

# Pregnant Women's Knowledge Gaps about Breastfeeding in Northern Portugal

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## Abstract

**Introduction:** To explore Portuguese pregnant women' knowledge on breastfeeding and to correlate knowledge scores with the socio-demographic variables. **Methods:** A cross-sectional design was used to assess 621 pregnant women' knowledge on breastfeeding at three health centers in the North of Portugal. The face-to-face interviewing was used to collected data using a clinical instrument composed by 18 knowledge breastfeeding descriptors. The reliability of the instrument was very good (KR-20 = 0.88). Descriptive and inferential statistics were used to examine pregnant women' knowledge and the relation with socio-demographics variables. **Results:** Pregnant women were found to be more knowledgeable in benefits of breastfeeding. In 14 knowledge descriptors more than 60% of pregnant women revealed lack of knowledge. The most usual lack of knowledge concerned how to increase lactation and how to deal with breastfeeding complications. The pregnant women more knowledgeable were the oldest, with higher education, and with previous experience on breastfeeding. **Discussion:** Pregnant women revealed a significant lack of knowledge to support basic breastfeeding decisions. The focus of care should emphasize on the younger, the first-time mothers and less well-educated women as particular vulnerable and poorer prepared groups concerning breastfeeding knowledge.

## Keywords

Breastfeeding, Nursing-Midwife Assessment, Pregnant Women, Midwifery

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## 1. Introduction

Breastfeeding is a healthier choice for the baby, mother and family [1] [2]. However, breastfeeding rates for exclusive breastfeeding have not reached the goals established by health organizations in several countries.

Breastfeeding can be emotionally demanding and physically exhausting. For many women, breastfeeding is not instinctive, but rather a learned process. Therefore, mothers need to begin the preparation for breastfeeding during pregnancy. To breastfeed with success mothers need to learn about proper position, latch, sucking and signs of milk transfer, hunger cues, and the infant's receptiveness to breastfeeding [1] [3].

Almost all mothers experience doubts about their ability to care for their newborns, particularly if they are breastfeeding. The lack of knowledge and confidence may jeopardize the success to breastfeeding. Studies have highlighted that a mother's knowledge and skills can increase the rate and duration of breastfeeding and are a relevant component of effective decisions and actions related to breastfeeding. [4]-[9] Several studies suggest that the main factors associated with short duration of breastfeeding were maternal ones. Specifically concerning knowledge on breastfeeding, the study reported that poor maternal knowledge was a relevant risk factor for breastfeeding abandonment. [10] [11] [12] [13]

Chezem *et al.* [14] explored relationships among breastfeeding knowledge, breastfeeding confidence, and infant feeding plans and their effects on feeding practices in first-time breastfeeding mothers. The authors concluded that breastfeeding knowledge was strongly correlated with breastfeeding confidence and lactation duration.

Lack of knowledge on breastfeeding could lead to hasty decisions and may also hamper the way mothers handle situations that may arise. Several studies reported that perceived inadequate milk supply was the most common reason for introducing formula feeding, and the most common problems encountered were fatigue, sore nipples, and engorgement. [12] [13] They suggested that breast engorgement and fatigue could be effectively managed with increased knowledge about positioning, alternating breasts with each feeding and resting when the baby rests. The participants inadequate lactation knowledge was demonstrated when they failed to mention the recognized indicators of breastfeeding problems, such as diaper count, listlessness of the baby, or failure to let down, as reasons for discontinuing breastfeeding. They still demonstrated the importance of correcting the sucking techniques to prevent problems, such as sore or cracked nipples. The authors postulated that women needed to be better prepared on breastfeeding to prevent and manage problems that could lead to discontinuation of breastfeeding.

Carlisle [15] described the relationship between the knowledge on breastfeeding issues and the success of a mother's ability to breastfeed for three months or longer. The author found that mothers were more likely to overcome challenges, such as cluster feeding or alterations in sleep pattern, if they were informed and prepared for these changes.

Nurses and midwives are important in the promotion, protection and support of breastfeeding. [2] [16] According to the literature, antenatal education is an important factor in developing breastfeeding knowledge development and fos-

tering breastfeeding skills and confidence for initiating and maintaining breastfeeding until the sixth month, as currently recommended. [2] [4]

Nevertheless, Chaudhary *et al.* [9] argued that maternal knowledge about breastfeeding was inadequate, and there was a big gap between actual and desired practices. In turn, others authors claimed that increasing mothers' knowledge was the first step to increase breastfeeding rates and duration.

To foster the mothers' preparation for breastfeeding, a systematized assessment of pregnant women' learning needs/knowledge concerning breastfeeding is needed. What do pregnant women know about breastfeeding during pregnancy? What is the level of pregnant knowledge about breastfeeding? Are there differences in pregnant women' levels of knowledge in relation to age, education, parity, planned pregnancy and previous experience on breastfeeding? So, to understand Portuguese pregnant women' knowledge on breastfeeding, was developed a study that aims to characterize expectant mothers' knowledge and examine scores of breastfeeding knowledge in relation to parental demographics.

## 2. Methods

### 2.1. Design

A cross-sectional study was developed in three Health Centres in North of Portugal, with previous authorization of Ethics Committee of the institutions.

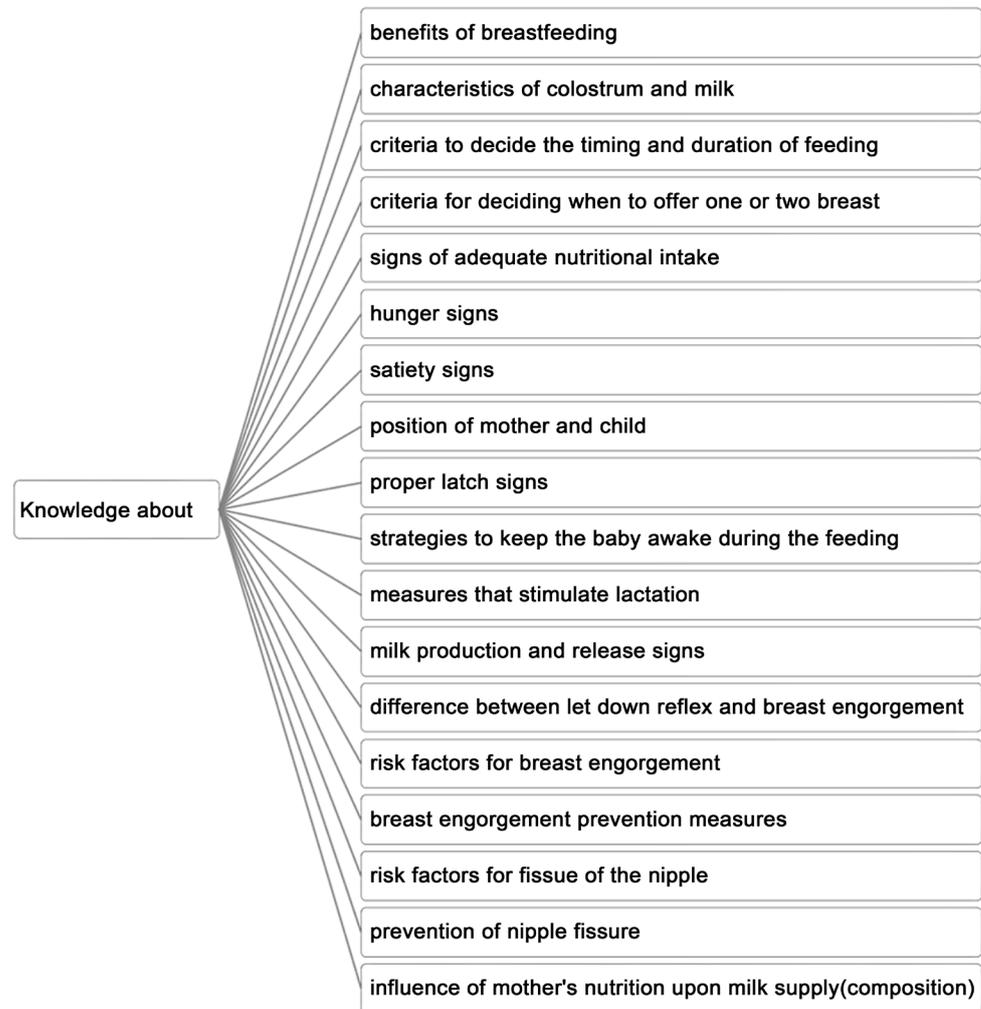
### 2.2. Participants and Sample

Participants were recruited during their visit to the Health Centre for pregnancy appointment. The convenience sample was constituted for pregnant women whose foetus was 24 - 28 gestational age, over 18 years of age, and fluent in Portuguese, resulting in a sample size of 621 pregnant women who consented to the study.

### 2.3. Procedures

The data were collected by the researcher that who a nurse-midwife from January to July of 2011, using face-to-face interview. Data collection used an instrument designed for this purpose, but based on nursing descriptors described in Nursing Outcomes Classification (NOC). [17] The instrument that guide the assessment of pregnant women' breastfeeding knowledge included 18 knowledge descriptors (Figure 1).

The instrument was composed of two parts: a) socio demographic and obstetric data and sources of information; b) knowledge instrument, with the 18 knowledge descriptors. Each knowledge descriptor was documented according to researcher clinical judgment on the pregnant women' knowledge on the specific topic. Thus, if pregnant women revealed the knowledge, their response was recorded as "yes" meaning adequate knowledge, or if they did not reveal the knowledge, the response was recorded as "no" meaning lack of knowledge of breastfeeding. [18] For instance, to assess pregnant' knowledge about proper latch signs, they were asked "*How do you think you know that the baby is doing*



**Figure 1.** Descriptors used to assess pregnant women's breastfeeding knowledge.

*a good latch?*" If the pregnant women mentioned that "*the baby's chin should touch the breast, but the nose should not, and the baby lips should cover more of the areola with the lower lip than with the upper lip*" their response was recorded as "yes", meaning they had *adequate knowledge* about proper latch signs.

The instrument reliability was analyzed by calculating the Kuder-Richardson Coefficient (KR-20), indicated to test the reliability of binary measurements. There was *very good* internal reliability (K-R 20 = 0.88).

#### 2.4. Data Analysis

To analyze the data, the Statistical Package for Social Sciences (SPSS) program version 19.0 was used. The pregnant women's knowledge was analyzed using descriptive statistics, and the profile of expectant mothers more knowledgeable about breastfeeding was analyzed using inferential statistics. The score of maternal knowledge on breastfeeding was calculated, ranging between 0 and 1.

The scores of breastfeeding knowledge and their relationships with maternal characteristics (*i.e.*, age, education level, living with the child's father, parity, planned pregnancy and previous experience on breastfeeding) were examined.

## 2.5. Ethical Considerations

The ethical principles in the Declaration of Helsinki were used in the planning and conduct of the study. The institutions involved gave the approval and nurses-midwives of health centers were approached to facilitate recruitment of pregnant women. Eligible pregnant women provided voluntary consent for participation after researcher explanation of the study purpose, procedures, benefits and that declining participation would have no adverse consequences in health care provision. All participants were assured of confidentiality. After each interview, the researcher shared with nurse the main nursing diagnosis to contribute to continuity of care.

## 3. Results

The mean age of the 621 expectant mothers that participated in the study was 29.55 (SD = 5.23). In relation to education level, 42.0% of pregnant women had higher education level, 32.7% had between 9 and 12 years of education and 25.3% had less than 9 years of education. For 62.9% of women the pregnancy was planned. More than a quarter of pregnant women already had one child (28.2%). Almost all the pregnant women revealed intention to breastfeeding (99.3%) and 25.1% referred to previous breastfeeding experience.

Regarding sources of information, the results highlighted that pregnant women used more formal than informal sources. In fact, more than half of the pregnant women' revealed that utilized as sources of information related to breastfeeding: nurse-midwife (51.1%); medical doctor (50.6%); books (55.0%); and internet (50.8%). Family and others mothers were referred as source of information for 27.6% and 19.9%, respectively.

The examination of pregnant women' knowledge about breastfeeding revealed that they were knowledgeable about the benefits of breastfeeding (69.9%). In the assessment of the others 17 descriptors, more than half of the pregnant women' revealed a lack of knowledge (**Table 1**).

For five knowledge descriptors, more than 80% of the pregnant women revealed lack of knowledge. In fact, 86.5% of the pregnant women revealed a lack of knowledge about the measures that stimulate lactation, 80.5% revealed a lack of knowledge about the signs of milk production and release and 78.3% revealed a lack of knowledge about signs of adequate nutritional intake.

Fissures of the nipple and breast engorgement were complications often associated with breastfeeding in the early weeks, and the main causes of breastfeeding failure and the most frequent causes of breastfeeding discontinuation. As observed in **Table 1**, more than three-quarters of the pregnant women revealed a lack of knowledge concerning breast engorgement and nipple fissure risk factors and prevention measures.

Pregnant women who had a higher knowledge level were the oldest ( $U = 37,591.50$ ;  $P = 0.007$ ), already had another child ( $U = 22,246.50$ ;  $P < 0.001$ ) and cohabited with the father of the child ( $U = 16,257.50$ ;  $P < 0.001$ ). There was also a significant difference in the level of pregnant women' breastfeeding knowledge

**Table 1.** Percentage of pregnant women with lack of knowledge on breastfeeding descriptors.

Knowledge of...	Lack of knowledge % (N)
Benefits of breastfeeding	28.7 (178)
Satiety signs	55.2 (343)
Hunger signs	55.6 (345)
Position of mother and child	56.2 (349)
Strategies to keep the baby awake during the feeding	62.5 (388)
Characteristics of colostrum and milk	63.3 (393)
Influence of mother's nutrition upon milk supply (composition)	67.2 (416)
Criteria to decide the timing and duration of breastfeeding	68.8 (428)
Proper latch signs	73.4 (456)
Criteria for deciding when to offer one or two breast	74.2 (461)
Risk factors for fissure of the nipple	77.5 (481)
Prevention of nipple fissure	77.5 (481)
Signs of adequate nutritional intake	78.3 (486)
Milk production and release signs	80.5 (500)
Breast engorgement prevention measures	80.5 (500)
Risk factors for breast engorgement	81.5 (506)
Difference between let down reflex and breast engorgement	83.6 (519)
Measures that stimulate lactation	86.5 (537)

by education degree ( $\chi^2_{(2)} = 16.24$ ;  $P < 0.001$ ), confirming that pregnant women with higher education levels had higher knowledge levels than pregnant women with basic or secondary education.

There was a significant difference in pregnant women's knowledge level ( $U = 201,20.50$ ;  $P < 0.001$ ) concerning previous experience on breastfeeding, confirming that mothers who reported having previous experience demonstrated a higher knowledge level.

## 4. Discussion

The lack of knowledge can influence the success and duration of breastfeeding. There is consensus in the literature that the knowledge and skills to ensure the correct latch and to adopt measures to stimulate the lactation are essential to effective breastfeeding. [1] [2] [3] The importance assigned by pregnant women to learn about breastfeeding is reported in several studies. The results in this study also found that pregnant women had a significant lack of knowledge.

### 4.1. Lack of Knowledge Related to Lactation Stimulation

In actual study was observed lack of knowledge particularly concerning lactation stimulation. A total of 86.7% expectant mothers revealed lack of knowledge of measures that stimulate lactation and 80.5% revealed lack of knowledge of milk

production and release signs. This two indicators were the ones that more pregnant revealed deficit. In a Finnish study was observed similar results. Laanterä *et al.* [12] in their study that aimed to describe breastfeeding knowledge of child-bearing parents including 123 pregnant mothers and 49 fathers verified that the respondents correctly answered 68% of the items related to breastfeeding knowledge.

In the Percegoni *et al.* [19] study, 62.2% of mothers recognized the existence of factors that interfered with the production and release of breast milk, but only 1.5% referred to the importance of proper latch as one of these factors. Chaudhary *et al.* [9] observed that 75% revealed a lack of knowledge about the meaning of exclusive breastfeeding and the importance of night feeding. Ekambaram *et al.* [8] reported that the maternal knowledge was inadequate regarding time to initiate breastfeeding (92%), colostrum feeding (56%), duration of exclusive breastfeeding (38%), and expressed breast milk (51%).

Contrariwise, Senarath *et al.* [5] highlighted different results. The authors found that more than 90% of mothers knew that breastfeeding should be offered on demand, the advantages of colostrum, and the recommended duration for exclusive breastfeeding.

#### 4.2. Lack of Knowledge Related to Breastfeeding Technique

Three-quarters of pregnant women didn't know the signs of proper latch and the criteria for how to decide to offer one or both breasts at each feeding, and 86.5% did not demonstrate knowledge about lactation stimulation measures. Those findings are analogous to the results of other studies. In fact, Percegoni *et al.* [19] found that 61% and 79% of mothers, respectively, did not demonstrate knowledge about how to ensure the proper latch.

#### 4.3. Lack of Knowledge Related to Complications

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Risk factors for fissure of the nipple	77.5 (481)
Prevention of nipple fissure	77.5 (481)
Signs of adequate nutritional intake	78.3 (486)
Breast engorgement prevention measures	80.5 (500)
Risk factors for breast engorgement	81.5 (506)
Difference between let down reflex and breast engorgement	83.6 (519)

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The lack of knowledge, particularly about breastfeeding technique, about the intervals of feeding, and about the use pacifier and/or silicone nipples, with the consequent inability to ensure a proper latch, constitute risk factors for breastfeeding complications and consequent abandonment of breastfeeding. The evidence shows that a higher knowledge level about breastfeeding and complications management has the potential to lead to an increase in the duration of breastfeeding and to produce more positive perceptions about breastfeeding experience.

#### 4.4. Profile of Knowledgeable Pregnant

In this study, the pregnant women who had demonstrated a higher knowledge level were the oldest, had higher education level, and had previous experience in breastfeeding. These findings were similar to the results of other studies. [5] [6] [8] [12] [19]

Berman [20] reported that pregnant women ranked breastfeeding fourth among content considered most important to learn during pregnancy. In the study, 60% of first-time mothers considered breastfeeding “very important”; however, among mothers who already had one child, only 28.2% considered “very important”. In this study, mothers with previous experience on breastfeeding were those who revealed higher knowledge level.

In this study, pregnant women revealed a *reasonable* level of breastfeeding knowledge. This result is similar to results reported in other studies. Chaudhary *et al.* [9] reported that mothers did not have adequate knowledge about the correct way to breastfeed. In other studies, the knowledge level was satisfactory (Senarath *et al.*) or fairly good (Radzniwan *et al.*) [5] [21] Also, Kishore *et al.* (2009) stated that 39% of mothers had satisfactory breastfeeding knowledge. [22] Komarsson *et al.* [6] found that mothers demonstrated a good knowledge level about breastfeeding issues.

The majority of pregnant women in this study chose to breastfeed their babies, perhaps because of their knowledge about breastfeeding benefits for the child and mother. In fact, only 28.7% of the pregnant women revealed a lack of knowledge on this topic. Other authors have reported similar results. According to Zhou *et al.* (2010), the knowledge that “breastfeeding is better for the baby” was indicated as the main reason for breastfeeding (87%). [11] However, Radzniwan *et al.* [21] reported that more than 20% of mothers in their study were ignorant regarding breast milk protection against allergies, and 15% of mothers were not aware that breast milk is better than formula. Chaudhary *et al.* [9] reported in their study that only 25% had an idea about the importance of colostrum.

Based on the low breastfeeding knowledge level, the results of this study confirmed that mothers need to learn how to breastfeed their babies, and that the learning process should be initiated during pregnancy. The evidence has shown that antenatal education on breastfeeding has a positive effect on the duration of breastfeeding. Other studies corroborate those results, verifying that antenatal education has a positive impact on breastfeeding initiation and maintenance rates. [4] [8]

#### 5. Conclusions

Pregnant women revealed a significant lack of knowledge at the moment when it was assessed.

The expectant mothers more knowledgeable are the oldest, with higher education levels, cohabited with the father of the child, and those that already had another child and breastfeeding experience. The focus of care should emphasize

on the younger, the first-time mothers and less well-educated women as particular vulnerable and poorer prepared groups concerning breastfeeding knowledge. The challenge is to prepare mothers to breastfeeding decisions and actions, beginning in pregnancy. Increasing pregnant women's knowledge and confidence in their capacity to decide and act will contribute to mastery and breastfeeding success.

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