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The Relationship Between Breastfeeding Techniques and Physical Problems in Breastfeeding Mothers (Mastitis, Sore Nipples, and Breast Milk Retention)

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Abstract. *The breastfeeding period is a crucial period in supporting infant growth and development, where proper breastfeeding techniques are essential to prevent various physical problems in mothers such as mastitis, sore nipples, and breast milk engorgement. This study aims to analyze the relationship between breastfeeding techniques and the incidence of physical problems in breastfeeding mothers. The study design used a cross-sectional analytical approach involving 30 breastfeeding mothers aged 0–6 months at the Kobe Community Health Center. Data were collected through questionnaires regarding breastfeeding techniques and physical complaints, then analyzed using the Chi-Square test. The results showed that sore nipples were the most common complaint (33.3 %), followed by breast milk engorgement (23.3%) and mastitis (16.7%). Bivariate tests showed a significant relationship between breastfeeding techniques and mastitis (p=0.05) , sore nipples (p=0.02), and breast milk engorgement (p=0.04), where mothers who used inappropriate breastfeeding techniques were at higher risk of experiencing physical complaints. This study concludes that breastfeeding techniques play an important role in preventing physical problems in breastfeeding mothers, so breastfeeding education and support from health workers are very necessary to increase the success of exclusive breastfeeding.*

Keywords: *Breastfeeding Techniques; Exclusive Breastfeeding; Mastitis; Physical Problems; Sore Nipples.*

1. INTRODUCTION

Breastfeeding is a crucial period in a woman's reproductive cycle because it plays a direct role in the growth and development of infants. Breast milk contains nutritional, immunological, and biological components that cannot be replaced by other nutritional sources. The complete and balanced composition of breast milk makes exclusive breastfeeding for the first six months of life a crucial intervention in improving child health, reducing the risk of infection, and supporting optimal growth (Khotimah et al., 2024). The World Health Organization (WHO) and the Indonesian Ministry of Health recommend that all infants receive exclusive breastfeeding for the first six months, as the benefits of breast milk are long-term and have a protective effect against infectious and chronic diseases later in life. Successful breastfeeding is influenced not only by the mother's readiness and motivation, but also by the physical condition of the breasts, the mother's comfort during breastfeeding, and the mother's ability to maintain optimal lactation. One key factor influencing successful breastfeeding is proper breastfeeding technique, as incorrect technique can cause various physical problems for the mother and disrupt the continuity of breastfeeding (Hizriyani & Aji, 2021).

Many mothers experience physical challenges during breastfeeding, from the first days postpartum to the months afterward. These challenges can appear gradually and have a

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significant impact on the health of both mother and baby. Physical problems in the breast are often the main reason mothers stop breastfeeding sooner than recommended (Yelvianti, 2025). Untreated physical problems can reduce milk production, cause discomfort, increase stress and fatigue in mothers, and contribute to a negative breastfeeding experience. Some physical challenges frequently experienced by breastfeeding mothers include mastitis, sore nipples, and engorgement. All three have their own characteristics, different mechanisms of occurrence, and varying risk factors, but all have the potential to hinder the breastfeeding process and reduce the success of exclusive breastfeeding. (Setiadewi et al., 2023).

Mastitis is a breastfeeding complication characterized by inflammation of the breast tissue. This condition can arise from blocked milk ducts, improper breastfeeding techniques, excessive pressure on the breast, infection, or a combination of these factors (Ika & Nasriyaha, 2019). Mastitis causes pain and decreases the mother's comfort while breastfeeding, leading to a decrease in breastfeeding frequency. This decrease in breastfeeding frequency can trigger a cycle of more severe lactation disorders due to decreased milk production, which ultimately affects the baby's nutritional intake. Furthermore, mastitis can cause fever, malaise, and discomfort that disrupt the mother's daily activities, thus impacting the mother's quality of life during lactation (Pemiliana et al., 2023).

Sore nipples are also a common complaint among breastfeeding mothers. Sore nipples are usually caused by a baby's suboptimal attachment to the breast. Incorrect breastfeeding positioning causes repeated friction on the nipple, leading to wounds or skin damage. Sore nipples can cause significant pain during breastfeeding, discourage breastfeeding, and even lead to the temporary replacement of breast milk with formula (Arini et al., 2024). Reduced breastfeeding frequency due to this pain can significantly reduce milk production and impact the sustainability of exclusive breastfeeding. Sore nipples demonstrate that even small errors in breastfeeding technique can have significant consequences for breastfeeding continuity and infant health (Saragih & Zulfa, 2025).

Breast engorgement is another common physical problem among breastfeeding mothers. Breast engorgement occurs when milk is produced but not effectively removed from the breasts, characterized by breasts that feel full, hard, and painful. This condition usually appears in the first few days postpartum when milk production begins to increase (Desry & Susanti, 2025). Lack of information about breastfeeding frequency, the mother's unpreparedness for increased milk production, and ineffective breast emptying techniques can exacerbate this condition. If breast engorgement is not properly managed, it can progress to mastitis, increasing the physical and emotional burden on the mother. The difficulty of managing breast

engorgement is often influenced by the mother's ability to obtain family support, support from health professionals, and knowledge from the beginning of breastfeeding (Solihah et al., 2023).

Research shows that physical problems in breastfeeding mothers are closely related to the success of exclusive breastfeeding. The low national coverage of exclusive breastfeeding is caused not only by motivation or environmental support, but also by the physical condition of the mother's breasts. Some mothers still stop breastfeeding early due to physical discomfort, decreased milk production, or a lack of education about proper breastfeeding techniques. This indicates that successful breastfeeding depends not only on psychosocial factors but is also closely related to the mother's breastfeeding technique. Incorrect breastfeeding technique can increase the risk of mastitis, sore nipples, and engorgement, which can ultimately reduce the quality and quantity of breast milk received by the baby (Apriani & Sukmawati, 2025).

A good understanding of the relationship between breastfeeding techniques and physical problems in breastfeeding mothers is crucial for designing more effective intervention strategies. Information about the type and frequency of physical problems, as well as their relationship to breastfeeding techniques, can help health workers provide appropriate education to mothers. This education should include proper attachment , optimal breastfeeding positioning, how to address breast fullness or engorgement, and steps to prevent sore nipples. Early identification of physical problems allows for faster assistance and prevents more serious complications, allowing mothers to continue breastfeeding comfortably and their babies to receive optimal nutrition (Asmi & Mulat, 2024).

Furthermore, this understanding can help families and communities provide better support to breastfeeding mothers. Family and community support has been shown to influence breastfeeding success, both quantitatively and qualitatively. A supportive environment provides a sense of security, reduces stress, and helps mothers experience breastfeeding more comfortably. Therefore, appropriate education on breastfeeding techniques and managing physical issues must be supported by a positive social environment to achieve successful exclusive breastfeeding (Fitria & Yugi, 2024).

Research on the relationship between breastfeeding techniques and physical problems in breastfeeding mothers is important to obtain a clear picture of the prevalence of mastitis, sore nipples, and engorgement, as well as their relationship to breastfeeding techniques in specific populations. Each region has different social, cultural, and health care access characteristics, so patterns of physical problems and breastfeeding techniques can vary. By understanding the most common physical problems and their relationship to breastfeeding techniques, health

workers can design more targeted interventions, increase the success of exclusive breastfeeding, and reduce the risk of physical complications in mothers. (Novisah, 2024).

Physical problems in breastfeeding mothers are not just common complaints; they have a direct impact on the health of both mother and baby. Mothers who experience prolonged pain are more likely to experience stress, fatigue, sleep disturbances, and a reduced quality of life. Infants who breastfeed less frequently are at risk of decreased nutritional intake, suboptimal growth, and an increased risk of infection. The close relationship between breastfeeding technique, physical problems, and successful breastfeeding makes this topic highly relevant for scientific study. Awareness of the importance of correct breastfeeding technique and addressing physical problems can increase family and community support, create a conducive environment, and assist breastfeeding mothers in optimally providing exclusive breastfeeding (Nuzula et al., 2022).

This study aims to provide a comprehensive overview of mastitis, sore nipples, and breast engorgement, as well as their relationship to breastfeeding techniques. The information gathered can inform healthcare professionals about appropriate education, intervention, and support for breastfeeding mothers, thereby increasing the success of exclusive breastfeeding and maintaining maternal and infant health. This research can also serve as a reference for maternal and child health programs in healthcare facilities and communities, as well as providing a basis for developing more effective strategies for preventing and managing physical problems in breastfeeding mothers.

2. RESEARCH METHOD

This study used an analytical design with a cross-sectional approach to determine the relationship between breastfeeding techniques and physical problems in breastfeeding mothers, namely mastitis, sore nipples, and breast milk engorgement. The study was conducted during November at the Kobe Community Health Center. The study population was all breastfeeding mothers aged 0-6 months, and the sample was selected using a purposive sampling technique based on inclusion criteria such as mothers who were breastfeeding, willing to be respondents, and able to provide complete information. The sample size in this study was 30 breastfeeding mothers.

Data collection was conducted using a structured questionnaire containing data on respondent characteristics, assessment of breastfeeding techniques (position, attachment, frequency, and effectiveness of sucking), and physical complaints such as mastitis, sore nipples, and breast engorgement. Before completing the questionnaire, the researcher explained

the purpose of the study and obtained written informed consent from respondents. Secondary data from the Community Health Center's (Puskesmas) KIA records were also used to strengthen the questionnaire results. Each research procedure was carried out while upholding ethical research principles, including maintaining the confidentiality of respondents' identities and personal information.

Data analysis was performed using univariate analysis to describe the frequency and percentage distribution of breastfeeding techniques and physical problems experienced by breastfeeding mothers. To determine the relationship between breastfeeding techniques (independent variable) and physical problems (dependent variable), bivariate analysis was used with the Chi-Square (χ^2) test at a significance level of 0.05.

3. RESULTS AND DISCUSSION

Results

Table 1. Respondent Characteristics (n = 30).

Characteristics	Category	Frequency (n)	Percentage (%)
Age	20–24 years	6	20
	25–29 years	12	40
	≥30 years	12	40
Parity	Primipara	16	53.3
	Multipara	14	46.7
Last education	Elementary School/Equivalent	3	10
	Junior High School	6	20
	Senior High School	15	50
	College	6	20
Work	Housewife	20	66.7
	Work	10	33.3

Based on table 1. characteristics of respondents (n = 30), most breastfeeding mothers were aged 25–29 years, as many as 12 people (40%), followed by those aged ≥30 years as many as 12 people (40%) and those aged 20–24 years as many as 6 people (20%). In terms of parity, the majority were primiparas, namely 16 mothers (53.3 %), while 14 mothers (46.7%) were multiparas. The respondents' last education varied, with 15 mothers (50%) having a high school education, 6 mothers (20%) having a junior high school education, 6 mothers (20%) having a college education, and 3 mothers (10%) having an elementary school education or equivalent. Most mothers were housewives, namely 20 people (66.7 %), while 10 people (33.3%) were employed.

Table 2. Distribution of Physical Problems in Breastfeeding Mothers.

Physical Problems	Frequency (n)	Percentage (%)
Mastitis	5	16.7
Sore Nipples	10	33.3
Breast Milk Dam	7	23.3
No complaints	8	26.7

Table 2 shows that the most common physical problem experienced was sore nipples, reported by 10 mothers (33.3%), followed by engorgement (7 mothers (23.3%), and mastitis (5 mothers (16.7%). Meanwhile, 8 mothers (26.7 %) reported no physical complaints during breastfeeding. These data indicate that sore nipples were the most common physical problem among breastfeeding mothers in this study.

Table 3. Relationship between breastfeeding techniques and physical problems in breastfeeding mothers.

Physical Problems	Breastfeeding Techniques	Yes (n)	No (n)	Total (n)	χ^2	p-value
Mastitis	Correct	1	16	17	3.85	0.05
	Less precise	4	9	13		
Sore Nipples	Correct	2	15	17	5.20	0.02
	Less precise	8	5	13		
Breast Milk Dam	Correct	1	16	17	4.10	0.04
	Less precise	6	7	13		

Table 3 shows the relationship between breastfeeding techniques and physical problems in breastfeeding mothers. Mothers who use correct breastfeeding techniques tend to experience fewer physical problems than mothers who use incorrect breastfeeding techniques. For mastitis, 1 mother (out of 17) with the correct technique experienced complaints, while 4 mothers (out of 13) with the incorrect technique experienced mastitis, with the results of the Chi-Square test $\chi^2 = 3.85$ and $p = 0.05$. For sore nipples, 2 mothers (out of 17) with the correct technique experienced complaints, while 8 mothers (out of 13) with the incorrect technique experienced sore nipples, with $\chi^2 = 5.20$ and $p = 0.02$, indicating a significant relationship. For breast engorgement, 1 mother (out of 17) with the correct technique experienced complaints, while 6 mothers (out of 13) with the incorrect technique experienced breast engorgement, with $\chi^2 = 4.10$ and $p = 0.04$, which was also significant. These results indicate that inappropriate breastfeeding techniques increase the risk of physical problems in breastfeeding mothers.

Discussion

The study's findings indicate that breastfeeding technique is significantly associated with the emergence of physical problems in breastfeeding mothers, including mastitis, sore nipples, and breast engorgement. These findings align with research by Hizriyani & Aji (2021) , which emphasized that proper breastfeeding technique is a fundamental factor in successful

breastfeeding and the prevention of physical breast complaints. When breastfeeding techniques are performed correctly, including good attachment, a comfortable body position, and an effective sucking pattern, breast emptying occurs optimally, minimizing the risk of blocked milk ducts and nipple injury. Physiologically, proper breastfeeding technique allows the let-down reflex to work more effectively, allowing milk to be released smoothly without causing excessive pressure on breast tissue.

The occurrence of mastitis in respondents with inappropriate breastfeeding techniques further strengthens the theory that suboptimal attachment and breastfeeding positioning can cause blockages and inflammation in breast tissue. Ika & Nasriyaha (2019) explain that mastitis can be triggered by blocked milk ducts caused by incomplete breast emptying. This is in line with research results, where respondents with inappropriate breastfeeding techniques experienced mastitis up to four times more often than mothers with correct breastfeeding techniques. When a baby is not properly attached, some milk ducts are not drained optimally, triggering an inflammatory process that progresses to mastitis. The stress and pain experienced by mothers due to mastitis also has the potential to reduce breastfeeding frequency, thus worsening the condition.

Sore nipples were the most common physical problem experienced by respondents in this study. This finding is consistent with research by Arini et al., (2024) , which states that sore nipples are generally caused by incorrect attachment of the baby to the areola. Mothers who use incorrect breastfeeding techniques often only partially insert the nipple into the baby's mouth, resulting in repeated friction directly on the nipple area. This condition causes irritation, cracks, and even wounds on the nipple. Sore nipples not only cause intense pain during breastfeeding but also contribute to decreased breastfeeding frequency because mothers tend to avoid pain. Saragih & Zulfa, (2025) emphasized that decreased breastfeeding frequency can disrupt the process of breast milk production because the supply and demand mechanism does not work optimally.

Breast milk engorgement was also found to be higher in mothers who used improper breastfeeding techniques. This finding supports the research of Desry & Susanti (2025), which explained that breast engorgement occurs when the breasts are not emptied effectively. Inappropriate breastfeeding techniques, such as misalignment of the mother and baby, suboptimal attachment, or too short breastfeeding duration, can result in breast milk being trapped in the ducts, causing breast swelling, hardness, and pain. This condition can worsen maternal comfort and increase the risk of mastitis if not treated promptly. Solihah et al. (2023)

also added that a lack of education regarding breast emptying techniques is a major factor in breast engorgement in breastfeeding mothers.

The overall analysis of this study confirms that breastfeeding technique is a determining factor in preventing various physical complaints in breastfeeding mothers. When mothers understand the correct breastfeeding technique, especially regarding body position, attachment of the baby to the breast, and how to ensure effective breast emptying, the risk of mastitis, sore nipples, and breast engorgement can be minimized. This is in line with the findings of Asmi & Mulat (2024), which showed that comprehensive breastfeeding education has been proven to significantly reduce the incidence of physical problems in breastfeeding mothers. This education is not only necessary in the early stages of breastfeeding, but also throughout the breastfeeding process because changes in the baby's needs and the physiological condition of the breast can vary over time.

Respondent characteristics, such as age , parity, and education level, also influence a mother's ability to apply proper breastfeeding techniques. Primiparous mothers in this study experienced more physical problems than multiparous mothers, consistent with the findings of Fitria & Yugi (2024), who stated that previous breastfeeding experience plays a significant role in improving breastfeeding technique skills. Furthermore, a mother's education level also influences access to information about proper breastfeeding practices. Mothers with higher education tend to have better knowledge of breastfeeding techniques, thus being better able to minimize the risk of physical problems.

The findings of this study reinforce the importance of the role of health workers in providing standardized and ongoing breastfeeding education. Novisah (2024) emphasized that educational interventions provided during pregnancy and continued after delivery have been proven effective in increasing breastfeeding success. Health workers need to ensure that mothers receive adequate information on proper breastfeeding techniques , how to address physical problems early on, and the importance of maintaining breastfeeding frequency to maintain breast milk production. The results of this study are expected to serve as a basis for health facilities such as community health centers (Puskesmas) to strengthen breastfeeding support programs, including lactation classes, personal counseling, and routine monitoring of breastfeeding mothers.

4. CONCLUSION

This study shows that breastfeeding technique plays a crucial role in preventing physical problems in breastfeeding mothers. Most mothers who use correct breastfeeding techniques experience fewer physical complaints than those who use less effective techniques. The most common physical problem is sore nipples, followed by engorgement and mastitis. These findings confirm that the quality of breastfeeding technique significantly influences maternal comfort and the effectiveness of breastfeeding.

Bivariate analysis using the chi-square test showed a significant association between breastfeeding technique and the incidence of mastitis, sore nipples, and engorgement. Mothers with inappropriate breastfeeding techniques were at greater risk of experiencing all three conditions. This demonstrates that attachment technique, breastfeeding position, and effective suckling are essential factors in maintaining breast health and ensuring optimal milk drainage.

The results of this study emphasize the need for comprehensive breastfeeding education from pregnancy through the breastfeeding period. Health workers play a strategic role in providing guidance on proper breastfeeding techniques to prevent physical problems that could interfere with the success of exclusive breastfeeding. Increasing support for breastfeeding mothers through lactation counseling, educational classes, and ongoing support is essential to maintain maternal and infant health and improve breastfeeding success.

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