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**Paper:**

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**Title:** Differences in the emotional and practical experiences of exclusively breast feeding and combination feeding mothers.

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**Abstract**

*Background*: The majority of research examining the barriers to breastfeeding focuses on the physical challenges faced by mothers rather than the risks of encountering negative emotional and practical feeding experiences.

*Objective:* To quantify the emotional and practical experiences of the overall sample of breastfeeding mothers and identify the differences in the emotional and practical experiences of exclusively breastfeeding mothers (EBF) and combination feeding mothers (Combi), by feeding type and intention.

*Design, Setting and Participants:* 845 mothers with infants up to 26 weeks of age and who had initiated breastfeeding were recruited through relevant social media via advertisements providing a link to an online survey.

*Variables studied:* Predictors of emotional experiences included guilt, stigma, satisfaction with feeding method, and the need to defend themselves due to infant feeding choices. Practical predictors included perceived support from health professionals, main sources of infant feeding information, and respect from their everyday environment, workplace, and when breastfeeding in public.

*Outcome measures:* Current feeding type and prenatal feeding intention.

*Results:* In the overall sample 15% of the mothers reported feeling guilty, 38% stigmatised and 55% felt the need to defend their feeding choice. Binary logit models revealed that guilt and dissatisfaction were directly associated with feeding type, being higher when supplementing with formula. No associations with feeding intention were identified.

*Discussion and conclusions:* This study demonstrates a link between current breastfeeding promotion strategies and the emotional state of breastfeeding mothers who supplement with

formula to any extent. To minimise the negative impact on maternal wellbeing it is important that future recommendations recognise the challenges that exclusive breastfeeding brings and provide a more balanced and realistic target for mothers.

**Key messages:**

1. Mothers who supplement their breastfeeding with formula are almost six times more likely to feel guilty and three times more likely to feed dissatisfied with their infant feeding choice than mothers who exclusively breastfeed, with the guilt being internally sourced.

2. Mothers who exclusively breastfeed often face externally induced guilt, with family being the most frequently reported source.

3. While nursing in public may be anticipated to be the most popular source of stigmatisation experienced by breastfeeding mothers, the vast majority of participants reported that the public response was moderately to very respectful.

4. Despite current legislation and policy regarding working rights of mothers, a need to defend feeding choices in the workplace was reported by exclusively breastfeeding mothers.

## Introduction

Although breastfeeding initiation rates have steadily increased in the UK over the past two decades; 62% in 1990 to 81% in 2010 (Bolling et al., 2007; McAndrew, F., Thompson, J., Fellows, L., Large, A., Speed and Renfrew, 2012), the number of mothers who breastfeed their infant exclusively has failed to rise. In 2010, just 1% of women were exclusively breastfeeding up until the nationally recommended six month juncture (McAndrew et al., 2012). It appears that despite virtually all mothers and healthy term babies possessing the physiological capacity to successfully breastfeed, the majority (88%) use formula in some quantity in the first six months (McAndrew et al., 2012). This indicates the presence of

factors creating barriers to the most health promoting infant feeding outcomes (Neifert and Bunik, 2013).

Quantitative literature examining the barriers to breastfeeding has been orientated towards the physical challenges encountered by breastfeeding mothers. On the other hand, a large body of qualitative literature has previously highlighted the negative emotional and practical experiences of exclusively breastfeeding and combination feeding mothers (Burns et al., 2010; Hauck et al., 2002; Hegney et al., 2008; Lee, 2007; Leeming et al., 2013; Nelson, 2006; Thomson et al., 2015; Wray, 2013). Moreover, in a number of studies these experiences are looked at through the lens of postnatal depression and its association with breastfeeding initiation, duration, exclusivity, or related difficulties (Brown et al., 2016; Dennis and McQueen, 2007, 2009; Henderson et al., 2003; McCarter-Spaulding and Horowitz, 2007; Shakespeare et al., 2004). However, breastfeeding mothers without a postnatal mood disorder are also susceptible to negative emotional responses. Whilst many consider breastfeeding as a cornerstone of their maternal experience, a body of qualitative work highlights an array of potential negative emotions. These include shame about breastfeeding in public (Davis, 2004; Taylor and Wallace, 2012), embarrassment about breastfeeding in front of family and friends (Smyth, 2008), and stigmatisation for breastfeeding in a “bottle feeding culture” (Scott & Mostyn, 2003; Dykes & Moran, 2003).

Current breastfeeding promotion may inadvertently contribute to negative feeding experiences. Although designed to convey the health benefits of this approach to infant feeding it may instead situate breastfeeding as the “moral” and “responsible” mothering choice (K. Williams et al., 2012b). As a result, failure to breastfeed becomes a major source of both internal and external guilt and stigma (Knaak, 2010; Marshall et al., 2007). Breastfeeding mothers may feel direct and indirect external pressure to supplement or substitute breastfeeding with formula (Arora et al., 2000; Baranowski et al., 1983; Tanner and

Cockerill, 1996). With the decision to introduce formula considered suboptimal, qualitative studies often report that mothers also feel the need to internally justify this choice. (Stewart-Knox et al., 2003; Tanner and Cockerill, 1996; K. Williams et al., 2012a, 2012b).

Mothers who exclusively breastfeed for the first six months of their infant's life are acting in accordance with current guidelines. Yet, this moralistic approach still renders them susceptible to negative emotional responses to the feeding process. The source of these emotions can be different from those who formula feed their baby (K. Williams et al., 2012b) and may reflect a perceived internal conflict between their sense of duty as a mother and a desire to attend to their own personal needs (Hauck and Irurita, 2003). Exclusively breastfeeding mothers can also find themselves facing conflicting and incompatible expectations from their close external environment, with family, work and social obligations proving unavoidable burdens to breastfeeding (Wray, 2013).

This large-scale internet study is the first to quantify the emotional and practical experiences of an overall sample of breastfeeding mothers and identify the differences in the emotional and practical experiences of exclusively breastfeeding mothers (EBF) and combination feeding mothers (Combi), by feeding type and intention. It was hypothesised that mothers who chose to supplement with formula (Combi) would be more susceptible to negative experiences as opposed to those who chose to exclusively breastfeed (EBF). Furthermore, it was proposed that the source of negative feelings would differ according to feeding type with negative emotions in EBF mothers arising from external sources and in combi mothers from internal sources. Finally, with a related survey of formula feeding mothers (Fallon et al, in submission) reporting a strong association between feeding intentions in pregnancy and negative feeding experiences, a further aim was to examine whether the experiences of breastfeeding mothers would also differ according to feeding intention in pregnancy.

## Method

### *Ethical approval*

The study gained ethical approval from the University of Liverpool Institute of Psychology, Health and Society Ethics Committee in March 2015. All aspects of the study were performed in accordance with the 1964 Declaration of Helsinki. Participants were provided with an information sheet and informed consent was gained with a tick box. The online survey was accessible from 30/3/2015 to 12/4/2015.

### *Participants and Demographics*

A total of 845 mothers of infants up to 26 weeks of age, who were currently breastfeeding in any quantity, were recruited through relevant social media sites and mailing lists via advertisements providing a link to the Qualtrics survey software. The 26 weeks cut off point applied reflects the current WHO exclusive breastfeeding recommendations (WHO, 2015). The advertisements stated that participants were invited to take part in a short study which would examine the opinions and experiences of breastfeeding mothers. Women who were exclusively formula feeding, younger than 16 years of age, or non-English-speaking, were not eligible to participate. Of the 845 participants, 151 (17.9%) were excluded from final analyses as they did not complete the study. A further 7 participants, who reported the intention to exclusively formula feed, were also excluded due to statistical issues introduced by the small group size.

Maternal age, marital status, and country of residence were initially asked. To assess socio-economic status mothers were asked to report their current occupation (or if currently on maternity leave, previous occupation). The simplified National Statistics Socio-economic Classification, which contains 8 occupation classifications was then applied (ONS, 2010).

Only mothers who reported previous occupation were asked questions related to their return to their previous employment. Information relating to the infant such as birth order and age in weeks was also obtained.

*Exposure Variables*

The survey had a similar study design with previous work examining the emotional and practical experiences of formula feeding mothers (Fallon et al., under review). The first part of the survey assessed the practical experiences of breastfeeding mothers. Questions included the perceived level of infant feeding support that mothers received from health professionals, the perceived level of respect displayed by their everyday environment with regards to their feeding choices, and the perceived level of satisfaction experienced as a result of their feeding choices. In addition, mothers were asked whether they had breastfed in public, and if so the perceived level of respect at the time of this event. Where applicable, mothers were also asked about perceived respect for their feeding choices at the workplace (displayed or expected). All answers were provided via a 5-point likert scale (higher responses indicated higher levels of support, respect, and satisfaction). Finally, mothers were also asked about their main source of information about infant feeding. Potential responses included the media, health professionals, family members, other mothers, or previous experiences/own accord.

The second part of the survey examined the emotional experiences of breastfeeding mothers. Respondents were asked to provide a binary (yes/ no) response to indicate the presence of feelings of guilt, stigma and the need to defend as a result their infant feeding choices. Positive responses were followed up to identify the source of the feelings (see table 1). Participants were able to choose more than one source if applicable. A positive response to the presence of guilt was also followed up to ascertain whether the feelings were experienced

internally, as a result of other's opinions, or both. For stigma, two additional choices were added relating to the working environment and when breastfeeding in public. The structure and content of the questionnaire is presented in table 1.

*Outcome Variables*

The outcome variables were current feeding type and feeding intention in pregnancy. Available answers were based on WHO-defined categories (WHO, 2002). At the time of completion, five different categories were available to the mothers (exclusively breast feeding from birth; breastfeeding to start with but now a little formula; breastfeeding to start with but now some formula; breastfeeding to start with but now mostly formula, and combination feeding from birth).

Feeding intention was asked retrospectively, at the end of the study, to avoid response bias on answers relating to the emotional experiences

*Statistical analysis*

All analyses were conducted using the IBM SPSS 22 software package. Descriptive statistics were generated for demographic and exposure variables of interest (Tables 2 and 3). Independent samples t-test and $\chi^2$ tests were used to examine bivariate associations between study variables and both feeding type, and feeding intention. Relative risk ratio's (RRRs) for the association between exposure and outcome variables were then calculated using binary logit models. Separate models were built for feeding type and feeding intention. Backward elimination was used to build the adjusted models and demographic variables were kept as confounders in the model if they changed the beta coefficients of the exposure categories by more than 10%. Feeding intention and feeding type were also included as potential confounders in the opposing models. Exposure categories were collapsed to a 3 point scale

during the analysis (See tables 4 and 5) to meet the requirements of the statistical test and overcome complete separation issues within the sample. Moreover, due to unexpected singularities occurring during statistical analysis, the initial feeding type categories (N=5) were collapsed into two categories: exclusively breast feeding (EBF) from birth, and all other types of combination feeding (combi). Concurrent with feeding type, the initial feeding intention categories were collapsed into two (exclusively breastfeeding, EBF; and any type of combination feeding, combi), for the same reason (see Table 4). Those who intended to exclusively formula feed were excluded from the analysis due to statistical issues arising from the small number of cases identified (7 cases). For the respect of mothers' workplace and the respect when breastfeeding in public separate binary logit regression models were run in order to include only participants who reported paid employment and public breastfeeding respectively.

## Results

### *Demographics*

The age of the final sample of 679 (80% of the original sample) mothers ranged from 19 to 45 years (M = 31.21; SD = 4.59). Their baby's age ranged from 1 to 26 weeks (M = 16.49; SD = 7.62). The majority of the sample was married or living with their partner (95.8% cumulatively) and from the United Kingdom (88.1%). See Table 2 for full demographic details.

### *Overall Sample*

From the total sample of 679 mothers, 14.9% experienced feelings of guilt about their choice of feeding method. The guilt was motivated from both internal and external sources in equal proportions among both feeding type groups (Table 3). Approximately one in three mothers

(38%) also reported experiencing feelings of stigma about the way they chose to feed their baby while more than half of the mothers in the sample (54.5%) reported that they felt the need to defend their feeding choices. Interestingly, in all cases where these feelings were present, they arise primarily from family members (58.7%, 40.7% and 62.7% respectively), with other mothers and peers also making a notable contribution (31.7%, 38.4% and 42.7% respectively). However, regardless of the presence of negative experiences, the vast majority of the mothers in the sample were satisfied with their choice of feeding method (93.8%) and they reported high rates of respect from their everyday environment (80.6%) and when breastfeeding in public (71.9%). By contrast, when they were asked about the respect in their working environment (or the respect expected upon returning to their employment) mothers reported lower levels of respect (56.8%) and higher levels of disrespect (12.8%) than when they were asked about the respect from their everyday environment or when breastfeeding in public.

From the whole sample, only 56.6% of the mothers felt well supported by health professionals with infant feeding issues. The remainder (43.4%) of the sample reported feeling moderately to not at all supported. This finding was congruent with descriptive statistics relating to sources of infant feeding information with 42.1% of mothers using the internet as their primary resource of information around infant feeding. Here independently sourced online forums, social media and scientific evidence were ~~preferred~~ more popular to information gained from health professionals.

*Differences in experience by Feeding Type*

Demographic characteristics did not statistically differ between EBF and Combi feeding mothers (Table 2). The risk for Combi feeding mothers to experience guilt was almost six times higher than EBF mothers (RRR: 0.17 CI: 0.10, 0.27) and largely unaffected after

adjustments for confounders (RRR: 0.16 CI: 0.09, 0.27) (Table 4). Interestingly, in the two groups, the guilt was motivated from different sources [$\chi^2$ (2, *N*=101) = 21.30 p<.001] (Table 3). For EBF mothers feelings of guilt originated more often from the external environment (56.8%) than internal feelings (20.5%). However, for half of the Combi feeding mothers feelings of guilt could be traced from internal factors rather than external (50.9%). Key differences between feeding type were also identified when examining the nature of external sources of guilt with EBF mothers reporting they arose from family members more often than combi mothers [$\chi^2$ (2, *N*=101) = 13.68, p<.001] (Table 2). Internet and social media sources display a trend [$\chi^2$ (2, *N*=101) = 3.34, p=.068] for between group differences, with Combi feeding mothers reporting these sources of guilt more frequently (Table 3).

No associations between infant feeding type were observed with regard to stigma (RRR:1.36 CI:0.82, 2.24) (Table 4). However, when stigma was reported, mothers who EBF were more likely to do so as result of breastfeeding in public in comparison to combination feeding mothers [$\chi^2$ (2, *N*=258)=5.25, p=.022] (Table 3).

Whilst no associations between infant feeding type and feeling the need to defend feeding choices were observed (Table 4, the proportion of mothers reporting defence was high, (51% for EBF mothers and 68.1% for combi feeding mothers). When the need for defence was reported, only EBF mothers identified the workplace as the source of the feelings. Additionally, combi mothers reported a need to defend their feeding choices to themselves (question 10.2 table 1) significantly more often than EBF mothers [$\chi2$ (2, *N*=370)=32.56, p<.001] (Table 3).

With regard to the practical experiences of infant feeding, EBF mothers were more likely to turn to the internet and social media for advice on infant feeding than combi mothers (RRR: 0.52 CI:0.29, 0.95), however this association just failed to reach significance in the adjusted

model (RRR: 0.54 CI:0.29, 1.01) (Table 4). There were also no differences in the perceived level of support or respect between groups. However, the sources of support were found to differ. EBF mothers reported higher rates of support from health professionals significantly more often than their combi peers [$\chi 2$ (2, $N$=679)=8.03, p=.018] (Table 3). A similar pattern with even stronger predictive value was identified with regard to satisfaction with the milk feeding method ratings. Even though the reported level of satisfaction were ~~quite~~ high in both groups, combi mothers were more frequently dissatisfied or neutral with regard to their feeing choice, than their EBF peers (RRR: 3.18 CI:1.17, 8.68) (Table 4).

*Feeding Intention*

For feeding intention, although in the crude model mothers who were planning to combi feed were at higher risk of experiencing guilt (RRR: 0.49 CI: 0.26, 0.89), after adjustment for feeding type the comparison was no longer significant (RRR: 0.90 CI: 0.47, 1.74) (Table 3). Nevertheless, for those who actually reported the presence of guilt, mothers who intended to EBF more frequently reported family members as a source of the guilt [$\chi 2$ (2, N=101)=4.13, p=.048] (Table 3).

Neither of the remaining negative emotions (stigma and need to defend their feeding choices) nor any of the practical experiences (sources of information, satisfaction and perceived support and respect) examined were found to differ significantly according to feeding intention (Table 3 and 4).

## Discussion

To our knowledge, this large-scale internet study is the first to examine the risk of encountering negative emotional and practical feeding experiences in different cohorts of breastfeeding mothers. Descriptive findings from the whole sample indicated that mothers

reported feeling satisfied with their chosen feeding method, respected by their everyday environment including when breastfeeding in public and well supported by health professionals. Despite this, overall amongst breastfeeding mothers, 15% reported feeling guilty, 38% stigmatised and 54.5% felt the need to defend their feeding choice, with the family environment being the most frequent source of those feelings. These findings suggest that at surface level, breastfeeding mothers appear to be satisfied, respected and supported but on a deeper level, they are still susceptible to negative emotional experiences, particularly stigma and defence. Being aware that these emotions occur presents an opportunity to support breastfeeding women both emotionally and practically and limit postnatal mood issues, which bring potentially deleterious outcomes for both mother and infant.

Regression analyses identified that mothers supplementing breastfeeding with formula (combi) were far more likely to experience guilt, with these associations remaining strong after adjustment for confounders. Previous qualitative literature (Knaak, 2010; Marshall et al., 2007; K. Williams et al., 2012a) identifies the moralistic nature of the messages currently used to promote breastfeeding. The "breast is best" mantra accompanies the promotion of breastfeeding as something that should come natural, is tailored to the baby's needs and provides the best opportunity for bonding and attachment between the mother-infant dyad (Williams, Kurz, et al., 2012; Fenwick, Barclay, & Schmied, 2008; Larsen, Hall, & Aagaard, 2008; Mozingo, Davis, Droppleman, & Merideth, 2000; Murphy, 2000; Williams, Donaghue, et al., 2012). Feelings of guilt associated with formula supplementation could therefore arise from a sense of inadequacy or failing when compared to this socially constructed ideal mother.

Looking more specifically at the sources of guilt, half of the mothers who use a combination feeding method faced internally induced guilt. This is consistent with qualitative research, which reports that mothers who decide to offer formula either because their child is not

thriving, or as an aid for themselves to recover from the physical and emotional challenges of breastfeeding, internalize the blame (Tanner and Cockerill, 1996; K. Williams et al., 2012a, 2012b). On the other hand, with breastfeeding being demanding, meeting maternal commitments with other children and managing domestic responsibilities in conjunction with social and public life, could produce an array of incompatible expectations from breastfeeding mothers. For working mothers, return to their workplace can also contribute to the incompatibility of their roles (Stewart-Knox, Gardiner, & Wright, 2003). Those expectations, often ~~conflicting by not nature~~ conducive to the establishment of successful breastfeeding, could potentially give rise to a source of externally derived guilt when entered into the daily life equation. (Hauck & Irurita, 2010).

Regression analysis also revealed that combi feeding mothers were at a higher risk of dissatisfaction from their infant feeding method. With breastfeeding promotion creating a perception of formula as an inferior and unsafe substitute of breastmilk that introduces a higher health risk for the babies, this is not a surprising finding. Such factors have also been linked with greater dissatisfaction with the milk feeding method in qualitative literature (Knaak, 2010; Lee, 2007; Murphy, 1999) and can lead to broader dissatisfaction with the mothers' postnatal experience (Symon et al., 2013). Interestingly, this finding is consistent with outcomes from a recent study looking at the emotional and practical experiences of exclusively formula feeding mothers (Fallon et al., in submission). This suggests that the effect is independent of the amount of formula supplementation and is linked directly to the act of formula provision itself.

In contrast to the initial predictions, neither of these experiences varied according to prenatal feeding intention after adjustment for confounders. It is possible that responding to a study recruiting breastfeeding mothers fostered internally positive opinions with regard to current feeding method and masked any discourse from pre-natal feeding intentions. However,

breastfeeding intention is a complex concept and as the present study was not designed to assess individual components, such as the strength of feeding intention and plans for feeding duration, a complete feeding intention profile could not be generated.

Although not directly related to the main hypothesis, responses relating to managing breastfeeding in public settings and the workplace were included in this study as additional variables of importance. While nursing in public may be anticipated to be the most popular source of stigmatization in breastfeeding mothers, the vast majority reported that the public was moderately to very respectful when they nursed in public. This difference between the expected public response, which is expressed as perceived stigmatization, and the actual respect by the public has also been reported in a previous study (Sheeshka et al., 2001). Negative media reports about public breastfeeding could be contributing to this discourse (Boyer, 2011; Taylor and Wallace, 2012). In contrast, stigmatization due to public breast-feeding was not an issue raised by only a minority of Combi feeding mothers. Mothers who are supplementing with formula milk may be less likely to breastfeed in situations where they could feel concerned about negative reactions to public breastfeeding, as they have allowed the option to offer formula. The working environment was also examined as a specific source of negative experiences. Only mothers who EBF indicated they felt the need to defend their infant feeding choices in this location. This is to be expected, as EBF mothers are more likely to require additional facilities (such as a private room and a fridge to store expressed milk) and time in the workplace than Combi feeding mothers (Brown, 2016; Wyatt, 2002). The importance of support from employers and co-workers towards the breastfeeding mothers in order to successfully continue breastfeeding is highlighted in the literature (Brown, Poag, & Kasprzycki, 2001; Johnston & Esposito, 2007; Meek, 2001). More recently the rights of breastfeeding mothers were officially established by law (“Equality Act,” 2010, “Pregnancy and maternity discrimination,” 2014; Murtagh & Moulton, 2011). However, there are no

contemporary studies in the UK to demonstrate the efficacy of those provisions, or the change of employers' mind-set or practice towards breastfeeding mothers in the workplace. This finding could indicate a less flexible approach by employees when it comes to exclusive breastfeeding, however, direct examination of employers' attitudes towards continuation of breastfeeding, when mothers return to work, was beyond the scope of this study.

This survey is not without its limitations. It was completed by a self-selected sample of breastfeeding mothers whose willingness to participate may represent a desire to voice more extreme views than those with more neutral experiences who have no perceived benefit from taking part. Although efforts were made to advertise the study to the widest possible audience, this sample included participants from higher socio-economic status and as such cannot be generalised to women from different socio-economic backgrounds. In addition, the retrospective nature of questions relating to feeding intentions may have introduced biases. However, the high anonymity that an online study design offers is likely to balance the possible biases. Furthermore, the sample size of the study is large enough to engender confidence in the accuracy of the resulting summary of emotional and practical experience of breastfeeding mothers during the first 6 months postnatally. In addition, the design of the survey allowed differentiation of feelings from EBF and combi feeders in terms of both feeding intention and feeding type as well as adjustment for established confounders. The differences in the proportions between the groups are, in many cases, striking.

Breastfeeding mothers who did not initially intend to breastfeed were not included in the analysis because the sample size was too small, thus creating problems in the logit regression analysis. However, looking at the decision making process of these mothers in more detail may provide useful insights to motivate mothers who were not planning to breastfeed to initiate it in the postpartum and may help to identify effective support mechanisms that can help counteract prior negative beliefs and experiences about breastfeeding.

In light of the present findings, several recommendations of future research directions can be given. While in the present study indications of the sources of guilt undoubtedly arise, future research should focus on qualitative identifying the exact reasons mothers feel guilty. This cannot only help contextualizing the present findings but can inform health professional practices that eliminate the emotional impact on mothers. Of equal importance is a qualitative examination of the decision making process and the support network of mothers who were intending to formula feed, but exclusively breastfed postnatally. Those mothers were present in the initial sample, however they had to be excluded from the analysis due to very low numbers (<1% of the sample). This examination can inform effective strategies that can aid towards breastfeeding initiation rates among mothers who have not considered breastfeeding as an option pre-natally. Additionally, replication of the present study to a targeted sample of mothers of lower socioeconomic status is critical to be able to confidently generalize the findings to the general population. Finally, as managing EBF continuation upon return to workplace was highlighted by EBF mothers as an issue, despite the protective policies in place. An evaluation of the implementation of those policies in both privet and public sector workplace settings is crucial.

Future recommendations on breastfeeding promotion policies and campaigns should take into account the diverse and multi-factorial needs of different cohorts of breastfeeding mothers in order to provide an evidence-based framework of action. Milk feeding practices should not be guided by a moral prism or viewed as a moral obligation of the mother to her child. While breastfeeding has undoubted health benefits for both mother and child (Kramer, 2008; Rosser, 2002), the importance of maternal mental health and wellbeing should not be overlooked in promotional efforts as this can have profound implications for maternal and infant health and wellbeing (Milgrom et al., 2004; Murray, 1992).

To conclude, this study demonstrates that when breastfeeding mothers fail to adhere to exclusive breastfeeding guidelines, they are at risk of encountering negative emotions, particularly guilt. Such emotions are likely precursors to more serious postnatal disorders with the potential for damaging outcomes for both mother and child. Given that exclusive breastfeeding rates are very low in some countries, including the UK, this points to a large population whose emotional needs are not represented by current breast-feeding promotion practices and infant feeding policies. It is crucial that information provided to mothers is balanced and realistically reflects the challenges that exclusive breastfeeding brings. Moreover, to enhance the breast-feeding experience and empower mothers with confidence in their abilities, promotion and advice must be tailored to individual situations and respect the decisions of mothers who choose to supplement with formula.

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| Table 1: Survey question assessing feeding type, intention, emotional and practical experiences in the order they appeared in the survey. | | |
|---|---|---|
| **Displayed to** | **Question** | **Response options** |
| All | 1. How are you currently feeding your baby? | Exclusively breast feeding from birth<br>Exclusively breastfeeding to begin with, but now using a little formula (the odd feed)<br>Exclusively breastfeeding to begin with, but now using some formula<br>Exclusively breastfeeding to begin with, but now using mostly formula<br>Combination of breast milk and formula milk from birth<br>Exclusively breast feeding from birth |
| All | 2. How satisfied you are with your choice of feeding method? | Very Dissatisfied<br>Dissatisfied<br>Neutral<br>Satisfied<br>Very Satisfied |
| All | 3. Do you find that your everyday environment is respectful of your infant feeding choices? | Very Disrespectful<br>Disrespectful<br>Neutral<br>Respectful<br>Very Respectful |
| Those who reported paid occupation post-partum | 4. Do you (or do you expect to) find your environment in the workplace respectful of your feeding choices? | Very Disrespectful<br>Disrespectful<br>Neutral<br>Respectful<br>Very Respectful |
| All | 5. How well supported by health care professionals do you feel when it comes to infant feeding? | Not supported at all<br>Minimally supported<br>Moderately supported<br>Very supported<br>Extremely supported |
| All | 6. What has been your main source of information for milk feeding? | Internet online parenting forums/social media sites, health related websites, others<br>Peers/other mothers in person<br>Family members – mother, father, sister, brother, grandparents, other<br>Health professionals – midwives, health visitors, GP, other<br>Media - television, radio, newspaper, other<br>Previous experiences/ own accord |
| All | 7.1. Have you ever breast fed your baby in public? | Yes/No |
| If yes selected to question 7.1 | 7.2. If yes, how respectful are the people around you in general when you breast feed in public? | Very Disrespectful<br>Disrespectful<br>Neutral<br>Respectful<br>Very Respectful |
| All | 8.1. Have you ever felt stigmatized for the way you choose to feed your baby? | Yes/No |
| If yes selected | 8.2. If yes, where? | Internet online parenting forums/social media |

| | | |
|---|---|---|
| to question 8.1 | | sites, health related websites, others<br>Peers/other mothers in person<br>Family members – mother, father, sister, brother, grandparents, other<br>Health professionals – midwives, health visitors, GP, other<br>Media - television, radio, newspaper, other<br>My working environment<br>When feeding in public |
| All | 9.1. Have you ever felt guilty about the way you choose to feed your baby? | Yes/No |
| If yes selected to question 9.1 | 9.2. If yes, was this feeling the result of others opinion or your own feelings? | Other's opinions/ Own feelings/ Both |
| If other's opinions or Both selected to question 9.2 | 9.3. If so, where? | Internet online parenting forums/social media sites, health related websites, others<br>Peers/other mothers in person<br>Family members – mother, father, sister, brother, grandparents, other<br>Health professionals – midwives, health visitors, GP, other<br>Media - television, radio, newspaper, other |
| All | 10.1. Have you ever felt the need to defend your choice of milk feeding method? | Yes/No |
| If yes selected to question 10.1 | 10.2. If yes, where? | Internet online parenting forums/social media sites, health related websites, others<br>Peers/other mothers in person<br>Family members – mother, father, sister, brother, grandparents, other<br>Health professionals – midwives, health visitors, GP, other<br>Media - television, radio, newspaper, other<br>My working environment<br>When feeding in public<br>To myself |
| All | 11. How were you planning to feed you baby when you were pregnant? | Exclusively formula feeding<br>Mainly formula feeding with a little breast feeding<br>Approximately 50% formula feeding and 50% breast feeding<br>Mainly breast feeding with a little bit of formula feeding<br>Exclusively breast feeding |

Table 2: Maternal Characteristics by overall sample, feeding type, and feeding intention

| Characteristic | Overall | Feeding Type | | *P*** | Feedin |
|---|---|---|---|---|---|
| | | *EBF* | *Combi* | | *EBF* |
| Maternal age (mean years ± SD) | 31.21(±4.57) | 31.11(±4.58) | 31.57(±4.58) | .294 | 31.11(±4.65) |
| Child's age (mean weeks ± SD) | 16.49 (±7.62) | 16.33 (±7.72) | 17.14 (±7.23) | .262 | 16.44(±7.69) |
| Birth order (N/%*) | | | | | |
| 1st | 311 (45.8) | 239 (44.2) | 72 (52.2) | | 274 (46.5) |
| 2nd | 268 (39.5) | 220 (40.7) | 48 (34.8) | | 226 (38.4) |
| 3rd | 73 (10.8) | 60 (11.1) | 13 (9.4) | .332 | 66 (11.2) |
| 4th | 22 (3.2) | 19 (3.5) | 3 (2.2) | | 18 (3.1) |
| 5th and after | 5 (0.7) | 3 (0.6) | 2 (1.4) | | 5 (0.8) |
| Marital status (N/%*) | | | | | |
| Married | 422 (62.2) | 346 (64.0) | 76 (55.1) | | 363 (61.6) |
| Living with a partner | 228 (33.6) | 177 (32.7) | 51 (37.0) | | 201 (34.1) |
| Divorced | 1 (0.1) | 1 (0.2) | 0 (0.0) | .072 | 1 (0.2) |
| Separated | 2 (0.3) | 1 (0.2) | 1 (0.7) | | 2 (0.3) |
| Single | 26 (3.8) | 16 (3.0) | 10 (7.2) | | 22 (3.7) |
| Occupation (N/%*) | | | | | |
| Managers, Directors and Senior Officials | 46 (6.8) | 37 (6.8) | 9 (6.5) | | 38 (6.5) |
| Professional Occupations | 280 (41.2) | 218 (40.3) | 62 (44.9) | | 241 (40.9) |
| Associate Professional and Technical Occupations | 22 (3.2) | 19 (3.5) | 3 (2.2) | | 21 (3.6) |
| Administrative and Secretarial Occupations | 78 (11.5) | 63 (11.6) | 15 (10.9) | | 64 (10.9) |
| Skilled Trades Occupations | 11 (1.6) | 10 (1.8) | 1 (0.7) | .137 | 11 (1.9) |
| Caring, Leisure and Other Service Occupations | 89 (13.1) | 74 (13.7) | 15 (10.9) | | 79 (13.4) |
| Sales and Customer Service Occupations | 74 (10.9) | 56(10.4) | 18 (13.0) | | 61 (10.4) |
| Process, Plant and Machine Operatives | 2 (0.3) | 1 (0.2) | 1 (0.7) | | 2 (0.3) |
| Elementary Occupations | 9 (1.3) | 4 (0.7) | 5 (3.6) | | 8 (1.4) |
| Not in paid occupation | 68 (10.0) | 59 (10.9) | 9 (6.5) | | 64 (10.9) |

EBF: Exclusive breastfeeding; Combi: Combination feeding (all types * Percentages are given within each category (EBF or Combi an
**Group differences ascertained by independent samples t test and $x^2$ tests

Table 3: Descriptive experiences of breast feeding mothers by overall sample, feeding type, and feeding intention

| Breast Feeding Experience | *Overall N (%)* | *Feeding Type N (%)* | | *p-value*** | *Feeding Inten* | |
|---|---|---|---|---|---|---|
| | | *EBF* | *Combi* | | *EBF* | |
| Guilty about choice of feeding method | 679 | 541 | 138 | | 589 | 9 |
| No | 578 (85.1) | 497 (91.9) | 81 (58.7) | <.001 | 510 (86.6) | 6 |
| Yes | 101 (14.9) | 44 (8.1) | 57 (41.3) | | 79 (13.4) | 2 |
| Source of guilt | | | | | 79 | 2 |
| Internal | 38 (37.6) | 9 (20.5) | 29 (50.9) | | 29 (36.7) | 9 |
| External | 33(32.7) | 25 (56.8) | 8 (14.0) | <.001 | 31 (39.2) | 2 |
| Both | 30 (26.7) | 10 (22.7) | 20 (35.1) | | 19 (24.1) | 1 |
| Source of guilt*† | | | | | | |
| Media | 10 (15.9) | 2 (5.7) | 8 (28.6) | .113 | 8 (16.0) | 2 |
| Health professionals | 12 (19.0) | 3 (8.6) | 9 (32.1) | .167 | 9 (18.0) | 3 |
| Family members | 37 (58.7) | 25 (71.4) | 12 (42.9) | <.001 | 33 (66.0) | 4 |
| Other mothers | 20 (31.7) | 11 (31.4) | 9 (32.1) | .249 | 14 (28.0) | 6 |
| Internet | 17 (27.0) | 4 (11.4) | 13 (46.4) | .068 | 12 (24.0) | 5 |
| Stigmatised about choice of feeding method | 679 | 541 | 138 | | 589 | 9 |
| No | 421(62.0) | 343 (63.4) | 78 (56.5) | .137 | 222 (37.7) | 3 |
| Yes | 258 (38.0) | 198 (36.6) | 60 (43.5) | | 367 (62.3) | 5 |
| Source of stigma*♯ | | | | | | |
| Media | 76 (29.5) | 60 (30.3) | 16 (26.7) | .738 | 66 (18.0) | 1 |
| Health professionals | 41 (15.9) | 28 (14.1) | 13 (21.7) | .549 | 35 (9.5) | 6 |
| Family members | 105(40.7) | 81 (40.9) | 24 (40.0) | .900 | 92 (25.1) | 1 |
| Other mothers | 99 (38.4) | 74 (37.4) | 25 (41.7) | .162 | 84 (22.9) | 1 |
| Internet | 73 (28.3) | 55 (27.8) | 18 (30.0) | .588 | 65 (17.7) | 8 |
| My working environment | 16 (6.2) | 14 (7.1) | 2 (3.3) | .293 | 14 (3.8) | 2 |
| When fed in public | 106 (41.1) | 89 (44.9) | 17 (28.3) | .022 | 93 (25.3) | 1 |
| Need to defend choice of feeding method | 679 | 541 | 138 | | 589 | 9 |
| No | 309 (45.5) | 265 (49.0) | 44 (31.9) | <.001 | 323 (54.8) | 4 |
| Yes | 370(54.5) | 276 (51.0) | 94 (68.1) | | 266 (45.2) | 4 |
| If so, where*♯ | | | | | | |
| Media | 38 (10.2) | 33 (12.0) | 5 (5.3) | .067 | 34 (12.8) | 4 |
| Health professionals | 74 (20.0) | 49 (17.8) | 25 (26.6) | .064 | 67 (25.2) | 7 |
| Family members | 232 (62.7) | 179 (64.9) | 53 (56.4) | .142 | 205 (77.1) | 2 |
| Other mothers | 158 (42.7) | 113 (40.9) | 45 (47.9) | .241 | 113 (42.5) | 2 |
| Internet | 32 (8.6) | 59 (21.4) | 23 (24.5) | .533 | 74 (27.8) | 8 |
| To my working environment | 19 (5.1) | 19 (6.9) | 0 (0.0) | .009 | 17 (6.4) | 2 |
| Internal defence | 40 (10.8) | 15 (5.4) | 25 (26.6) | <.001 | 35 (13.2) | 5 |
| Source of infant feeding information | 679 | 541 | 138 | | 589 | 9 |

| | | | | | | |
|---|---|---|---|---|---|---|
| Media | 0 (0.0) | 0 (0.0) | 0 (0.0) | | 0 (0.0) | 0 |
| Health professionals | 118 (17.4) | 89 (16.5) | 29 (21.0) | | 98 (16.6) | 2 |
| Family members | 55 (8.1) | 45 (8.3) | 10 (7.2) | | 49 (8.3) | 6 |
| Other mothers | 91 (13.4) | 71 (13.1) | 20 (14.5) | .644 | 79 (13.4) | 1 |
| Internet | 286 (42.1) | 228 (42.3) | 57 (41.3) | | 248 (42.1) | 3 |
| Own accord/previous experiences | 129 (19.0) | 107 (19.8) | 22 (15.9) | | 115 (19.5) | 1 |
| Level of support from health professionals | 679 | 541 | 138 | | 589 | 9 |
| Not supported at all /Minimally supported | 120 (17.7) | 87 (16.1) | 33 (23.9) | | 103 (17.5) | 1 |
| Moderately supported | 175 (25.8) | 134 (24.8) | 41 (29.7) | .005 | 151(25.6) | 2 |
| Very supported / Extremely supported | 384 (56.6) | 320 (59.1) | 64 (46.4) | | 335 (56.9) | 4 |
| Satisfaction with feeding method | 679 | 541 | 138 | | 589 | 9 |
| Very dissatisfied/ Dissatisfied | 24 (3.5) | 11 (2.0) | 13 (9.4) | | 20 (3.4) | 4 |
| Neutral | 18 (2.7) | 8 (1.5) | 10 (7.2) | <.001 | 13 (2.2) | 5 |
| Satisfied/Very Satisfied | 637 (93.8) | 522 (96.5) | 115 (83.3) | | 556 (94.4) | 8 |
| Respect in everyday environment | 679 | 541 | 138 | | 589 | 9 |
| Very disrespectful/disrespectful | 28 (4.1) | 18 (3.3) | 10 (7.2) | | 21 (3.6) | 7 |
| Neutral | 104 (15.3) | 72 (13.3) | 32 (23.2) | .002 | 88 (14.9) | 1 |
| Respectful / Very respectful | 547 (80.6) | 451 (83.4) | 96 (69.6) | | 480 (81.5) | 6 |
| Respect in working environment α | 611 | 482 | 129 | | 525 | 8 |
| Very disrespectful/disrespectful | 78 (12.8) | 64 (13.3) | 14 (10.9) | | 64 (12.2) | 1 |
| Neutral | 186 (30.4) | 114 (29.9) | 42 (32.6) | .758 | 159 (30.3) | 2 |
| Respectful / Very respectful | 347 (56.8) | 274 (56.8) | 73 (56.6) | | 302 (57.5) | 4 |
| Respect when feed on public β | 641 | 520 | 121 | | 559 | 8 |
| Very disrespectful/disrespectful | 22 (3.4) | 15 (2.9) | 7 (5.8) | .126 | 19 (3.4) | 3 |
| Neutral | 158 (24.6) | 125 (24.0) | 33 (27.3) | | 131 (23.4) | 2 |
| Respectful / Very respectful | 461 (71.9) | 380 (73.1) | 81 (66.9) | | 409 (73.2) | 5 |

EBF: Exclusive breastfeeding; Combi: Combination feeding (all types); * Participants could select more than one answer; **Bivariate differences in experience ascertained by independent sample t tests and $x^2$ tests; †Percentages are calculated from parti… "External" and "Both" in the reference question; ♯ Percentages are calculated from participants who answered "yes" in the referenc… counted only for mothers who stated that they had a paid employment before pregnancy; β Responses counted only from mothers … breastfed in public

| Table 4: Crude and adjusted results for binary logit models of the association between predictor variables and feeding type/feeding intention | | | |
|---|---|---|---|
| Predictor | Feeding Type | | Feedir |
| | EBF/Combi | | EB |
| | *Crude RRR (95% CI)* | *Adjusted RRR (95% CI)* | *Crude RRR (95% CI)* |
| Guilty about choice of feeding method | | | |
| Yes | **0.17 (0.10, 0.27)** | **0.16 (0.09, 0.27)** ◊ | **0.49 (0.26, 0.89)** |
| No* | 1.00 | 1.00 | 1.00 |
| Stigmatised about choice of feeding method | | | |
| Yes | 1.27 (0.79, 2.05) | 1.36 (0.82, 2.24) ◊ | 0.94 (0.55, 1.60) |
| No* | 1.00 | 1.00 | 1.00 |
| Need to defend choice of feeding method | | | |
| Yes | 0.79 (0.49, 1.28) | 0.66 (0.39, 1.09) ◊ | 1.45 (0.85, 2.47) |
| No* | 1.00 | 1.00 | 1.00 |
| Have you ever breastfeed in public | | | |
| Yes | **2.31 (1.03, 5.17)** | 2.25 (0.94, 5.37) ◊ | 1.42 (0.60, 3.38) |
| No* | 1.00 | 1.00 | 1.00 |
| Source of infant feeding information** | | | |
| Internet | **0.52 (0.29, 0.95)** | 0.54 (0.29, 1.01) ◊ | 0.70 (0.37, 1.32) |
| Other mothers | 0.51 (0.23, 1.11) | 0.64 (0.28, 1.45) ◊ | 0.65 (0.28, 1.49) |
| Family members | 0.61 (0.25, 1.47) | 0.65 (0.26, 1.64) ◊ | 0.55 (0.20, 1.51) |
| Own accord/previous experiences | 0.59 (0.29, 1.17) | 0.65 (0.32, 1.34) ◊ | 0.61 (0.29, 1.30) |
| Health Professionals | 1.00 | 1.00 | 1.00 |
| Level of support from health professionals** | | | |
| Not supported at all /Minimally supported | 1.49 (0.81, 2.73) | 1.39 (0.74, 2.63) ◊ | 1.11 (0.57, 2.18) |
| Moderately supported | 1.67 (1.00, 2.78) | **1.74 (1.02, 2.97)** ◊ | 1.17 (0.67, 2.07) |
| Very supported / Extremely supported | 1.00 | 1.00 | 1.00 |
| Satisfaction with feeding method** | | | |
| Very dissatisfied/ Dissatisfied | **2.85 (1.08, 7.61)** | **3.18 (1.17, 8.68)** ◊ | 0.96 (0.29, 3.16) |
| Neutral | 2.78 (0.91, 8.49) | 2.56 (0.80, 8.25) ◊ | 1.66 (0.54, 5.16) |
| Satisfied/Very Satisfied | 1.00 | 1.00 | 1.00 |
| Respect in everyday environment** | | | |
| Very disrespectful/disrespectful | 1.36 (0.53, 3.46) | 1.05 (0.39, 2.85) ◊ | 1.97 (0.76, 5.12) |
| Neutral | 1.52 (0.87, 2.64) | 1.46 (0.82, 2.58) ◊ | 1.20 (0.64, 2.24) |
| Respectful / Very respectful | 1.00 | 1.00 | 1.00 |
| Respect/expected respect at the workplace α** | | | |
| Very disrespectful/disrespectful | 0.82 (0.44, 1.55) | 0.76 (0.39, 1.47)∫ | 1.47 (0.76, 2.83) |
| Neutral | 1.10 (0.71, 1.70) | 1.09 (0.70, 1,71)∫ | 1.14 (0.68, 1.90) |
| Respectful / Very respectful | 1.00 | 1.00 | 1.00 |
| Respect when breastfeed in public β ** | | | |
| Very disrespectful/disrespectful | 2.19 (0.87, 5.54) | 2.18 (0.80, 5.94)⌂ | 1.24 (0.36, 4.34) |
| Neutral | 1.24 (0.79, 1.95) | 1.12 (6.90, 1.83)⌂ | 1.62 (0.98, 2.69) |
| Respectful / Very respectful | 1.00 | 1.00 | 1.00 |

EBF: Exclusive breastfeeding; Combi: Combination feeding (all types); RRR: Relative risk ratio; ** Categories were collapsed to meet requirements of binary logi marital status and feeding intention; # Adjusted for feeding type; ∫ Adjusted for birth order; ⌂ Adjusted for mother's age, marital status and feeding intention; **Bold** associations; α Calculated from mothers who reported paid employment; β Calculated from mothers who reported they have breast fed in public.