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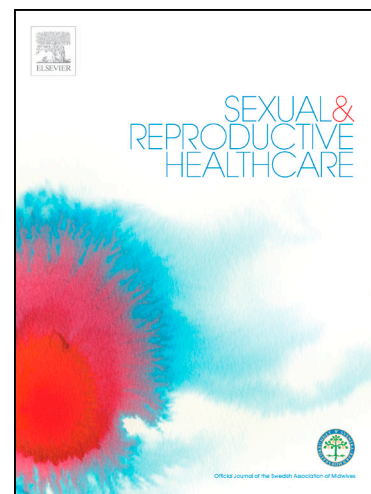
Early breastfeeding problems: A mixed method study of mothers' experiences

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Ethical approval: All participants were informed about the study both written and orally by the health visitor at the first home visit in compliance with the Helsinki Declaration. The secondary data analysis was approved by the Danish Data Protection Agency (j.no 2013-41-1866).

Early breastfeeding problems: A mixed method study of mothers' experiences

Abstract

Objectives: Breastfeeding problems are common and associated with early cessation. Stillbirth of postpartum hospital stay has been reduced. This leaves new mothers to establish breastfeeding at home with less support from health care professionals. The objective was to explore mothers' perspectives on when breastfeeding problems were the most challenging and prominent early postnatal. The aim was also to identify possible factors associated with the breastfeeding problems.

Methods: In a cross-sectional study, a mixed method approach was used to analyse postal survey data from 1437 mothers with full term singleton infants. Content analysis was used to analyse mothers' open text descriptions of their most challenging breastfeeding problem. Multiple logistic regression was used to calculate odds ratios for early breastfeeding problems according to sociodemographic- and psychosocial factors.

Results: Up to 40% of the mothers had experienced early breastfeeding problems. The problems were associated with the mother, the infant and to lack of support from health care professionals. Most prominent problems were infant's inability to latch on (40%) and mothers having sore, wounded and cracked nipples (38%). Pain often occurred when experiencing breastfeeding problems. Factors associated with the problems were primiparity, lower self-efficacy and lower self-perceived knowledge of breastfeeding. Mothers with no or short education reported less frequently breastfeeding problems.

Conclusions: Breastfeeding problems occurred frequently in the early postnatal period and often caused breastfeeding to be painful. Health care professionals should prepare mothers to deal with possible breastfeeding problems. New support options should be reviewed in an early postnatal discharge setting.

Keywords: breast feeding, problems, mixed method, mothers, pain.

Introduction

The length of hospitalization following birth has been markedly reduced (1) and today new mothers are expected to establish breastfeeding at home with less support from

health care professionals. Breastfeeding has been documented to benefit the health of both mother and infant (2, 3), and 97% of Danish mothers initiate breastfeeding after birth. Still breastfeeding rates are low with only 68% of mothers exclusively breastfeeding their infant two months postpartum (Blinded for review). A possible reason could be difficulties getting started. Studies show that up to 92% of all new mothers experience a variation of breastfeeding problems (4-8). Several studies have documented an association between breastfeeding problems and early breastfeeding cessation (9-12)+(Blinded for review).

Initiating breastfeeding has been identified as a vulnerable period. New mothers are vulnerable, when adjusting to motherhood and they may be insecure when adapting to breastfeeding their infant (13, 14)+(Blinded for review). If breastfeeding is not well-established during the first week, the infant may be at risk of significant weight loss, hypernatraemic dehydration, (15) and readmission at the hospital again.

Even though breastfeeding problems are a well-known phenomenon early postnatally, and mothers' may experience more than one problem, sparse is known about what mothers' themselves experience as their most challenging breastfeeding problem. In Denmark readmission rates due to nutritional problems among newborns have increased in the last 10 years (16), demonstrating that some mothers still experience problems when establishing breastfeeding. Ensuring to provide new mothers with optimal support in this crucial period of early breastfeeding, this study aims to investigate mothers' experiences of their most challenging breastfeeding problem, the extent of the problems and possible factors associated with early breastfeeding problems.

Methods

Design, setting and participants

We used baseline data from the first phase of a previous intervention study focusing on improving breastfeeding duration (Blinded for review). In order to investigate the complex phenomenon of early breastfeeding problems, the present study used a cross-sectional design with a mixed method approach. The study was conducted in the Region of Southern Denmark and the Central Denmark Region. At the time of data collection, first time mothers usually stayed at the hospital for four days after giving birth. Multiparous mothers without complications were usually discharged within a day after delivery. Antenatal classes were available at some hospitals or in evening classes

through user fees. Participants (N = 1437) were mothers living in the two study regions, giving birth to a single child with a gestational age of 37 weeks or more, and who had initiated breastfeeding. Exclusion criteria were mothers with another ethnic background than Danish.

Data collection

Data were obtained from a self-administered questionnaire and collected from the February 1st - July 31st, 2014. The questionnaire was handed out within 3 weeks after birth by the health visitors, and returned by the mothers in a prepaid envelope. The questionnaires were on average returned within 17 days after the birth.

The questionnaire was specifically designed to collect information about the early breastfeeding period and contained questions related to maternal psycho-social, perinatal and early experiences of breastfeeding. The questionnaire was designed to identify specific needs of the target group. It consisted of both validated and internationally accepted closed and open-ended questions. It was reviewed by four experts within the field and pretested in three rounds to ensure comprehensibility, clarity and acceptance among 24 primipara- or multiparous mothers.

Measures

Mothers were asked: "Did you experience any problems with breastfeeding (yes or no)?" making early breastfeeding problems a measure of maternal perception.

Answering "yes" they were asked to elaborate on their answer by describing their most challenging problem in their own words. Sociodemographic questions concerned: mother's (iv) age, (v) educational level, and (vi) parity. Psychosocial factors included (i) self-perceived knowledge regarding breastfeeding measured by one item and asking "How much did you know about breastfeeding before having this baby?" Response categories were "much", "little" and "nothing". Mothers' (ii) intention to breastfeed was clarified by asking "How long are you currently planning to breastfeed?" indicated in number of months. Mothers' (iii) self-efficacy regarding breastfeeding was measured by one item and asking "How sure are you that you can carry through with only breastfeeding till four months old?". Responses were given on a five-point Likert Scale from "very confident" to "very unconfident".

Data and analysis

The data analysis was done sequentially. Firstly, mothers' descriptions of their breastfeeding problem were analysed through content analysis following an inductive

approach inspired from U.H. Graneheim and B. Lundman (17), and S. Elo and H. Kyngas (18). The method is suitable when analysing text, sorting words into categories, where the words share the same meaning. The analysis process consisted of four phases. The first author explored the manifest and latent content of mothers' descriptions through the research question: 'Which early breastfeeding problems do mothers experience?' In the first phase, the whole text was read through to get an overall impression of the mothers' descriptions. Preliminary themes were identified from a 'bird's eye view'. In the second phase, answers were read word by word searching for and coding meaning units of the mothers' descriptions. In the third phase, meaning units were formed in groups and divided into sub-categories. Data was reassembled in the fourth phase by creating main-categories and descriptions of each category were illuminated through analysed text and illustrated by relevant quotations. The analysis was made very close to mothers' wording of their problems to ensure categories reflected the mothers' perspectives. Through the analysis process the original material was reread again going back and forth to the aim of the study to make sure that none of the mothers' answers could challenge the findings, e.g. main- and sub-categories of the analysis. The findings were then discussed among the first- and last author, where both could find the presented main- and sub-categories.

To determine the frequency of each identified early breastfeeding problem, we manually counted the number of problems coded into each main-category. We used statistical analysis to provide a descriptive analysis of the participating mothers. Chi-square tests were used, and level of significance was chosen as 5%. To determine possible predictors of breastfeeding problems we used the aforementioned variables (see "Measures"). The variables were categorised and a correlation analysis between exposure variables was performed. We estimated crude and adjusted odds ratios (aOR) with 95% confidence intervals (CI) for a cross-sectional analysis on early breastfeeding problems according to sociodemographic and psychosocial factors. Quantitative analysis was performed in STATA version 9.

Ethical considerations

All participants were informed about the study both written and orally by the health visitor at the first home visit in compliance with the Helsinki Declaration. The secondary data analysis was approved by the Danish Data Protection Agency (j.no 2013-41-1866).

Results

Of the 2186 women who gave birth in the study regions during the study period, a total of 1760 (81%) mothers fulfilled the inclusion criteria (Figure 1). Of those, 1597 mothers' received a questionnaire and 1437 were returned with answers to the questions regarding early breastfeeding problems, resulting in a response rate of 82 %. Of the participating mothers, 576 (40%) reported having experienced early breastfeeding problems; of these 561 (97%) mothers chose to further describe their most prominent breastfeeding problem in their own words. Distribution of sociodemographic, psychosocial and perinatal characteristics of participating mothers are shown in Table 1. Prior to giving birth 99% of the mothers had decided that they wanted to breastfeed their infant and the majority intended to breastfeed for more than five months. At the time of this study, 63 (4%) mothers had already stopped breastfeeding; 56 of these mothers (89%) replied having had early breastfeeding problems. Among the mothers experiencing breastfeeding problems, there was an equal distribution of primiparous (50%) and multiparous (50%) mothers. Compared to mothers with no early breastfeeding problems, mothers with early breastfeeding problems were younger, had higher level of education and a lower level of self-efficacy and knowledge regarding breastfeeding. Still many mothers (66%) who experienced breastfeeding problems reported a high self-efficacy regarding breastfeeding. The majority of mothers with early breastfeeding problems stayed at the hospital after giving birth (74%). There was no difference between mothers who had received and mothers who had not received breastfeeding education in the antenatal period in regard to experiencing early breastfeeding problems.

Mothers' self-experienced breastfeeding problems (Table 2)

Based on the data analysis seven main-categories were developed:

The infant could not latch on, sore or wounded or cracked nipples, not enough milk, too much milk, mastitis, being in doubt, other breastfeeding problems. They are presented in detail in the following sections.

The infant could not latch on

Many mothers described problems with getting the infant to latch on:

"He wouldn't latch on". Mothers' often stated reasons to why this problem occurred such as flat, small or inverted nipples or breast engorgement. Other reasons were infants, who were too eager or sucked on their tongue. One mother wrote: "The baby's eagerness with his arms makes him lose his attention to the nipple. He forgets to close

around the nipple and becomes angry". When their infant didn't latch on properly several mothers experienced that breastfeeding became painful. As one mother wrote: "He does not breastfeed properly on one breast [---]. It hurt".

Many mothers also described how they tried to solve the problem by using a nipple shield. Some mothers described the nipple shield as being a good help when breastfeeding: "In the beginning she would not latch on [---]. We received a nipple shield and have not experienced any problems since then". Others described that the nipple shield complicated breastfeeding even more. From the mothers' descriptions it became clear that some mothers had overcome the problem, while others still were experiencing the problem at the time when they filled in the questionnaire.

Sore, wounded and cracked nipples

Many mothers suffered from problems with sore, wounded and/or cracked nipples. Several mothers had problems with nipple healing and many descriptions contained information about mothers' experiencing severe pain, when breastfeeding. One mother wrote: "It is very painful! He has sucked and wounded both nipples and I have great difficulties healing". Some mothers added in their descriptions that they were surprised by the pain related to breastfeeding, and that they had to use a nipple shield to be able to breastfeed.

Not enough milk

Several mothers described their breastfeeding problem as not having enough milk for the infant. Problems with perceived milk insufficiency, and lack of milk at specific times of the day challenged breastfeeding. One mother wrote: "The onset of breast milk came in late, and there wasn't enough".

More mothers wrote that their milk did not satisfy the infant sufficiently and did not contain enough nutrition. The descriptions of the problem were often combined with an unsettled infant, who wanted to breastfeed all the time: "He was hungry all the time – there wasn't enough". Common to the descriptions were that mothers often used infant formula, when having doubts about whether the infant was satisfied after breastfeeding or not.

Too much milk

Other mothers described problems with too much milk, often combined with breast engorgement, lumps and/or blocked ducts. One mother described it as: "There was milk

enough for a whole postnatal ward, when it finally came in, which resulted in very tense breasts and blocked ducts". For some mothers the problem was painful.

Mastitis

Several mothers described problems with breastfeeding due to mastitis. One mother wrote: "Mastitis on day four, it really hurts". The descriptions of the problem were all characterised by too much milk, too little milk, wounded nipples and pain which, according to the mothers, inhibited breastfeeding. Some mothers experienced mastitis several times: "I had mastitis two times during the first 14 days of breastfeeding".

Being in doubt

For many mothers, breastfeeding problems were about being in doubt, not only in regard to how to latch the infant on to the breast but also about how much milk the infant was getting when feeding: "Is she getting enough? Does she have a stomach ache because of too little milk? She has been crying a long time for two nights during the first week. Should I wait with breastfeeding her again when she pulls together and cries?". The problem was often combined with an unsatisfied and inconsolable infant together with prolonged and frequent breastfeeding.

Other mothers experienced doubt, because they had not tried breastfeeding before.

One mother wrote: "I was inexperienced. I gave birth at home, so I had no one to help me". Another mother wrote: "Everything! Mostly because he is crying a lot. It makes me believe that he isn't satisfied or that he does not like or cannot tolerate my milk, or that he is in pain".

It appeared from mothers' descriptions that the problem consisted of circumstances concerning the mothers themselves, the infant or the health care professionals. When breastfeeding guidance was not being similar it was experienced as a problem. A mother wrote: "We stayed at the hospital for 14 days, where I was informed very badly about breastfeeding, because every health care professional had her own opinion. Therefore it was a very confusing time and I was not confident in my breastfeeding, before I returned home in quiet surroundings". Maternal doubt was a complex problem and arose from different factors and situations.

Other breastfeeding problems

Other early breastfeeding problems consisted of complications for the mother after giving birth: "It was very difficult getting started due to complications after having a

caesarean section” or the infant admitted to the neonatal department: “She was tube-fed every two or three hours the first couple of days and they gave her a pacifier”.

Other mothers experienced breastfeeding problems because of a previous breastoperation : “Breast operation made it impossible to breastfeed”.

The descriptions were combined with too little milk or milk not being able to be pumped from the breast. Other mothers experienced neck and back pain.

Prolonged and frequent breastfeeding were other challenges, which made the mothers feel that their time was spent solely on breastfeeding. A mother felt that breastfeeding made the infant depend on her as she wrote: “You are bound all the time, and the infant is very dependent on you”.

Frequency of early breastfeeding problems (Table 2)

There were 561 replies resulting in 646 coded early breastfeeding problems; thus, some of the mothers had more than one problem they considered as challenging. It appeared that problems with getting the baby to latch on (40%) and problems with sore, wounded and cracked nipples (38%) were especially prominent in the early breastfeeding period (Table 2).

Factors associated with early breastfeeding problems (Table 3)

The risk of experiencing early breastfeeding problems was most increased in mothers with low self-efficacy regarding breastfeeding (aOR 2.67, CI: 1.99-3.59) (Table 3). This makes low self-efficacy the strongest association for early breastfeeding problems in this study. The odds of experiencing early breastfeeding problems was also increased in primipara mothers and in mothers with lower intention to breastfeed and with lower self-perceived knowledge in regard to breastfeeding. Compared to mothers with an intermediate or higher education, the occurrence of early breastfeeding problems was lower in mothers with none to shorter educational level (aOR 0.64, CI: 0.50-0.82). Apart from mothers characterized by having none or shorter educational level, the odds for reporting early breastfeeding problems were all minimised in the adjusted analysis, but they all remained significant except from intention to breastfeed (Table 3).

Discussion

Through qualitative and quantitative analysis’ we were able to generate a broad and nuanced perspective upon early breastfeeding problems based on a population of 1437 mothers. We found that early breastfeeding problems frequently occur among Danish mothers (40%), and often were associated with severe pain when breastfeeding. The

problems arose due to circumstances concerning the mother, infant or health care professionals. Low maternal self-efficacy, self-perceived knowledge and primiparity showed to be associated with experiencing early breastfeeding problems with low self-efficacy as the strongest association. Lastly we found that mothers' with a lower educational level were less likely to report early breastfeeding problems.

Breastfeeding problems were a well-known phenomenon among the Danish mothers (40%) in our study in the early postnatal period. Though several studies have documented the occurrence of early breastfeeding problems, their prevalence varies from 13% in a Norwegian study (10) to 92% in a Californian study (8). The differences in results may be explained by differences in the aim of the studies and formulation of the research questions. In this study breastfeeding problems are defined by the mothers' themselves as they experienced breastfeeding difficulties individually, e.g more mothers in this study could have shared the same experience, but not necessarily have thought of it as a problem and had therefore not reported it. The number of mothers describing each experience in this study, and the frequency of each problem may therefore vary in regard to the perception among mothers in the study-population. Some indicate a need for a more clear-cut definition of breastfeeding problems (9), but this may be problematic given that our study found early breastfeeding problems being a complex phenomenon as problems arose due to circumstances related to the mother, the infant or health care professionals. Therefore early breastfeeding problems need to be defined by the mothers themselves, and rates of breastfeeding problems among new mothers demand attention when organising postnatal health care today.

Many mothers experienced pain in relation to having early breastfeeding problems. This finding is supported by a number of studies (4, 8, 19-21). The problems with nipples being sore, wounded or cracked (38%) in the first weeks of breastfeeding was also found among Swedish mothers, who reported that they suffered from sore nipples (25%) (9).

We found like other studies (9-11) that mothers with early breastfeeding problems stopped breastfeeding earlier than those without such problems. A finding that underlines the importance of supporting breastfeeding mothers early in the postnatal period. A few mothers in our study reported that they were surprised by the pain and discomfort caused by breastfeeding like also found in other studies (13, 19, 20). Mothers had not expected to experience problems with breastfeeding, an act that is portrayed as "natural" in the literature, the media and by health care professionals (13, 14). However,

the World Health Organization's Baby-Friendly Initiative and their "Ten Steps to Successful Breastfeeding" describes breastfeeding as requiring adequate support (3).

Therefore health care professionals should reflect upon their portraying of breastfeeding, making mothers informed, prepared and motivated to deal with possible early breastfeeding problems.

In this present study low maternal self-efficacy in regard to breastfeeding was the strongest associated factor in relation to experiencing early breastfeeding problems. We do not know if mothers' had low self-efficacy in regard to breastfeeding before initiating breastfeeding or if it was a result of experiencing problems with breastfeeding. But explained by Bandura's social cognitive theory, when described in relation to establishing breastfeeding (22), mothers may be influenced by their previous experiences with breastfeeding or their perception of the present breastfeeding situation. Moreover, encouragement and support from family and health care professionals can affect mothers' self-efficacy in regard to breastfeeding as well as positive or negative feelings related to breastfeeding (22). Mothers who early in the breastfeeding period report a low self-efficacy in regard to breastfeeding might be more likely to give up breastfeeding when they experience early problems because they have less energy to overcome them. It is therefore relevant for health care professionals to focus on especially this factor, when planning an intervention to prevent and support mothers, who want to breastfeed and experience early breastfeeding problems.

An interesting finding of this study was how lower educational level was related to reporting having less early breastfeeding problems. Other studies have shown low educational level and maternal age to be associated with lower intention to breastfeed and earlier breastfeeding cessation (20)+(Blinded for review). We also found lower educational level to be associated with a lower intention to breastfeed for a longer period (results not shown). It seems as the less educated mothers did not report, experience or recognize early breastfeeding problems in the same way as the comparable better educated mothers. Yet our finding calls for further investigation to examine this association and explain how mothers may experience early breastfeeding difficulties differently.

We also found primiparity to be associated with experiencing early breastfeeding problems. Chantry et al found that 53% of primiparas experienced problems with getting the infant to breastfeed effectively during the first three days after birth (5). Similar to

our findings, the problems consisted of the infant falling asleep, inability to latch on properly or unable to breastfeed effectively (5). Primiparity may therefore reflect lack of practical skills and inexperience in breastfeeding (Blinded for review). Nommsen-Rivers et al found that infants not being able to “breastfeed well” two times or more in the first 24 hours increased the risk of delayed onset of lactogenesis, which also increased the risk of excess weight loss and introduction of infant formula (23). This stresses the importance of postnatally to support primipara in general and those in particular who experience early breastfeeding problems.

When early breastfeeding problems were found to arise due to circumstances concerning the mother, infant or health care professionals it is necessary to reflect upon our role as health care professionals. We found breastfeeding guidance from health care professionals to be associated with both positive and negative experiences among the mothers. It is documented that health care professionals may play an essential role in preventing and overcoming early breastfeeding problems (6, 12), yet health care professionals’ guidance must be individualised and adjusted in regard to each and every mother, her knowledge and preferences in regard to breastfeeding. As length of hospital stay after birth has been reduced to a maximum of 24 hours for Danish mothers with uncomplicated births (24), health care professionals do not have the same opportunity to guide new mothers ‘on-site’ and to observe each breastfeeding mother frequently. When mothers of today are supposed to establish breastfeeding at home, current research is trying to establish knowledge about telemedicine as a viable option to provide appropriate support early postnatally (25)+(Blinded for review). Though ethical considerations should be made as to what mothers prefer when needing support in breastfeeding, and what can and cannot be replaced by the presence of health care professionals. The prevalence of breastfeeding problems in the early postnatal period stresses the importance of gaining more knowledge in relation to this issue.

Study limitations

It is necessary to address that data from this study were collected in 2004. Increased readmission rates due to nutritional problems among newborns (16) demonstrate that mothers still experience problems when establishing breastfeeding, and breastfeeding problems have been found to exist in many variations (7, 8, 13). But to our knowledge mothers’ descriptions of the most challenging problems in respect to breastfeeding and associations of early breastfeeding problems have been less studied. In our opinion

results of this study are valuable also today where many mothers establish breastfeeding at home with less support from health care professionals.

This study was a secondary analysis of data derived from a larger intervention study, and it might be argued, that our results could be affected by the intervention. However, the used data are baseline data collected before the intervention and as such not affected by it. A strength of this study is the use of mixed methods. Our mothers' (n= 561) described their most challenging breastfeeding problem in their own words instead of being restricted to predefined categories and also, at the same time, we were able to examine possible factors related to early breastfeeding problems. The few exclusion criteria make the study population representative for mothers giving birth to a single full term infant within a breastfeeding culture similar to the one in Denmark.

The reflexivity in the process of content analysis made the first author reflect on her own preconceptions throughout the analysis. Mutual agreement in the found main- and sub-categories between first- and last author indicates good inter-rater reliability.

Finally, categories were validated by other researchers in the field and by international literature (8, 13, 19, 20). Data on experiences may contain multiple meanings, which makes it difficult to make codes mutually exclusive (17). Consequently estimation of frequencies in the qualitative part of the study can involve a risk of under- or over-estimation. The results of the quantitative part of this study indicate which problems are most prominent and more common among new mothers.

Conclusion and implications for practice

Our study found breastfeeding problems being common among new mothers in the early postnatal period. Many mothers had difficulties managing the practical aspects of breastfeeding and the problems often caused breastfeeding to be painful. We also found that primiparity, low self-efficacy and self-perceived knowledge of breastfeeding associated with having early breastfeeding problems.

Health care professionals should reflect upon how they portray breastfeeding, so mothers' are prepared to deal with possible breastfeeding problems when initiating breastfeeding. Future research should focus on new support options, when mothers of today are discharged early postnatally and establishing breastfeeding in their own home.

Declaration

All authors have contributed to this article.

Conflict of interest

The authors have no interests to disclose.

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Figure 1 Inclusion of participants for the study

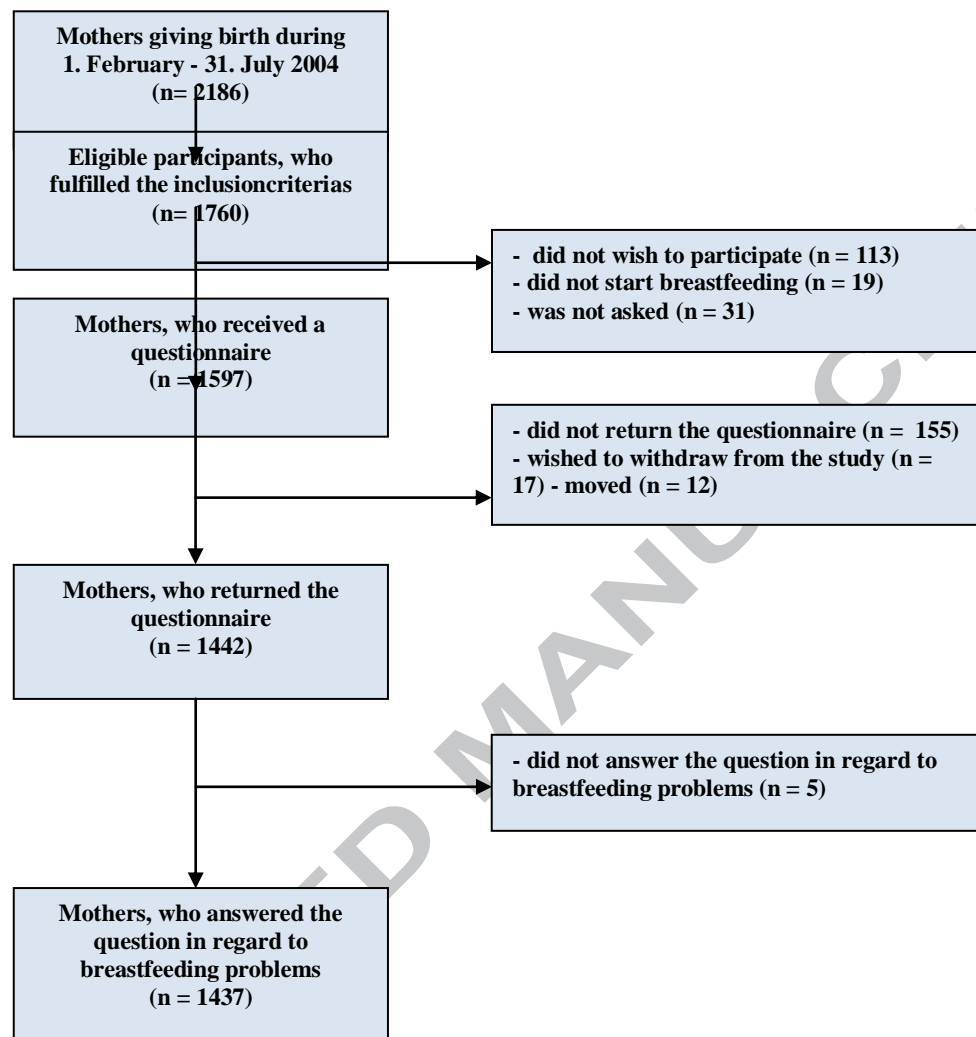


Table 1. Sociodemographic-, psychosocial- and perinatal characteristics of 1437 mothers

Characteristics	With breastfeeding problems (n=576)	Without breastfeeding problems (n=861)	P – value ^a
Sociodemographic factors			
<i>Age:</i>			
15-24 years of age	55 (10)	99 (12)	0.01
25-32 years of age	397 (69)	526 (62)	
33- 46 years of age	122 (21)	228 (27)	
<i>Duration of schooling:</i>			
7-10 years of school	159 (28)	268 (31)	0.16
> 10 years of school	351 (61)	479 (56)	
Other	62 (11)	105 (12)	
<i>Education:</i>			
None-short	314 (55)	514 (61)	0.02
Intermediate-long	256 (45)	327 (39)	
<i>Cohabitio:</i>			
Married/cohabiting	564 (98)	835 (97)	0.25
Living alone	10 (2)	23 (3)	
<i>Occupation:</i>			
Working	440 (77)	627 (73.9)	0.62
Unemployed	103 (18)	182 (21.4)	
Student	26 (4.6)	36 (4.3)	
Other	2 (0.4)	4 (0.4)	
<i>Parity:</i>			
Primiparous	286 (50)	292 (34)	0.00
Multiparous	290 (50)	569 (66)	
Psychosocial factors			
<i>Wants to breastfeed:</i>			
Yes	562 (99)	844 (99)	0.11
No	8 (1)	5 (1)	
<i>Intention to breastfeed: - how long do you intend to breastfeed your baby?</i>			
≤ 5 months	161 (33)	202 (25)	0.00
> 5 months	330 (67)	614 (75)	
<i>Self-efficacy with respect to breastfeeding: - how sure are you that you can carry through with only breast- feeding for 4 months?</i>			
High	334 (66)	713 (85)	0.00
Low	171 (34)	125 (15)	
<i>Self-perceived knowledge</i>			

regarding breastfeeding:

- how much did you know about
breastfeeding before you had
this baby?

High	237 (42)	487 (57)	
None and low	334 (58)	370 (43)	0.00

Perinatal factors

*Mothers who attended prenatal
classes:*

- for how many hours did you
receive breastfeeding education?

None	71 (21)	68 (17)	
≥ 1 hour(s)	261 (79)	341 (83)	0.01

Hospitalization:

Hospitalized - rooming in 24 hours	403 (74)	484 (58)	
Handled at an outpatient basis	141 (26)	347 (42)	0.00

*Actual breastfeeding
status:*

Still breastfeeding	507 (88)	853 (99.1)	
Not breastfeeding	56 (10)	7 (0.8)	
Expressing milk	13 (2)	1 (0.1)	0.00

Figures are numbers (percentage) of observation, missing values excluded

^aPearson chi-squared, p value

Table 2. Main- and subcategories of mothers' most challenging breastfeeding problems and their frequency

Main-categories	Sub-categories	Frequency*
The baby could not latch on	<i>Circumstances reflecting the mother and concerning the breasts:</i> that the breasts are engorged the nipples are flat, introverted, soft or little the baby is only breastfeeding at one breast	222 (40)
	<i>Circumstances reflecting the baby and its ability to breastfeed:</i> the baby is not breastfeeding effectively the baby is sucking on its tongue instead	
	<i>Circumstances reflecting the baby and its behaviour:</i> the baby is falling asleep/is sleeping the baby has nausea the baby is too eager, too restless or too angry	
Sore, wounded and cracked nipples	<i>Circumstances reflecting the mother and concerning the breasts:</i> cracks and wounds on the nipples sore nipples	212 (38)
Not enough milk	<i>Circumstances concerning the mother's milkproduction:</i> not having enough milk the onset of breast milk came in late lacking milk at different times of the day	74 (13)
	<i>Circumstances concerning the baby:</i> the baby wants to breastfeed all the time	
Too much milk	<i>Circumstances reflecting the mother and concerning the breasts:</i> lumps the breast were sore breast engorgement blocked ducts	20 (4)
	<i>Circumstances concerning the baby:</i> the baby regurgitates	
Mastitis	<i>Circumstances reflecting the mother and concerning the breasts:</i> mastitis	38 (7)
Being in doubt	<i>Circumstances concerning the mother:</i> mothers doubting that the baby is getting enough milk mothers being unexperienced	38 (7)
	<i>Circumstances concerning the health care professionals:</i> breastfeeding guidance provided by health care professionals not being uniform	
	<i>Circumstances concerning the baby:</i> the baby wants to breastfeed all the time	
	<i>Circumstances concerning the health care professionals:</i> that the baby was tube-fed	

	that the baby was given a pacifier	
	<i>Circumstances concerning the mother:</i>	
	mother being sick	
	it hurt	
Other breastfeeding problems	having had a breast operation	42 (7)
	<i>Circumstances concerning the baby:</i>	
	that you are breastfeeding all the time	
	<i>Circumstances concerning relatives:</i>	
	having guests	

* Figures are numbers (percentage) of observation. The proportions does not add up to a 100 % (561 replies), when mothers often answered with more than one problem

Table 3. Odds ratios (OR) for mothers with early breastfeeding problems according to sociodemographic- and psychosocial factors (n=1437)

	Crude odds ratios (OR)		Adjusted odds ratios (aOR)	
	OR	95% CI	aOR	95% CI
	(n= 1437)		(n = 1271)	
<i>Sociodemographic factors</i>				
<i>Age:</i>				
30 - 46 years of age	1.0		1.0	
15 - 29 years of age	1.17	0.95 ; 1.44	1.0	0.77 ; 1.29
<i>Education:</i>				
Intermediate - long	1.0		1.0	
None - short	0.78*	0.63 ; 0.97	0.64**	0.50 ; 0.82
<i>Parity</i>				
Multiparous	1.0		1.0	
Primiparous	1.92**	1.55 ; 2.38	1.57*	1.19 ; 2.07
<i>Psychosocial factors</i>				
<i>Intention to breastfeed:</i>				
> 5 months	1.0		1.0	
≤ 5 months	1.48*	1.16 ; 1.9	1.12	0.85 ; 1.48
<i>Self-perceived knowledge regarding breastfeeding:</i>				
High	1.0		1.0	
None – low	1.85**	1.5 ; 2.3	1.48*	1.14 ; 1.92
<i>Self-efficacy with respect to breastfeeding:</i>				
High	1.0		1.0	
None – low	2.92**	2.24 ; 3.81	2.67**	1.99 ; 3.59

Adjusted for all variables

* p< .05, ** p< .0001

Highlights:

- Breastfeeding problems (BP) frequently occurred among new mothers early postnatally
- Problems with infant's ability to latch on and wounded nipples were most prominent
- Primiparity, lower self-efficacy and self-perceived knowledge were associated with BP
- Mothers with short or no education were less likely to report BP
- Health care professionals should prepare mothers to deal with possible BP