I had it right (yeah) and that I didn't want to go and, just go and sit somewhere else in public. Especially, bursting into tears, with him crying cos he was hungry (Lottie).

Vulnerability in public.

Conversely, women felt vulnerable and exposed in public. The fear was of being exposed in a literal, physical sense, and of being exposed as a failure.

It was weeks of this careful, rolling him on and doing all this, and not being able… and I didn't feel comfortable going out in public because it was such an exposing thing. I couldn't just go (Suzie)

oh God, everyone's staring at us!' …you don't know where to look, so having to do that and feeling a bit exposed as well, is… is especially galling sometimes. I just want to curl up and die. (Lottie)

Many women felt constantly self-conscious of creating a scene. The baby was seen to attract the attention of people when out in public, leaving women feeling vulnerable and mortified to be at the centre of attention *"I think you just feel a bit more vulnerable" (*Kate)

I'm a bit self-conscious of erm making too much of a scene really…he starts- I'm hungry! And nothing will satisfy him until… there's no calming him down and

again, I think being out and about with that and one everyone looking at you cos you've got a screaming baby and then you've got the pressure of then you've got to breastfeed him. (Ruth)

Most women continued to avoid feeding in public until the breastfeeding difficulties had relented, however some women found that their anxiety quickly reduced "*I did feel a bit nervous about getting my boobs out in public…but erm once I'd done it the first time I think I sort of got over that" (*Kate).

I just felt instantly calm and I was like ok this is good. Erm but it's a lot easier to just breastfeed rather than think right ok we've got to bring that, got to get some hot water, go to feed him, got to make sure the bottles sterile, got to do this, got to get the milk in there, got to heat it up (Adele)

Non-acceptance within society.

Another important sub-theme was the culture of breastfeeding in society. Many women described being made to feel like the odd one out, and they did not experience breastfeeding being the social norm. The portrayal of breastfeeding within the media supported the view of women being discriminated against within society *"I only see what's in the media about poor women getting hung up cos they're breastfeeding their kids"* (Suzie).

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I remember seeing something on the news a while ago about how there was a woman on a train or a bus or something and erm someone had gone up to it and told her she shouldn't be feeding (Kate)

It's not common place, and I think that when you become aware of it, you realise that it's not commonplace, and you are the odd one out…I don't think its seen as normal here, you're definitely the odd one out (Ruth)

This sense of being different, led to the idea of being judged and held under scrutiny within their communities. Many women felt that they had to hide their bodies, and their decision to breastfeed. '*It's daft 'cause you would get a bottle out and feed your baby by a bottle wouldn't you?'* (Kate).

I don't think I don't like it err just like getting your boobs out to feed….and it's just a lot more I don't know if people just like judge you a bit more even though it's probably the most natural thing….so then to do like my Sister in law she's just had a baby but she bottle fed so like when we were going out she can plonk a bottle and I tried to hide somewhere. (Jade)

I know it's a culture thing it just needs to not be as taboo……. I think it probably just more of a culture in the UK, people are still a bit more reserved possibly. (Nicky)

Breastfeeding facilities were viewed as unhygienic and sub-optimal, suggesting the idea of breastfeeding being disgusting to others. This led to both feelings of anger, and shame.

> *it makes me really cross when, I've felt like when I'm trying to find places to feed… places like the supermarkets, where it says they've got a breastfeeding room, but it's the baby changing rooms. That's equivalent to me, to eating in the toilet (Kate)*

> *Its bizarre that, its just what we're designed to do and… you wouldn't make someone eat in a toilet, why should a child eat in the toilet? And… they're boobs… get over it! If you don't want to watch, if you don't want to see it, don't look. It enrages me that people still have that attitude to it?* (Suzie)

> *I won't really go out just because the thought of having to go the toilet to be fed.… I'd stand in like the disabled toilets trying to feed her.* (Jade)

Even health professionals did not always see breastfeeding as the norm, and some women felt that there was not an assumption that you would breastfeed.

> *all the posters say 'breast is best' and all that, but then the actual reality, I mean, breastfeeding rates are hugely low. The reality is that hardly… well not hardly anyone, but the rates are low. It just didn't seem like a priority in hospital. (Suzie)*

Theme 6- One day at a time: overcoming obstacles with determination.

Determination- not a quitter.

Key to the continuation of breastfeeding was the concept of determination and perseverance. This was accompanied by a sense of pride for having achieved so much in the face of adversity. This involved going beyond the boundaries of usual mothering, battling with extreme difficulties to fulfil the needs of the baby.

> *that's probably just that you love your child so much you just can't help it its like erm I don't know like erm er an innate thing… that you just can't really, you just keep doing it without questioning* (Kate)

> *My mum would tell you that even as a baby I was stubborn (laughs) so yeah… I guess that's kind of me, how I am. I think when I put my mind to something, if I've decided on something then yeah I'll give it my best shot. Certainly. I do kind of persevere with stuff, I'm not a quitter.* (Ruth)

> *I feel proud that I've carried on really, so I feel really happy, I like to have a challenge I've ….just been really focused on making it work more than anything…I'm quite a patient person so I would say I was just more persevering with it. (*Emily)

Keeping your options open.

A protective factor in enabling the continuation of breastfeeding was the idea of '*keeping my options open'* (Nicky). This was important in reducing the internal pressure that women felt to continue. This included focussing on the immediate, rather than the long-term goal to reach six-months of breastfeeding '*I knew I had to take it one step at a time' (Nicky)*

> *we were very open minded about the fact that I was like right I really want to breastfeed but you know just to make sure our child is fed is the most important thing so just we want to make sure he's healthy and happy* (Adele)

> *So I thought initially I'll give it a go and see how I get on, I always kept my options open. I always thought I've got options if breast feeding doesn't work then there's always bottle feeding* (Emily)

Light at the end of the tunnel.

The was a recognition of a 'light at the end of the tunnel' and a transition from despair to hope. As women reflected upon their breastfeeding journey, they were able to acknowledge their struggle and, in hindsight, reflect upon their achievements.

> *Tomorrow is always a new day and if you have a bad day, it's one day, and tomorrow is always going to better. That has always pushed me through I keep thinking get through today and let's see what tomorrow is like* (Lottie)

I am proud of where we've come. I'm proud that I've managed it, and I'm proud, like when you go and get him weighed, and he's put on three pounds since he was born. I think, well I've done that, so yeah its nice to recognise that, and have space to think about that really. (Ruth)

I think this is the number one thing that I'm quite proud of….for me it's quite a big achievement…. it's a lot of perseverance a lot of determination (Nicky)

After everything she had been through, Suzie was able to look back with humour on why she was able to continue to breastfeed; '*the fear of having to go out and sterilise everything (laughs)'.* (Suzie)

And finally, all of the women recognised that the breastfeeding difficulties were temporary, and they perceived a sense of hope and resolution.

I suppose it's a case of like your good days and your bad days you've got to get through it. It's like there is light at the end of the tunnel (Jade)

I must have been able to see some light at the end of the tunnel, cos I carried on doing it. And once you start to see some small improvement, it starts to click (Suzie)

Discussion

This study aimed to understand the emotional impact of breastfeeding difficulties in the context of continued breastfeeding, and to explore the factors which enable women to continue to breastfeed. Six super-ordinate themes were identified: '*Expectations vs reality', 'Support and criticism: The influence of personal and professional others', 'Complete and utter failure: A place of no hope', 'Sole responsibility', Cultural perception of breastfeeding',* and *'One day at a time: Overcoming obstacles with determination'.*

The women within this study experienced a multitude of problems, including poor latch, severe pain and concerns about infant weight gain. All of the women reported two or more difficulties, and the range of problems matched with those defined by Chantry (2011) as being commonly experienced. One study found that over 25% of breastfeeding women report difficulties within the first week (Gerd et al., 2012). As breastfeeding difficulties were associated with breastfeeding cessation (Gerd et al, 2012; Staehelin et al., 2013), it is unsurprising that exclusive breastfeeding rates in the UK were as low as one-per-cent at six-months (McAndrew et al., 2012).

Expectations vs reality

The first theme 'Expectations vs reality' highlighted that the women felt unprepared for their actual experience of breastfeeding, and had not truly understood how difficult a skill this might be. There was a strongly held belief that breastfeeding was a natural process and that they, and their babies would instinctively know what to do. The antenatal support had a role to play in promoting

positive expectations of breastfeeding, although the majority of women recognised that their experiences of breastfeeding difficulties were previously outside their range of experiences, and that preparation would have been difficult. Hoddinott et al., (2012) also found that antenatal breastfeeding education was perceived as providing an unrealistic view of the reality of breastfeeding, and that it was depicted as straightforward and 'easy'. It has also been shown that the majority of women do not expect to encounter problems with breastfeeding (Scott & Colin, 2002). There was a recognition within this theme that the women had gained knowledge through experience, which they could use to overcome their breastfeeding difficulties.

Support and criticism: The influence of personal and professional others

Within this theme, it was clear that empathetic and immediately available support from family, friends and health care professionals were two important factors in continuing to breastfeed despite the difficulties. Most women had access to a NHS commissioned service provided by Home-Start, which women found to be highly accessible. A randomised controlled trial of home-based peer breastfeeding support found that repeated contact with peer-supporters, especially in the early postnatal period, was associated with a significant increase in breastfeeding exclusivity and duration (Morrow et al., 1999). The women within this study often relied upon these services when their personal resources were depleted and they needed external support. Due to the availability of this support, services were experienced as holistic, rather than fragmented as suggested by Hoddinott et al., (2012).

All of the women reported inconsistent advice from postnatal services, however this was surprisingly perceived as both a positive and a negative for different women within the sample. Some women reported feeling confused by

conflicting information, whereas others felt that they were equipped with enough information that they could select what would work best for them. This highlights the importance of clear communication from advice-givers that different techniques are likely to be effective for each individual. The concept of inconsistent advice is supported within the literature (Dennis, 2002), however the positive perception of this was a novel finding.

Complete and utter failure: A place of no hope

The third theme ‘Complete and utter failure: A place of no hope’ encapsulated that the women experienced a sense of failing their baby, as the infant struggled to latch and to feed efficiently, and the women fought to breastfeed despite intense pain. The pervasive nature of breastfeeding difficulties was also notable, with women describing how the sense of failure had implications on their self-efficacy as a mother, concurring with the findings of Henshaw et al., (2015). The current study highlighted that the women experienced high levels of psychological distress when having breastfeeding difficulties. This included feelings of complete failure, worthlessness, not being ‘good enough’, and a sense of no hope, echoing the findings of Palmer et al., (2012) and Hegney et al., (2008). Mothers experiencing post-natal depression have also been shown to be at greater risk of breastfeeding cessation, and were more likely to experience breastfeeding difficulties (Dennis & McQueen, 2007). Previous research had emphasised that breastfeeding difficulties were strongly associated with postnatal distress (Gerd et al, 2012; Staehelin et al., 2013), and pre-natal anxiety was predictive of a reduction in breastfeeding exclusivity (Fallon, Bennett, & Harrold, 2016), highlighting a link between maternal mood and breastfeeding. The sense of failure found within the current study was

multi-faceted, with women feeling as though they, and their body, were failing to provide for their baby.

Sole responsibility

This theme embodied the contradictory experience of having sole responsibility for providing food and nutrition for the baby. Women found that this responsibility was accompanied by both a pressure, and an opportunity to gain precious time together with their infant. Both dichotomous experiences appeared to have equal value. The sense of pressure was a practical consideration; being the only person who could feed the baby, with no one else who could help, and an internal pressure to continue feeding in the context of knowledge about the benefits of breastfeeding. Scott and Colin (2002) found that in addition to breastfeeding problems, allowing partners to assist with infant feeding was one of the most common reasons given for breastfeeding cessation. Previous research has highlighted that women often feel pressure from support services to continue breastfeeding (Coates et al., 2014; Chaput et al, 2015), however the current study did not support this idea.

The second constituent sub-theme was the concept that breastfeeding offered a space for them to spend time bonding with their baby and enhancing their relationship. Research has shown that the frequent skin-to-skin contact, and the release of oxytocin facilitated by breastfeeding may have a positive relationship with the maternal-infant relationship (Feldman, Weller, Zagoory-Sharon, & Levine, 2007; Unvas-Moberg, 2012). Breastfeeding has also been linked to increased maternal sensitivity (Weaver, Schofield & Papp, 2017).

Cultural perception of breastfeeding

This theme demonstrated the importance placed on the cultural perception of breastfeeding, and how this can increase isolation and postnatal distress. Women described a dichotomous relationship between breastfeeding at home, being seen as a 'safe base', and breastfeeding in public as being exposing and threatening. This finding illustrates the importance of creating breastfeeding friendly spaces, and reducing the stigma which has been experienced by this group of breastfeeding mothers. Despite the Equality Act 2010 protecting the rights of breastfeeding women, it is clear that the majority of women interviewed did not feel that adherence to this was sufficient. Previous research has shown similar findings, that breastfeeding women anticipated undesirable attention, and felt vulnerable when feeding in public (Sheeshka, Potter, Norrie, Valaitis, Adams, & Kuczynski, 2001). A survey of 2369 American citizens revealed that 27% considered breastfeeding in public to be 'embarrassing' (Li, Fridinger, & Grummer-Strawn, 2002).

Considering home as a 'safe' base demonstrates a parallel with attachment theory (Bowlby, 1969), whereby human beings are programmed to retreat to safety at times of distress, and are free to explore the world around them once they feel safe. The need to remain in a 'safe' environment whilst experiencing the high levels of physical and psychological distress is important information for support services, to ensure that women are supported in their home environment where necessary, and to monitor those at risk of isolation. A randomised controlled trial found that early support via home visits was most effective in reducing breastfeeding cessation and increasing rates of EBF (Kronborg, Væth, Olsen, Iversen, & Harder, 2007). Other women felt confident to breastfeed in public, but this appeared to be related to the

severity of breastfeeding difficulties at any one time point; the greater the difficulties, the more vulnerable women felt when feeding in public.

Women felt that breastfeeding was not the societal norm, which increased feelings of difference and vulnerability. This fits with the theoretical foundation of social constructionism (Burr, 1995) highlighting how experiences are viewed through the lens of cultural discourse, which impacts on how people make sense of the world around them. The public domain was not viewed as being open to the possibility of breastfeeding, emphasising the need for pressure on businesses to comply with the Equality Act 2010, and for public health campaigns to reduce the stigma around breastfeeding in public. As stated by Suzie "*you wouldn't make someone eat in a toilet, why should a child eat in the toilet?"*, which illustrates the need for society to reduce the taboo on breastfeeding and to provide appropriate breastfeeding facilities.

One day at a time: overcoming obstacles with determination.

This theme emphasised what the women described as a 'stubborn determination' as key to their ability to persevere in the face of adversity. The sub-theme of '*keeping your options open',* included taking one day at a time, and reducing the pressure to breastfeed by acknowledging alternative possibilities. Hegney et al., (2008) found that flexibility, determination and the ability to persevere were predictive of breastfeeding continuation in the context of continued breastfeeding. Within this super-ordinate theme, Women reported that their breastfeeding journey had been one with multiple setbacks, however, all had reached a position of hope, experience and pride as they reflected upon their experiences.

Strengths and limitations

A key strength of this study is the qualitative IPA methodology, which has allowed for an in-depth understanding of what it is like to continue to breastfeed despite having prolonged breastfeeding difficulties. The IPA methodology was conducted with rigour; each level of analysis was discussed and agreed with the research team (MH, PS, VF, JH), themes were developed transparently, with a strong evidence trail, and disconfirming evidence was searched and discussed. This is an area which has not been studied in the same way previously, with other research focussing on the experience of *initiating* breastfeeding under severe difficulties (Williamson et al., 2012; Palmer et al., 2012), or conducted using retrospective methods (Hegney et al., 2008).

However, IPA methodology does have its limitations, for example the necessity for a small homogenous sample (Smith et al., 2009) limits transferability. Although participants were self-selecting, and were not chosen on the basis of education or marital status, all women within the sample were educated (seven had a university degree or higher) and all were married, or living with their partner. This may be a bias in terms of women who are more likely to be interested in research participation, or may be a reflection of the general demographics of breastfeeding women. Research has shown a number of demographic and social variables which predict breastfeeding initiation and duration, such as maternal age, education, and socio-economic status (Dennis, 2002). Women were all recruited via breastfeeding support services, this may have influenced their experiences of continuing to breastfeed despite difficulties, and thus limit the transferability of the findings to other populations who may not have accessed support. It would be beneficial to conduct a similar study with a more diverse sample.

A topic guide was used to ensure that the interviews covered the aims of the study, however a strength of using semi-structured interviews is that women were enabled to share their own experiences and to divulge information that was pertinent to how they make sense of their experience. This allowed for unexpected findings to be revealed, which may not have been predicted by the researcher. However, this study was a cross-sectional design, which limits the information gathering to one time point. This means that valuable detail about change over time may have been missed. Utilising a longitudinal methodology would be beneficial to overcome this challenge.

Implications for breastfeeding women

This study revealed some key findings, which may have implications for other women experiencing postnatal distress in the context of breastfeeding difficulties, including understanding that breastfeeding is a skill, attending to self-care, and utilising the available support services. The women interviewed were keen to share their experiences of what had been helpful, and these concepts were taken directly from the interview transcripts (see Figure 1).

- Expect that breastfeeding is a skill to be learnt (Jade).
- Keep your options open, acknowledge that there are other infant feeding options (Adele).
- Pick and choose the advice which works for you and your baby (Kate).
- Be kind to yourself, don't put on so much pressure (Nicky)
- Don't quit on a bad day (Suzie).
- Ask for help, use the support services available to you (Suzie).
- Don't settle with a bad latch, take your baby off the breast and try again (Ruth).
- Focus on the short term, day by day, rather than the long-term goal of six-months (Lottie and Emily).

Figure 1. Key implications for women experiencing breastfeeding difficulties.

Clinical implications

This study has many implications for clinical practice and for the support of women continuing to breastfeed despite experiencing breastfeeding difficulties. Arguably the most important of which, is the understanding that women in this situation are likely to experience high levels of psychological distress. It is crucial that perinatal services are equipped to support women to address the physical challenges of breastfeeding, but also to provide timely emotional and psychological support. This includes immediately available support for women to access when they have exhausted their own resources, and consideration of pre-natal interventions to prepare women for the realities of breastfeeding.

An interesting finding was the idea that advice from health care professionals could be seen as both conflicting, and as 'lots of different ideas'. This highlights the need for services to be transparent in their policies around giving advice so that women are aware that the advice is not prescriptive, but can be adapted to suit their

individual needs. Lagan et al., (2014) suggest a ‘woman centred’ approach to breastfeeding support, ensuring that women are aided to access support on all types of infant feeding depending on their individual needs.

Access to good breastfeeding support is also dependent on the local commissioning, and services such as Home-Start are not available in all areas. There is a responsibility for NHS services to ensure that all women have readily available access to immediate breastfeeding support, in addition to considering that women may prefer to be supported in their own homes as their ‘safe base’. UNICEF founded the Baby-friendly Hospital Initiative, to ensure that women are supported to successfully breastfeed (WHO & UNICEF, 2009). This includes training health professionals in hospitals, health visiting services and children’s centres to advocate responsive feeding, to support women to make informed choices about infant feeding, and overcome difficulties with breastfeeding.

The findings of this study also demonstrate the importance of the societal perception of breastfeeding, and how this can impact on emotional wellbeing. Women reported feeling discriminated against when accessing breastfeeding facilities, which were unhygienic, being forced to breastfeed in the toilet. There is a need for public health initiatives to reduce the stigma associated with breastfeeding in public, to avoid women feeling that they must hide away. The National Childbirth Trust (NCT) has founded breastfeeding cafés around the UK to encourage breastfeeding women to access support in a social environment, where breastfeeding is accepted (NCT, 2014). However, these are facilitated in private settings, supporting women to breastfeed in comfort, but may do little to increase wider acceptance of breastfeeding within the public domain.

The clinical relevance of these findings can be placed within the broader theoretical context, especially when considering attachment theory. Bowlby (1988/ 2005) highlighted that early attachment experiences predict the quality of emotional bonds to others across the lifespan. Research has shown that early attachment relationships impact on the development of emotional regulation, the quality of social and romantic relationships (Hazan & Shaver, 1987), and intergenerational parenting style (Cassiba, Coppola, Sette, Curci, & Constantini, 2017). Many of the themes within the current study stress the importance of relationships; how the women interviewed related to important others, professional support services and the world around them.

It has been suggested that breastfeeding has a positive association with development of the mother infant relationship (Jackson, 2016; Tharner et al., 2012; Weaver, Schofield & Papp, 2017), however little is known about the impact of breastfeeding difficulties on this relationship. Ainsworth, Bell and Stayton (1971) suggested that for an infant to develop a secure attachment, the parent must be both available, and responsive to their needs. It has been argued that emotional distress may interfere with the mother's ability to be sensitive to the needs of her child (Field, 2010) and therefore distress caused by breastfeeding difficulties may adversely impact on the quality of the relationship.

The women interviewed within this study were all accessing support for their breastfeeding difficulties. This may indicate a propensity for them to be able to seek out help and support when needed. Bowlby (1988/ 2005) argued that the capacity to effectively balance care-seeking and care-giving within relationships is evidence of healthy functioning within an attachment framework. The theme of 'Support and criticism: The influence of personal and professional others' highlights how the

women within this study were able to use care-seeking behaviours to have their emotional needs met in a helpful way. The findings also show women who were able to build emotional bonds with others who had an empathetic stance towards their breastfeeding difficulties.

It is interesting to note that the findings do not indicate any sense of the breastfeeding difficulties and subsequent emotional distress had any impact upon the quality of the mother-infant relationship. It is possible that women felt unable or unwilling to share details which may have reflected negatively on their relationship with their infant, or that this would have been too painful to consider. The findings did show a tendency towards breastfeeding fostering a sense of bonding with the infant, although this was tempered with a pressure of feeling solely responsible for their baby.

Future research

The current study has highlighted the dissonance between the expectations of breastfeeding and the postnatal reality. Valuable research is needed to continue to identify effective strategies to bridge this gap, and to develop support which is tailored to meet this need. A systematic review compared studies of antenatal breastfeeding education, and found no significant differences in the effectiveness of interventions on increasing breastfeeding initiation or duration (Lumbiganon et al., 2012).

Another finding was the strength of the relationship between psychological distress and the sense of vulnerability regarding breastfeeding in public. Research has already been conducted to explore the public perception of breastfeeding (Li, Rock, & Grummer-Strawn, 2007; McIntyre, Turnbull, & Hiller, 1999), however more is

needed to understand how health and public services can enhance their facilities to ensure that women feel safe to breastfeed outside of their home environment.

Many women within this study reported experiencing a closeness with their baby whilst breastfeeding, although this conflicted with the emotional cost of having sole responsibility. Future research could explore this further in the context of infant attachment and maternal bond.

Reflexivity

The IPA methodology recognises that the position of the researcher is an important part of the interpretative analysis (Smith et al., 2009). The researcher found that there were benefits and challenges to having experienced the phenomenon which was being researched. The use of a reflexive diary allowed pre-conceptions to be 'bracketed', which allowed them to be acknowledged without interfering in the interview process, and to assist with, rather than hinder the analysis. One benefit of using IPA was that the emphasis is on understanding the meaning of the phenomenon for each individual, which means that similarities and differences in experience are given equal weighting. The researcher noticed parallels with their own experience, in addition to unexpected findings.

The researcher's position as a mother was briefly acknowledged to increase rapport with participants and to put women at ease at the start of the interview process. Some of the discussions were emotive, and the researcher was careful to listen as a 'researcher' and not to be drawn into a therapeutic process, due to their background as a therapist. Distressing topics were shared within supervision to ensure self-care for the researcher conducting the interviews.

Conclusion

Overall, women had found the experience of breastfeeding much more difficult than they had anticipated. This had led to emotional difficulties in the postnatal period with feelings of despair, and a sense of failure. The women within this study experienced breastfeeding at home as ‘safe’, and found society to be non-accepting of breastfeeding on the whole.

Several factors were identified which helped women to continue to breastfeed despite the difficulties, such as personal determination, access to empathetic and immediate support, and being flexible around infant feeding choices. The concept of services using clear and transparent communication that different breastfeeding techniques are likely to be effective for each individual was discussed. Access to immediately available breastfeeding support was a key recommendation for clinical services.

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Appendices

Appendix A

Newcastle-Ottowa Assessment Scale: Quality evaluation tool for cohort studies.

NEWCASTLE - OTTAWA QUALITY ASSESSMENT SCALE

COHORT STUDIES

Note: A study can be awarded a maximum of one star for each numbered item within the Selection and Outcome categories. A maximum of two stars can be given for Comparability

Selection

1) Representativeness of the exposed cohort

a) truly representative of the average _____ (describe) in the community □

b) somewhat representative of the average _____ in the community □

c) selected group of users eg nurses, volunteers

d) no description of the derivation of the cohort

2) Selection of the non exposed cohort

a) drawn from the same community as the exposed cohort □

b) drawn from a different source

c) no description of the derivation of the non exposed cohort

3) Ascertainment of exposure

a) secure record (eg surgical records) □

b) structured interview □

c) written self report

d) no description

4) Demonstration that outcome of interest was not present at start of study

a) yes □

b) no

Comparability

1) Comparability of cohorts on the basis of the design or analysis

a) study controls for _____ (select the most important factor) □

b) study controls for any additional factor □ (This criteria could be modified to indicate specific control for a second important factor.)

Outcome

1) Assessment of outcome

a) independent blind assessment □

b) record linkage □

c) self report

d) no description

2) Was follow-up long enough for outcomes to occur

a) yes (select an adequate follow up period for outcome of interest) □

b) no

3) Adequacy of follow up of cohorts

a) complete follow up - all subjects accounted for □

b) subjects lost to follow up unlikely to introduce bias - small number lost - > ____ % (select an adequate %) follow up, or description provided of those lost) □

c) follow up rate < ____% (select an adequate %) and no description of those lost

d) no statement

Appendix B

Newcastle-Ottowa Assessment Scale. Adapted for cross-sectional studies.

Newcastle-Ottawa Scale adapted for cross-sectional studies

Selection: (Maximum 5 stars)

1) Representativeness of the sample:

a) Truly representative of the average in the target population. * (all subjects or random sampling)

b) Somewhat representative of the average in the target population. * (non-random sampling)

c) Selected group of users.

d) No description of the sampling strategy.

2) Sample size:

a) Justified and satisfactory. *

b) Not justified.

3) Non-respondents:

a) Comparability between respondents and non-respondents characteristics is established, and the response rate is satisfactory. *

b) The response rate is unsatisfactory, or the comparability between respondents and non-respondents is unsatisfactory.

c) No description of the response rate or the characteristics of the responders and the non-responders.

4) Ascertainment of the exposure (risk factor):

a) Validated measurement tool. **

b) Non-validated measurement tool, but the tool is available or described.*

c) No description of the measurement tool.

Comparability: (Maximum 2 stars)

1) The subjects in different outcome groups are comparable, based on the study design or analysis. Confounding factors are controlled.

a) The study controls for the most important factor (select one). *

b) The study control for any additional factor. *

Outcome: (Maximum 3 stars)

1) Assessment of the outcome:

a) Independent blind assessment. **

b) Record linkage. **

c) Self report. *

d) No description.

2) Statistical test:

a) The statistical test used to analyze the data is clearly described and appropriate, and the measurement of the association is presented, including confidence intervals and the probability level (p value). *

b) The statistical test is not appropriate, not described or incomplete.

This scale has been adapted from the Newcastle-Ottawa Quality Assessment Scale for cohort studies to perform a quality assessment of cross-sectional studies for the systematic review, "Are Healthcare Workers' Intentions to Vaccinate Related to their Knowledge, Beliefs and Attitudes? A Systematic Review".

We have not selected one factor that is the most important for comparability, because the variables are not the same in each study. Thus, the principal factor should be identified for each study.

In our scale, we have specifically assigned one star for self-reported outcomes, because our study measures the intention to vaccinate. Two stars are given to the studies that assess the outcome with independent blind observers or with vaccination records, because these methods measure the practice of vaccination, which is the result of true intention.

Appendix C

PRISMA Checklist

PRISMA 2009 Checklist

Section/topic	#	Checklist item	Reported on page #
TITLE			
Title	1	Identify the report as a systematic review, meta-analysis, or both.	14
ABSTRACT			
Structured summary	2	Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.	15
INTRODUCTION			
Rationale	3	Describe the rationale for the review in the context of what is already known.	21
Objectives	4	Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).	21
METHODS			
Protocol and registration	5	Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.	21
Eligibility criteria	6	Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.	24
Information sources	7	Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.	22
Search	8	Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.	23
Study selection	9	State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).	24
Data collection process	10	Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.	25
Data items	11	List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.	22
Risk of bias in individual studies	12	Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.	25
Summary measures	13	State the principal summary measures (e.g., risk ratio, difference in means).	35
Synthesis of results	14	Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I^2) for each meta-analysis.	24

PRISMA 2009 Checklist

Section/topic	#	Checklist item	Reported on page #
Risk of bias across studies	15	Specify any assessment of risk of bias that may affect the cumulative evidence (e.g., publication bias, selective reporting within studies).	34
Additional analyses	16	Describe methods of additional analyses (e.g., sensitivity or subgroup analyses, meta-regression), if done, indicating which were pre-specified.	N/A
RESULTS			
Study selection	17	Give numbers of studies screened, assessed for eligibility, and included in the review, with reasons for exclusions at each stage, ideally with a flow diagram.	26-27
Study characteristics	18	For each study, present characteristics for which data were extracted (e.g., study size, PICOS, follow-up period) and provide the citations.	28
Risk of bias within studies	19	Present data on risk of bias of each study and, if available, any outcome level assessment (see item 12).	34
Results of individual studies	20	For all outcomes considered (benefits or harms), present, for each study: (a) simple summary data for each intervention group (b) effect estimates and confidence intervals, ideally with a forest plot.	40
Synthesis of results	21	Present results of each meta-analysis done, including confidence intervals and measures of consistency.	N/A
Risk of bias across studies	22	Present results of any assessment of risk of bias across studies (see Item 15).	34
Additional analysis	23	Give results of additional analyses, if done (e.g., sensitivity or subgroup analyses, meta-regression [see Item 16]).	N/A
DISCUSSION			
Summary of evidence	24	Summarize the main findings including the strength of evidence for each main outcome; consider their relevance to key groups (e.g., healthcare providers, users, and policy makers).	52-57
Limitations	25	Discuss limitations at study and outcome level (e.g., risk of bias), and at review-level (e.g., incomplete retrieval of identified research, reporting bias).	57
Conclusions	26	Provide a general interpretation of the results in the context of other evidence, and implications for future research.	59
FUNDING			
Funding	27	Describe sources of funding for the systematic review and other support (e.g., supply of data); role of funders for the systematic review.	None

From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

For more information, visit: www.prisma-statement.org.

Appendix D

Approval from the Research Review Committee

UNIVERSITY OF LIVERPOOL

D.Clin.Psychology Programme
Division of Clinical Psychology
Whelan Building, Quadrangle
Brownlow Hill
LIVERPOOL
L69 3GB

Tel: 0151 794 5530/5534/5877
Fax: 0151 794 5537
www.liv.ac.uk/dclinpsychol

25th July 2016

Michelle Hacking
Clinical Psychology Trainee
Doctorate of Clinical Psychology Doctorate Programme
University of Liverpool
L69 3GB

RE: Exploring the emotional impact of breastfeeding difficulties in the context of continued breastfeeding.
Trainee: Michelle Hacking
Supervisors: Prof Pauline Slade, Dr Jo Harrold

Dear Michelle,

Thank you for your response to the reviewers' comments of your research proposal submitted to the D.Clin.Psychol. Research Review Committee (letter dated 18/07/16).

I can now confirm that your amended proposal (version 2, date 18/07/16) meet the requirements of the committee and have been approved by the Committee Vice-Chair. Please note the Committee have raised a few points overleaf for your attention to discuss with your supervisors as a work in progress.

Please take this Chairs Action decision as ***final*** approval from the committee.

You may now progress to the next stages of your research.

I wish you well with your research project.

Dr Catrin Eames
Vice-Chair D.Clin.Psychol. Research Review Committee.

Appendix E

Participant recruitment poster/ leaflet

UNIVERSITY OF LIVERPOOL

Participants wanted for a research study:

Exploring the emotional impact of breastfeeding difficulties in the context of continued breastfeeding.

We are looking for volunteers to take part in a study exploring what it is like to breastfeed whilst experiencing breastfeeding difficulties, and the emotional impact that this might have. We are interested in what helps women to continue breastfeeding despite experiencing these difficulties.

The research would involve one interview that can be arranged at a time and a place to suit you and your baby.

If you are:

- Over 18
- A first time Mum
- Currently breastfeeding
- Have experienced breastfeeding difficulties lasting 4 weeks or more.
- .....and have a baby aged between 6 and 16 weeks old

Then you may be eligible for participation in this study!

If you are interested in taking part, or would like to find out more about the study, please contact Michelle Hacking: mhacking@liverpool.ac.uk

Version 1 **09/02/17** **IRAS: 221744**

Appendix F

Participant information sheet

Participant Information Sheet

Exploring the emotional impact of breastfeeding difficulties in the context of continued breastfeeding.

Researcher: Michelle Hacking

University of Liverpool

You are being invited to participate in a research study being completed as part of a doctorate in Clinical Psychology. Before you decide whether to participate, it is important for you to understand why the research is being done and what it will involve.

Please take time to read the following information carefully and feel free to ask us if you would like more information or if there is anything that you do not understand. Please feel free to discuss this with your friends, family and health visitor if you wish, and joining the study is entirely up to you. The researcher will also go through this information sheet with you, to help you decide whether or not you would like to take part and answer any questions you may have.

Thank you for reading this information sheet.

What is the aim of the study?

Breastfeeding difficulties are very common and can impact on the way that new mums feed their baby. There is very little known about the emotional impact that breastfeeding difficulties can have on women who continue breastfeeding through these challenges. This study will help us to understand the experiences of women breastfeeding whilst experiencing difficulties, and to explore what enables women to continue to breastfeed. This information will allow health professionals to make sure that new mums experiencing breastfeeding difficulties can be supported in the best way possible.

Why have I been asked to take part?

You have been invited to take part in this study because you are a first time Mum who is over 18 and have a baby who is between 6 and 16 weeks old. You have told

us that you have experienced a difficulty with breastfeeding your baby that lasted for four weeks or more, and are still currently breastfeeding for most of your baby's feeds (at least four out of every five feeds).

Do I have to take part and can I change my mind?

It is completely up to you. You only take part if you agree to. If you decide later on that you no longer wish to take part, then you can withdraw from the study.

What happens if I take part?

You will be asked to take part in an interview, lasting up to one hour, with the researcher at a time and place which is convenient for you. Your baby will be able to stay with you throughout the interview and you will be able to take a break whenever you need to. You will first be asked to complete a consent form to say that you agree to take part in the study. The researcher will ask you a few short questions about your circumstances such as your age and employment status and about your baby such as gender and type of birth.

The interview will be like a conversation about your own experiences, thoughts and opinions, and you will only need to share what you feel comfortable with. The interview will be audio-taped so that it can be typed up for analysis.

Where will the research take place?

The research will be carried out at a place that is most comfortable for you and your baby. You may decide that you would like the interview to take place in your own home, or at a local children's centre or library at a time to suit you.

What will happen to my information?

All the information that you give the researcher will remain confidential and any identifiable data, such as your name, will be changed on all records so that no one will else will know your name or personal details. If you agree, direct quotes from your interview may be used within the write up of this study, although all names would be changed to keep any quotes anonymous.

Interviews will be typed up by a member of the research team, or a paid transcriber approved by the University of Liverpool. Paper copies of information will be kept in a locked filing cabinet, only accessible to the research team until the time of publication when they will be destroyed. Records stored on a computer hard drive will be erased using software applications designed to remove all data from the storage device.

Confidentiality

All your information will be kept confidential and will be non-identifiable. Only where there is significant risk to self or other, the researcher would follow existing trust policies.

What will happen if I want to stop taking part?

If you decide at any point that you no longer wish to be part of the study, then you can withdraw, up to the point of analysis, and do not have to give a reason for this. You can also request for your data to be destroyed if you decide to withdraw from the study. As the data you will provide will be anonymised, it is only possible to withdraw results prior to anonymization, usually two weeks after then interview.

What will happen to the results of the study?

The findings will be written up as part of a thesis for the Doctorate of Clinical Psychology. It is also hoped that the research will be published in an academic journal, and may be shared at conferences. You will be asked on the consent form if you wish to have the findings sent to you once the study is finished.

Are there any risks to taking part?

There are no anticipated risks to taking part in this study, however it may temporarily highlight existing distress. If this should happen you would be supported by the research team and given details of support services that are available in your local area.

What are the benefits of taking part?

There are no direct benefits to taking part in this study, however it is hoped that this research may help others with breastfeeding difficulties to be supported in the future. We will provide you will a list of help and support services that are available within your local area, and we will keep you updated on the findings of the study.

What if there is a problem?

If you are unhappy, or if there is a problem, please feel free to let us know by contacting the Chief Investigator Professor Pauline Slade (0151 794 5485) and we will try to help.

If you remain unhappy or have a complaint which you feel you cannot come to us with then you should contact the Research Governance Officer on 0151 794 8290, or email: ethics@liv.ac.uk.

What if I have any questions?

We will be very happy to answer any questions that you may have about the study or about taking part. You are able to contact the research team on the details provided below:

Principal Investigator Michelle Hacking mhacking@liverpool.ac.uk	Chief Investigator Professor Pauline Slade Ps1ps@liverpool.ac.uk 0151 794 5485
Secondary Supervisor	Research Advisor

Dr. Jo Harrold harrold@liverpool.ac.uk 0151 794 1136	Vicky Fallon vfallon@liverpool.ac.uk 0151 794 1402

Thank you for taking the time to read this participant information sheet.

Appendix G

Participant consent form

UNIVERSITY OF LIVERPOOL

Participant Consent Form

Study title: Exploring the emotional impact of breastfeeding difficulties in the context of continued breastfeeding.

Researcher: Michelle Hacking (mhacking@liverpool.ac.uk)

	Please tick or initial box
1. I confirm that I have read the information sheet dated 19/06/17 (version 3) for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time up to the point of analysis, without giving any reason, and that I can decline to answer any question if I wish.	☐
3. I understand that my information will be kept confidential, and that any personal details will be removed from the data, including all names being changed. However, in the rare case that there are any disclosures about issues such as safeguarding, exploitation, harm, or drug or alcohol abuse, confidentiality may have to be broken so that the appropriate course of action can be taken.	☐
4. I agree for audio recording to be used for the duration of the interview, and for this audio tape to be typed up.	☐
5. I agree that direct, anonymised, quotes from my interview can be used in the writing up and publication of this study.	☐
6. I agree to take part in the above study.	☐

Version 2 19/06/17 IRAS: 221744

7. I would like to be sent the findings of the study once it is complete.

☐ **Yes** ☐ **No**

If you have indicated that you would like to be sent information about the findings of this study, please indicate how you would like to receive this information:

☐ Email……

☐ Post to the following address……
……
……
Postcode……

Name of Participant	Date	Signature
Name of Researcher	Date	Signature

Appendix H

Consent to contact form

Consent to Contact

Exploring the emotional impact of breastfeeding difficulties in the context of continued breastfeeding.

I am interested in your study and would like you to contact me and provide more information regarding taking part in your research.

Name: _____

Age: _____

Address: _____

_____

_____

_____

Contact phone number: _____

Email address: _____

I _____ consent to Michelle Hacking (Trainee Clinical Psychologist) contacting me to discuss this study in more detail and to answer any questions that I may have.

Appendix I

Topic guide used for semi-structured interviews

Demographic Questions *(To be asked verbally after obtaining written consent, prior to the interview commencing)*

Age

Employment prior to birth (plans to return to work?)

Level of education

Relationship status

Demographics of baby

Age

Gender

Birth weight

Any health problems

Method of birth

---

1. Why did you choose to breastfeed your baby?

Prompts:

- How did you come to the decision to breastfeed?
- What were the factors which helped you to make up your mind?
- How did you feel about breastfeeding? (When pregnant/ after baby was born)

2. Please can you tell me about the difficulties that you have experienced, or have been experiencing with breastfeeding?

Prompts:

- When did they start?
-What happened over time?
- What was the biggest challenge of having these difficulties?
- How is this now?

3. How do you think these difficulties have impacted on how you have been feeling since the birth of (name)?

Prompts:

- What has this been like for you?

- What changes in your mood/ emotions have you noticed because of the difficulties?

- How did you feel when it was time to feed your baby?

4. What do you think has enabled you to continue breastfeeding?

Prompts:

- Friends/ peers

- Partner

- Family

-Personal strengths

5. Why did you continue breastfeeding despite having these difficulties?

Prompts:

- How did you come to the decision to continue breastfeeding?

- How did the opinion of other people contribute to you continuing to breastfeed?

6. How would you describe your emotions when the feeding difficulties were at their worst?

Prompts:

- How are things now?

- How did this impact on your ability to carry on breastfeeding?

- What was helpful to you at this time?

7. How has your experience of these difficulties affected your relationship with others around you?

Prompts:

-Partner

-Baby

-Family/ friends/ health professionals

8. How have the breastfeeding difficulties impacted on your experience of life as a new mum?

Prompts:

-In what way?

-How do you feel about that?

-Would you have done anything differently?

-Do you still feel that this is the case?

9. What is it about you that allowed you to continue breastfeeding?

Prompts:

-personal strengths

-resilience

-have you always felt that way?

- How have you been in the past if things have gotten in your way?

10. How could you have been best helped to continue?

Prompts:

-any additional support?

-peers

-health professionals

11. Is there anything else that I haven't asked you that you feel would be important to talk about?

Prompts:

-Is there anything else you would like to add or expand on?

- Is there anything that I have missed?

Debrief

Do you have any questions you would like to ask me about the research?

How do you feel at the end of the interview?

How did you find taking part in the interview?

Thank you again for taking part in this research (go through the help and advice sheet with the participant).

Appendix J

Support and advice sheet given to participants on completion of interview

Support and Advice

Throughout this study the researcher will be sensitive, non-judgemental and provide support and reassurance. However, the researcher is not trained to provide professional advice, nor to diagnose or treat any problems you may have. For this reason, we have provided a list of relevant local and national agencies that will be able to offer professional guidance and support should you feel you need it. For any medical issues relating to you or your baby, your GP, midwife or health visitor is always the best person to speak to.

National Support

PANDAS – Pre and Postnatal Depression Advice and Support

Pandas Foundation is the leading UK charity in supporting families suffering from pre (antenatal) and postnatal depression. Offering sufferers and their families support and advice to help aid their recovery.

- Telephone: 0843 2898401
- Website: www.pandasfoundation.org.uk
- Phone lines are open 9am till 8pm. Mon – Sun

MIND

The leading mental health charity in the UK

- Telephone: 0300 123 3393
- Email: info@mind.org.uk
- Website: www.mind.org.uk
- Phone lines are open weekdays 9am-6pm

Anxiety UK

Anxiety UK was established to promote the relief and rehabilitation of persons suffering from agoraphobia and associated anxiety disorders, phobias and conditions, in particular, but not exclusively, by raising awareness in such topics. Also provides support for pre and postnatal anxiety.

- Telephone: 08444 775 774
- Website: www.anxietyuk.org.uk
- Phone lines are open Mon-Fri 9.30-5.30

Family Lives
An organisation providing immediate help from volunteer parent support workers 24 hours a day, seven days a week.

- Telephone: 0808 800 2222 (textphone: 0800 783 6783)
- Website: http://familylives.org.uk
- Opening hours: 24 hours a day, 365 days a year

Gingerbread: single parents, equal families
Help and advice on the issues that matter to lone parents.

- Telephone: 0808 802 0925
- Website: www.gingerbread.org.uk

National Childbirth Trust

A leading charity for parents, supporting people through pregnancy, birth and early parenthood.

- Telephone: 0300 330 0771
- Website: www.nct.org.uk
- Open every day, 8am-Midnight, including bank holidays

National Breastfeeding Helpline

An independent source of support and information for breastfeeding women and others. Run by the Association of Breastfeeding Mothers and the Breastfeeding Network

- Telephone: 0300 100 0212
- Website: http://www.nationalbreastfeedinghelpline.org.uk/
- Open 9.30am – 9.30pm every day of the year

The Samaritans

- Telephone: 116 123
- Email: jo@samaritans.org
- Open 24 hours a day, 7 days a week

Local support and advice

Home-Start Breastfeeding Support

Providing infant feeding peer support to every breastfeeding mum in Tameside and Oldham.

- Home-Start helpline: 0161 344 0669
  07802 883 947
- Open Monday- Friday 9am- 6pm

Healthy Minds Oldham

Offering support and treatment for those who are experiencing symptoms such as difficulty sleeping, low mood / depression, stress, worry or anxiety, including postnatal depression.

- Telephone: 0161 716 2777
- Self- referral via their website: www.penninecare.nhs.uk/your-services/service-directory/oldham/mental-health/adults/oldham-healthy-minds/
- Open Monday- Friday 9am – 5pm

The Sanctuary

Mental health crisis line for anyone over the age of 18.

- Telephone: 0300 003 7029.
- Website: www.selfhelpservices.org.uk/the-sanctuary
- 24 hours a day, 7 days a week.

Baby Bistro Breastfeeding Support Groups

Regular group support provided across the borough (please see timetable attached).

Baby Bistro Breastfeeding Support Groups in Oldham

Home Start
Support and friendship for families

Monday

Shaw & Crompton Children's Centre
High Street
Shaw
OL2 8RF
Tel: 0161 770 5308
9.30 am to 12 noon
Tea/Coffee & toast available
All Year Round

Tuesday

Saddleworth North & South Children's Centre
Holy Trinity C of E Primary School
Delph New Road
Dobcross
OL3 5BP
Tel: 0161 770 5856
1.15pm to 2.30 pm
All Year Round

Wednesday

Play! (Soft Play Centre)
Higginshaw Lane
Oldham, OL2 6LH
Tel: 0161 344 0669
10 am to 12 noon
Home-Start/BfN Group
Term Time Only

Failsworth Children's Centre
Propps Hall Primary School
Propps Hall Drive
Failsworth
M35 0ND
Tel: 0161 770 8398
1pm to 2.30 pm
All Year Round

Hollinwood Children's Centre
St Chad's Centre
Lime Green Parade
OL8 3HH
Tel: 0161 344 0669
9.30 am to 11.30 am
Home-Start/BfN Group
All Year Round

Quality first and foremost

Thursday

Holly Grove Children's Centre
Bare Trees Primary School
Holly Grove
Chadderton
OL9 0DX
Tel: 0161 770 5384
10 am to 12 noon
All Year Round

Friday

Cheeky Chimps Play Centre
Acorn Street
Lees
OL4 3PD
Tel: 0161 344 0669
10 am to 12 noon
Home-Start/BfN Group
Term Time Only

Local and National Contact Numbers:
Home-Start Infant Feeding Support 0161 344 0669 Monday to Friday 9 – 5 (07802883947 Out of Hours)
National Breastfeeding Helpline (9.30 am – 9.30 pm) 0300 100 0212.
Jo Mayall – Infant Feeding Co-ordinator 07974440435

Oldham

Public Health England

What if I have any questions?

If you have any concerns or questions after the interview, then please contact any member of the research team on the details below:

Principal Investigator Michelle Hacking mhacking@liverpool.ac.uk	Chief Investigator Professor Pauline Slade Ps1ps@liverpool.ac.uk 0151 794 5485
Secondary Supervisor Dr. Jo Harrold harrold@liverpool.ac.uk 0151 794 1136	Research Advisor Vicky Fallon vfallon@liverpool.ac.uk 0151 794 1402

If you have a comment or a complaint, which you feel you cannot talk to us about, you should contact the Research Governance Officer on 0151 794 8290, or email: ethics@liv.ac.uk.

Thank you for your participation in this study ☺

Appendix K

Statement regarding the position of the researcher

Reflexive Statement

The researcher is a 34-year-old mother of two children, who experienced breastfeeding difficulties following the birth of her children several years ago. This experience impacted on her mood, relationships and the experience of being a mother in the early postnatal period.

These experiences led to an interest in breastfeeding difficulties and how this might affect other women. The researcher's clinical role as a Trainee Clinical Psychologist was also reflected on throughout the process.

Previous experiences, beliefs and assumptions were acknowledged, discussed within research supervision, and a reflexive diary was kept to ensure that they did not influence the interview process, or allow pre-conceptions to direct the interpretations.

Appendix L

Example transcript with analysis

Interview 1

21/12/17

11:30am

Researcher: Michelle Hacking

Transcriber: Michelle Hacking

Interviewee: R

Prevailing opinion

I: first of all, why did you choose to breastfeed your baby?

BF is best - fact.

R: Erm... I think just the general knowledge that it is.. that it is best. I said right from the start that I was prepared to give it a go, and that we would just see. And also that one of my friends has got an 18-month old (now) and she breastfed him. That's kind of the first baby that I've had any, kind of much contact with so from her experience seeing that and just, its kinda easier in some respects in that you don't need much paraphernalia, you can, and you know if you're going out, you can just take yourself and you don't need to faff around with bottles or anything. So I just kind of like..., I never thought it was the easy option, but I could definitely see that there were some benefits, for me, as well as knowing that obviously it would be the best thing for him. Erm... so yeah.

influence of others

BF is easier - less equipment

Never thought it was the easy option

I: so it sounds like you had kind of weighed up some of the pro's and con's; saw that your friend was doing that, and felt like that was the best option for you and your baby.

R: Yeah, and like I say, I said I would just give it a go and see how we got on. Erm.. I was never kind of dead fixed that I would kind of be breastfeeding. If it had really gone awfully, then I wasn't .. I would have been prepared to look at other options and, and, feed him formula, but yeah, it was always my first choice.

Have a go - Pragmatic attitude

keeping her mind open.

I: your intention

R: Yeah.

I: Okay, and how did you feel about breastfeeding when you were pregnant?

Straightforward/easy decision.

R: Erm, I don't think I really gave it that much thought, other than the initial- well that was my plan. I never really gave it much more thought, until antenatal classes, erm, then there was a breastfeeding session with that, and that was the first time that I really actually thought about what it was going to entail, although it didn't prepare me for it one bit (laughs). In theory, it all sounds all wonderful and you think, oh yeah that, that's a doddle (laughs) and it wasn't quite like that, but yeah that was the first time really that I had ever really given it any in-depth thought, certainly.

lack of Preparation antenatally

unrealistic expectations during pregnancy

I: Yeah. Okay, and so you mentioned that your friend was breastfeeding previously.

R: Yeah.

I:...and also the antenatal classes had some information about it. Were there any other factors that helped you to make up your mind about feeding?

R: there is the fact that it burns 500 calories a day (laughs)

Personal benefits

I: (laughs) Okay..

R: I think that's, yeah, that's beneficial (laughs). But no I don't think so, I think that was, that was it. And I think just knowing that breastmilk is the best, you know, its natural isn't it. That's erm.. anything else is an artificial replication of it. It's like, you know, in my pregnancy, I didn't want to

Natural

Natural

Breastmilk is best - implicit knowledge.

Interview 1 21/12/17 M. Hacking

take multi vitamins, I mean I would take something if I was deficient in it but erm.. I didn't really see the point in taking vitamins for the sake of it, I'd rather get it through diet, because that's a much more natural way to get it, and to me, I think that to me that's just a much more natural way..

I: so quite a natural..

R:.. yeah I think it was just kinda an evolution of that really, I suppose.

I: Thank you. Erm... so can you tell me about the difficulties that you experienced, or have been experiencing with breastfeeding?

R: erm.. mostly it all stems from difficulty latching him on, so I've had pain, cracked nipples, I've had.. well, just pain in general really. Erm, I've had times when, certainly early on, I've really struggled to get him latched on at all, and then he's screaming, and then you just get more and more stressed out. Erm and I think then end up settling, you get a bad latch, but you think well he's feeding so just let it be and then that causes damage and then you're even more sore next time around, so yeah.

I: and where would you say that the difficulties started? I mean, was it right from the beginning, or... ?

R: Erm, yeah, it sort of went in fits and starts. At the beginning, it was difficult because it was all brand new, erm and then I felt like I kind of got to grips with it, I had quite good support in hospital, I was in hospital for four days in the end...

I: Okay..

R: erm.. because they thought he might have an infection, which he didn't have, so as a precaution they kept us in. Erm so yeah I thought I had really good support there, and then really got to grips with it, and then I think I came home erm and probably fell into bad habits with it, erm like letting him stay latched on even when it was a little uncomfortable because it was the middle of the night, and he was feeding and it was better than having him crying, and erm.. and then from there it sort of just spiralled to me getting very, very sore, erm and then I've had some support again from the home-start people and improved things, and then kind of like let, erm, I don't know if it is bad habits or if, I don't know, it's just kind of difficult. It's the middle of the night, you know, you're trying not to turn all the lights on cos you don't want to wake him up too much, so you're trying to latch him on, fumbling around in the dark or dim light, and erm.. and he's tired so he's not really as alert, I mean he knows what he's doing for the most part, but...

R: sound like the nights are quite challenging..

R: yes the nights are, definitely, at the moment what are causing the most issues. So I'm, I'm definitely better at it during the day, erm and I think I've got more patience during the day because you're not, because its day time, because you should be awake, I've got the patience to say that, to, to make sure he is latched on properly or to take him off and start again, and if he starts crying, that' s okay. But if he starts crying in the middle of the night, particularly if husband is asleep as well, and I've got two cats so if they hear noise, they start banging on the door wanting to come in so they're a nuisance as well. Erm, so yeah, night times are definitely difficult.

I: yeah, ok. Can I just take you back because you said that when you were in hospital for four days you had really good support. Can you tell me a little bit more about that?

R: Erm, I think just having the midwives and there were the erm, home-start people. Erm, and I found it really helpful, they all had different ideas, erm, and they weren't all brilliant, but there were

Natwal way

Overwhelming - baby crying

Pain

feeling Stressed

"making do" - With bad latch.

Need to learn + master the technique.

Pain - can't latch

Baby crying

New experience

Hospital Stay - Positive Support

Benefits of hospital support

make do

make do with bad latch

Spiralled

Support improved

Stress of night time feeds

key times when things feel worse.

"Better at it" - a skill

Doing it right - getting latch correct

Different Pressures in the night.

What support looked like - different ideas.

Interview 1 21/12/17 M. Hacking

Different opinions

some who were very, very good, erm there were some who were less interested. Erm but the ones who were good they, they all had different ideas and different suggestions and I found because, because there was such a big turn-over of staff with the different shifts. and all the different people around and because they all had different ideas, I could take the bits of what they said, because bits of it worked for me, and bits of it didn't so they said "oh well try this" and it just didn't work, but then the next person came along and said "oh try this" and I was like, oh, that, that worked. Erm and I think the benefit was having lots of different people with different ideas. and I think I'd have missed out on that had I been at home because you might have only had that one support worker who comes out to see you, or you have your one midwife visit erm, whereas, you know I was seeing, sort of four-five different people a day, and the call bell is really handy when you just can't get him, latched, and you're just like, can you just come and help me. Erm that was really helpful, so yeah, just different people's ideas. Erm and they would actually come and be hands on, erm... which I was comfortable with and actually latch him for me so that I could see, particularly in the very early days, so that I could see what it was meant to look like because you've got no idea. And you know they can bring the woollen balls round, woollen boobs round as much as they want but it doesn't teach you anything until you're actually doing it with a real baby. Nothing can, nothing can teach you it really, erm other than that hands on, sort of there and then support.

I: and what's happened to breastfeeding difficulties over time?

Importance of recognising early signs.

R: erm, like I said, they kind of come and go a little bit. I think I'm getting better at recognising the early signs of a problem. Erm I think I am getting better at taking him off and on again, because I've been through that cycle enough times to know that it's of no benefit to just let him feed because oh well its best if he's feeding. And you know, if he's hungry he'll feed so, and because he's gained weight well, so the pressures off. I think that in the early days the pressure's really on, erm so because you don't want them to lose too much weight and there's all that pressure. I mean it's quite common isn't it for breastfed babies to lose weight erm and I think there is a pressure with that you think erm. I know my friend who breastfed she was having to wake him up every two hours during the night because he'd lost so much weight that erm they needed to and I think that that type of thing then puts that additional pressure on you because you, almost like you feel you're failing them if they are not putting on enough weight. Erm so there's that pressure to, cos I guess it comes down to the fact that you're solely responsible aren't you? so erm when you're feeding them yourself there's no one else who can help. I mean, I'm fully responsible for all of his weight gain, that can only come from me. Erm nothing else, and I think there is a pressure with that. Erm I am quite proud of it as well in where we've come, but yeah, there is definitely a pressure with it.

I: Yes, erm... and did you have difficulties with weight gain?

Baby is ok – mum suffer

R: no, he was really good (laughs) erm, the all the support workers have said he's obviously getting what he needs, it's just me that's suffering. Erm, yeah, but I think that's cos I've pushed on with it, even when its hurt I've, I've let him feed and just carried on with it and persevered. Which, like I say in some respects has caused me more problems in terms of my pain, but it has meant that he's, that he is a good feeder, he's a greedy boy basically (laughs).

I: (laughs) so other people are giving you that feedback that he's doing really well with the milk that he is getting...

R: yeah and they said like when he got weighed that he's maintaining his line on the growth charts (great) yeah, he's a chunk- aren't you..

Relief
Hindsight – know it was worth it?

comparing different support.

Variety of ideas as a +ve

Hands on support was good

lack of prep

Solutions

worry about baby losing weight.

- Pressure of gaining weight

Sole person - pride - responsibility

Persevere

no idea what to do.

call bell

gaining experience

pressure

I: erm, and what would you say has been the biggest challenge of having these difficulties in your life?

R: um… what do you mean by that..?

I: so, out of all the challenges that you have faced with breastfeeding, what do you think has been the biggest challenge for you?

R: erm… I think the pain, it, it is so painful sometimes, particularly when you've developed a problem and… there's no real easy solution to it because you can't just rest that side, you can't just not feed on it for a bit and say "well I'll just have a break from that", because then you get engorged and that, and that doesn't.. and blocked ducts and all the rest of it, so that doesn't help you out at all, erm… so and I've definitely got to the point sometimes when I know I've got to feed him on a bad side and I've got like, the fear, because I know how much its gonna hurt. Erm, and kind of getting him on in the first instance, erm.. so I guess like the mental challenge of gritting your teeth and getting through that because you know you've not really got any other option. Erm, I had tried pumping to erm alleviate that, erm, when it got really, really bad when I was at my sorest, erm, I pumped, but to be honest, it's so much faff I just find it easier to keep (laughs), because it feels like you're doing it twice if you're pumping because you, and particularly if I'm home on my own, its easier if my husband is here because he can hold him. But if i'm here on my own he needs feeding anyway, and then he falls asleep on me and then you haven't got the hands free to pump as well. So I, I do find pumping a real nuisance. So it hasn't really helped, I mean I was given it as an option that well, you could try this, and like I say, I did, erm, but I didn't find it particularly helpful.

I: okay, and so you kind of alluded to this earlier on, but erm, how do you think the difficulties with breastfeeding have impacted on how you've been feeling in yourself?

R: erm, there's definitely been times when I've been close to packing it in, erm because its unrelenting, its.. there's no let up from it. There's no… erm… there's no kind of hope of a decent nights' sleep because you know regardless you're going to be up at least every four hours, whereas my husband can have a night off from it because it's like well I'll do the feeds tonight, and he can come and sleep downstairs and not hear it all, and be out of it and you've got no, no let up from it. Erm… and I think that pressure of knowing that it's all down to you. Particularly when you are sore, there have been times when I've just cried because I know I've got to feed him again and you're exhauseted and you just think, I just need a break, I just want some time off from it, and there isn't an option for that. So yes, that's definitely been hard…

I: so it sounds like that sort of, that unrelenting nature of it, that it's just ongoing all the time, and also the pressure that its all down to you. There's nobody else who can do that job.

R: yeah..

I: yeah.. and have you noticed any changes in your mood or emotions because of the difficulties?

R: erm… at times, yes, I wouldn't say any kind of permanent changes, but yeah there have been times when im quite short tempered because of it, erm, but whether that's because of the breastfeeding difficulties specifically, or just the nature of having a new born baby (yeah), but yes definitely erm… kind of short tempered with it. I've cried quite a few times over it, erm, I've cried when he's, when I've spent ages feeding him and he's thrown it all up and I think just what a waste, erm and you're sleep deprived so you just cry (laughs) erm and so yeah, but I wouldn't say… erm, I have good days and bad days with it. And I have more good days than bad days, I have bad moments

Appendix M

Plans for dissemination of research findings

The researcher intends to disseminate the findings of this systematic review and empirical paper through a variety of mediums:

1. Submitting the systematic review for publication in *Maternal and Child Nutrition*.
2. Submitting the empirical paper for publication in *Maternal and Child Nutrition*.
3. Presenting the research findings at the University of Liverpool's annual research conference.
4. All participants who indicated on the consent form that they wish to receive a copy of the findings will be sent a summary of the research results.
5. Disseminating the findings at the Home-Start peer supporter's group supervision meeting.
6. Presenting the research findings to the infant-feeding health visiting team at Bridgewater NHS Trust.
7. Disseminating the findings to the Research and Development lead within the Bridgewater NHS Trust, who will share the information within the organisation.