CHALLENGES WITH BREASTFEEDING: PAIN, NIPPLE TRAUMA, AND PERCEIVED INSUFFICIENT MILK SUPPLY

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Abstract

Background and Significance: Breastfeeding problems are common; however, health care providers vary widely in their ability to address them effectively.

Purpose: The purpose of this study was to identify the relative frequencies of common breastfeeding challenges and their associations with maternal well-being.

Study Design and Methods: Women completed an online survey in which they described breastfeeding problems. Factor analysis was used to identify problems that co-occurred frequently, as well as the problems most strongly associated with maternal distress, maternal perceptions of greater severity, and postpartum depression or postpartum anxiety.

Results: There were 535 responses to the online survey; of these, 457 answered the question about the nature of their breastfeeding difficulties. Pain with breastfeeding was the most common breastfeeding problem. Difficulties with milk supply and milk intake were most strongly associated with heightened maternal distress and perceptions of severity.

Clinical Implications: Coordinated care for breastfeeding dyads, in which providers acknowledge the complex and reciprocal nature of many breastfeeding problems, has the potential to improve maternal satisfaction with breastfeeding as well as breastfeeding metrics.

Key words: Breastfeeding; Exclusive; Feeding behavior; Postpartum care.

Approximately 83% of U.S. women initiate breastfeeding, but this proportion declines dramatically in the first months of life (Centers for Disease Control and Prevention [CDC], 2022). According to the most recent CDC data evaluating U.S. infant-feeding practices, at 1 week of age, 62.6% of babies are exclusively breastfed; at 3 months, 45.3%, and by 6 months only 24.9% of babies are exclusively breastfed (CDC, 2022). Although these data indicate that a larger percentage of babies will continue to be partially breastfed (69.1%, and 55.8% at 3 months and 6 months, respectively, with 35.9% of babies breastfed at age 1), these outcomes represent a major divergence from recommendations by public health authorities including the CDC and the World Health Organization. World Health Organization (2021) estimates that worldwide only 44% of infants 0 to 6 months are exclusively breastfed.

Some of the decline in breastfeeding rates is related to social factors such as a mother's return to work, personal preference (Li et al., 2008), or a cultural emphasis on formula feeding (Barnes et al., 2021; Odom et al., 2013). When women are asked to describe their reasons for discontinuing breastfeeding, however, breastfeeding challenges are a frequent theme in their responses (Brown et al., 2014; Li et al., 2008; Newby & Davies, 2016).

Breastfeeding problems are commonplace, affecting both members of the breastfeeding dyad. Wagner et al. (2013) reported that 92% of the 532 participants in their prospective study of first-time U.S. mothers reported at least one breastfeeding difficulty on day 3 of their babies' lives; very similar results were reported in a study of Indian mothers (Suresh et al., 2014). Gianni et al. (2019) studied women who gave birth to healthy babies at facilities where all 10 steps of the Baby-Friendly Hospital Initiative had been implemented however, even in this context, 70% of participants reported that they encountered at least one breastfeeding challenge. Concerns about milk supply and pain with breastfeeding are particularly prevalent on lists of problems reported by participants (Ahluwalia et al., 2005; Brown et al., 2016; Feenstra et al., 2018).

Early discontinuation of breastfeeding is associated with increased odds of adverse health outcomes for both mothers and children. These outcomes can be observed in both the short term for example, higher rates of otitis media and sudden infant death syndrome in infants, and higher rates of postpartum depression in mothers (Kendall-Tackett, 2016; Meek et al., 2022) and the long term such as differences in cognitive performance, autism, and attention deficit hyperactivity disorder in children; higher rates of breast and ovarian cancer in mothers (Boucher et al., 2017; Chantry et al., 2015). Breastfeeding problems can have a significant emotional impact on women who planned to breastfeed their infants. For many women, breastfeeding issues are associated with significant distress (Palmér et al., 2014; Robinson, 2018). Researchers have found associations across breastfeeding problems, premature weaning, and postpartum depression (PPD; Brown et al., 2016).

These challenges occur within a health care environment in which accurate diagnoses and effective management can be difficult for a breastfeeding dyad to obtain. Education on evidence-based breastfeeding support strategies makes up a relatively small proportion of the classroom education and clinical training of many non-International Board Certified Lactation Consultant (IBCLC) health care providers (Ahmed et al., 2011). In an era of increasing health care specialization, the complex and reciprocal nature of many difficulties experienced by breastfeeding dyads can be challenging to treat effectively in brief clinical encounters.

Multiple studies of breastfeeding women describe the devastating impact of persistent breastfeeding problems, and of medical advice that fails to address or even exacerbates a dyad's challenges (Mahurin-Smith, 2016; Thulier & Mercer, 2009). The evidence corroborates a clinical experience reported by many lactation consul-

TABLE 1. RANK-ORDERED BREASTFEEDING PROBLEMS

Type of Problem	*N* (457 Respondents Reported at least 1 Problem)
Pain with breastfeeding	254 (55.6%)
Nipple trauma	175 (38.3%)
Low milk supply	163 (35.7%)
Slow weight gain	150 (32.8%)
Engorgement	140 (30.6%)
Plugged ducts	140 (30.6%)
Weak or ineffective suck	130 (28.4%)
Oversupply or overactive letdown	124 (27.1%)
Tongue tie	86 (18.8%)
Poor transfer of milk	74 (16.2%)
Breast infection	72 (15.8%)
Uncoordinated suck	62 (13.6%)
Thrush	49 (10.7%)
Poor latch (see note)	31 (6.8%)
Dysphoric milk ejection response	15 (3.3%)
Additional, please specify (see note)	131 (28.7%)

Note. Poor latch was not included in the list of problems. It appeared 31 times in the 131 responses in the "other; please specify" text box. The text-box descriptions included health concerns (e.g., infant jaundice, prematurity, or protein intolerance; maternal postpartum complications), behavioral concerns (e.g., colic, sleepiness at breast), and rarer breastfeeding challenges such as lip or cheek ties, or nipple blisters.

Breastfeeding challenges are commonplace, affecting approximately 90% of breastfeeding dyads.

tants (LCs) that when women experience more breastfeeding problems, they find the situation more distressing (Cooklin et al., 2018; Mahurin-Smith & Beck, 2021). As a result, it can become more difficult for them to meet their breastfeeding goals.

Targeted breastfeeding education which emphasizes evidence-based dyadic approaches to the most common and the most distressing breastfeeding challenges may prove especially useful for nurses and other primary care providers. Data on the types of problems that are most robustly associated with maternal distress and PPD and postpartum anxiety may offer a basis for more careful monitoring or more prompt referrals in dyads where these issues are identified.

The purpose of this study is to provide data on the nature of breastfeeding challenges and their relationship to maternal perceptions of severity, maternal distress, and known or suspected PPD and postpartum anxiety.

Study Design and Methods

The study was conducted using survey methods. A convenience sample of women with breastfeeding problems was recruited to complete a 56-item online survey about their experiences. These data were in the context of a larger study focusing specifically on the relationships among self-compassion, breastfeeding problems, maternal distress, and PPD or postpartum anxiety (Mahurin-Smith & Beck, 2021; Mahurin-Smith & Beck, 2022). The subset of data describing the nature of participants' breastfeeding challenges had not been analyzed prior to the present study. Prior to recruiting participants, Illinois State University Institutional Review Board approval was obtained.

Participants

Participants were recruited via social media. Links were posted in Facebook groups for mothers, for example, groups intended to support employed mothers, or breastfeeding support groups. Twitter users with an audience of mothers, such as an online advice columnist focusing on childhood challenges, were asked to share the link as well. The sole inclusion criterion was women who self-reported breastfeeding problems. Informed consent was obtained on the first page of the survey. Qualtrics was used to host the survey. Women were instructed to reflect on a breastfeeding difficulty they had experienced. If they had experienced challenges breastfeeding more than one of their children, they were asked to select one to focus on for the purposes of this survey. There were 535 responses; of these, 457 answered the question about the nature of their breastfeeding difficulties.

Responses with no description of the participants' breastfeeding challenges (n = 78) were excluded from analysis.

Measurement

The survey item that asked participants to describe their breastfeeding problems included a list of common breastfeeding problems (Table 1) developed for this study. Respondents could check multiple boxes; the final box offered them an opportunity to report problems not included in the list or to describe their difficulties at more length. The next two survey items asked them to rate their experiences using Qualtrics graphic sliders, a visual tool for numeric ratings resembling a dial with numbers running from 0 to 10. For both items, 0 = very mild and 10 = very severe. The first question asked participants to evaluate the severity of the problem, and the second asked them to rate the distress they experienced at the time. Participants were also asked if they had experienced PPD or anxiety; the answer choices for this item were *yes*, *maybe*, and *no*. For the purposes of this study, the *yes* and *maybe* responses were grouped together into a single category *known or suspected PPD or anxiety*, with the rationale that both responses indicated presence of symptoms experienced by participants as atypical and unwelcome.

Data Analysis

A graduate assistant trained in research procedures initiated the process of data analysis; the preliminary results were corroborated by the author, coupling visual inspection of the dataset with frequency tallies generated in R version 4.0.2 (R Core Team, 2022). Because of its suitability for identifying underlying structures in large datasets, exploratory factor analysis was used to examine associations across the various types of breastfeeding problems, maternal perceptions of severity, maternal distress, and known or suspected PPD or postpartum anxiety. The goal of this approach was to identify groups of problems with the potential to affect both members of the breastfeeding dyad, as well as those most closely associated with adverse effects on maternal wellbeing. This factor analysis was completed using the factanal() function in R; factanal() uses maximum likelihood estimation with varimax rotation to evaluate associations in multivariate datasets.

Results

Descriptive Statistics

Of the 457 women who described the nature of their breastfeeding problems, 392 were from the United States, 42 from Canada, 10 from the United Kingdom, and 2 from Sweden. There was one respondent from each of the following countries: Australia, Denmark, Germany, Mexico, the Netherlands, Norway, Slovakia, South Africa, Thailand, and the United Arab Emirates. One respondent did not answer the question. No demographic data other than geographical location was obtained from participants.

On the 0–10 ordinal scale of perceived problem severity, the median rating was 7 (M = 6.43, SD = 2.18). The mean number of boxes checked was 3.86 (SD = 1.87). On the 0–10 ordinal scale of maternal distress, the median rating was 8 (M = 7.98, SD = 1.94). For the question about known or suspected PPD or postpartum anxiety, there were 244 women with known or suspected PPD or postpartum anxiety and 197 women without.

TABLE 2. MOST COMMON PAIRS OF BREASTFEEDING PROBLEMS

Problem Subtypes	*N* (413 Respondents Reported >1 Problem)
Pain with breastfeeding, nipple trauma	144 (34.9%)
Pain with breastfeeding, engorgement	98 (23.7%)
Pain with breastfeeding, plugged ducts	96 (23.2%)
Low milk supply, slow weight gain	88 (21.3%)
Pain with breastfeeding, oversupply or overactive letdown	81 (19.6%)
Engorgement, oversupply or overactive letdown	80 (19.3%)
Nipple trauma, plugged ducts	74 (17.9%)
Nipple trauma, engorgement	72 (17.4%)
Engorgement, plugged ducts	70 (16.9%)
Pain with breastfeeding, low milk supply	68 (16.5%)
Pain with breastfeeding, weak suck	67 (16.2%)
Low milk supply, weak suck	64 (15.5%)
Plugged ducts, oversupply or overactive letdown	61 (14.8%)
Pain with breastfeeding, tongue tie	60 (14.5%)
Nipple trauma, slow weight gain	47 (11.4%)
Slow weight gain, poor transfer of milk	46 (11.1%)

Breastfeeding Problem Frequencies

Responses to the item about the most frequent types of breastfeeding problems reported are summarized in Table 1. The most common complaint, by a wide margin, was pain with breastfeeding. Of those who described a specific type of breastfeeding problem, 55.6% (n = 254) reported that breastfeeding was painful. Nipple trauma and low milk supply ranked second and third on the list of maternal concerns, reported by 38.3% (n = 175) and 35.7% (n = 163) of respondents, respectively. The least commonly selected response was dysphoric milk ejection response, selected by only 3.3% (n = 15) of respondents. No definitions were provided for any of the items on the list,

TABLE 3. FACTOR ANALYSIS RESULTS FOR PROBLEM SUBTYPES, PERCEIVED SEVERITY, MATERNAL DISTRESS, AND POSTPARTUM DEPRESSION OR POSTPARTUM ANXIETY

	Factor 1: Too Much Milk	Factor 2: Insufficient Milk or Intake	Factor 3: Pain
Weak or ineffective suck	**-0.34**	**0.42**	
Uncoordinated suck		0.28	
Tongue tie		**0.35**	0.14
Poor transfer of milk	-0.29	**0.67**	
Slow weight gain	**-0.50**	**0.36**	-0.16
Pain with breastfeeding	0.18		**0.74**
Nipple trauma	0.11		**0.86**
Engorgement	**0.66**		0.25
Plugged ducts	**0.41**	0.22	0.32
Thrush	0.26	0.15	0.24
Breast infection	0.27		**0.39**
Low milk supply	**-0.70**	**0.30**	**-0.31**
Oversupply or overactive letdown	**0.99**	-0.11	
Dysphoric milk ejection reflex	0.12	0.29	
Postpartum depression or postpartum anxiety		**0.43**	
Perceived severity		**0.59**	0.11
Maternal distress	-0.10	**0.70**	
SS loadings	2.75	2.22	1.83
Proportion of variance	0.16	0.13	0.11
Cumulative variance	0.16	0.29	0.40

Note. Factor loadings are not reported here if their absolute value is <0.10.

which might have been especially pertinent in the case of dysphoric milk ejection response; one woman who did not check this box used the text field to report *terrible homesickness upon letdown*. Many mothers (n = 131, or 28.7%) provided additional information about their breastfeeding problems, described in the note to Table 1.

Participants were free to select multiple problems, and 413 did so. Table 2 summarizes the most frequently reported pairs of co-occurring problems, listing those described by at least 10% of the sample. Nipple trauma was the most common complaint associated with breastfeeding pain, though engorgement and plugged ducts were also frequent concerns.

Associations Across Problem Types

Exploratory factor analysis was used to evaluate a matrix that included the presence or absence of each problem subtype, perceived severity, maternal distress, and known or suspected PPD or postpartum anxiety. Results are shown in Table 3, where bold type indicates factor loadings with absolute values ≥ 0.3 (Hair et al., 2009, p. 117). A three-factor model offered the best fit for the data and explained 40% of the variance. The cluster of problems that loaded most heavily on Factor 1 were all related to an overabundance of milk: oversupply, overactive letdown, engorgement, and plugged ducts had positive factor loadings ranging from 0.41 to 0.99, whereas negative factor loadings were noted for slow weight gain, poor transfer of milk, weak or ineffective suck, and low milk supply.

Factor 2, in contrast, was associated with perceptions of increased severity (0.59), higher maternal distress (0.70), and greater prevalence of PPD or postpartum anxiety (0.43). This factor described the cluster of problems associated with milk supply or milk transfer: weak or ineffective suck, poor transfer of milk, tongue tie, slow weight gain, and perceived low milk supply all loaded on this factor at ≥0.3.

Factor 3 described painful breastfeeding problems. Pain with breastfeeding, the most common problem reported in the dataset, loaded on this factor at 0.74; nipple trauma had a factor loading of 0.86. Plugged ducts and breast infections had factor loadings of 0.32 and 0.39, respectively. This factor was not associated with maternal distress or PPD or postpartum anxiety.

Clinical Implications

In this sample of 457 women, the most common breastfeeding problems reported were pain with breastfeeding, nipple trauma, low milk supply, and slow weight gain. The most common combinations of problems involved pain with breastfeeding (most frequently paired with nipple trauma, engorgement, or plugged ducts), followed by low milk supply coupled with slow weight gain. Three factors

CLINICAL IMPLICATIONS

- Nurses should routinely screen for breastfeeding problems and refer appropriately because breastfeeding problems are extremely common. Breastfeeding problems frequently affect both members of the dyad and require dyadic management. Nurses who work with one member of a breastfeeding dyad should make sure referrals are made as needed.
- Nurses who are aware of the associations across types of breastfeeding problems can prevent escalation. For example, a baby who is identified by the mother–baby nurses as having a weak suck may benefit from an earlier weight check and an in-person lactation consultant visit to reduce the risks of slow weight gain and reduced milk supply.
- Oversupply occurs frequently and is associated with problems including breast infections. Nurses can assist, either in person or via phone triage, to reduce the risk of recurrent mastitis.
- Concerns about low milk supply and slow weight gain were associated with increased postpartum mental health concerns and maternal distress in this sample. Nurses evaluating an infant with a presenting concern of slow weight gain may wish to consider offering appropriate maternal screenings and referrals.

were identified in the dataset, labeled too much milk, insufficient milk or intake, and pain. The problems most clearly linked to increased maternal distress and with PPD or anxiety were those associated with Factor 2: perceived low milk supply on the maternal side of the equation, and suck challenges for babies. These findings align with the existing body of research into outcomes related to breastfeeding problems, in which there are widespread reports of pain with breastfeeding and concerns about milk supply (Brown et al., 2016; Jackson et al., 2019; Wood et al., 2021).

The complexity of the causal factors underlying PPD and postpartum is documented in the literature (Brown et al., 2016; Pawluski et al., 2017; Stuebe et al., 2012), and these findings raise additional questions about causal factors and prevention. As illustrated in Table 3, the array of breastfeeding problems described in this study explained only a fraction of the variance in maternal perceptions of severity, maternal distress, and PPD or anxiety. These analyses suggest that no single problem or combination of problems can determine conclusively whether a mother will experience greater distress or perceive her difficulties as more severe, and certainly no problem or combination of problems can reliably predict PPD or postpartum anxiety. In view of these findings, it is important for future research to investigate the remaining fraction of the variance in outcomes. For example, what are the factors that cause women to find their problems more distressing? What are the supports that can buffer them most effectively against feeling overwhelmed?

These findings underscore the need for coordinated mother–infant care when concerns arise in breastfeeding dyads. In settings where the infant is seen as the patient, such as pediatric primary care, support may be less available to mothers in pain and distress. For instance, ineffective suck is strongly associated with low milk supply, and the combination is frequently distressing to the mother in question. It can also be challenging for dyads to obtain coordinated care for problems such as thrush or tongue-tie related nipple trauma. These situations can be addressed more effectively if nurses and other health care providers are aware of the need to offer dyadically focused support, information, and referrals.

In educating nurses to address maternal breastfeeding challenges, it is critical to provide intervention approaches that address the cause of their difficulties. For example, it is useful to know that maternal concern about low milk supply is significantly more common than clinically confirmed insufficient milk supply (Kent et al., 2022).The widespread concerns about painful breastfeeding in these data suggest that emphasis on strategies such as biological nurturing, a positioning strategy which can reduce pain associated with poor latch as well as perceptions of insufficient milk supply (Colson, 2010; Milinco et al., 2020), could be beneficial for nurses who work with breastfeeding dyads.

Limitations

Our emphasis on social media recruitment meant that the large majority of our participants were social media users, which could have influenced our results. One limitation of this study design is that all breastfeeding problems were self-reported with no independent corroboration by health care professionals; thus, selective recall bias may have influenced the results. Therefore, it is important to acknowledge that the problems identified in this sample should be qualified as "maternally identified." A further limitation is reliance on self-identification of PPD or postpartum anxiety. Although this strategy is sometimes used in studies of PPD or postpartum anxiety (Fellmeth et al., 2019), a more robust diagnostic measure would have strengthened the study. Follow-up studies would also benefit from the inclusion of demographic data, which was not included in this survey.

Conclusion

Skilled breastfeeding assistance can often provide effective solutions, diminishing the *painful and unpleasant* factor so that women can enjoy a pain-free and even joyful breastfeeding experience. These findings make clear, however, that breastfeeding dyads need more consistent access to nurses who can offer them the assistance they need to make breastfeeding work. ✣

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