

ARAŞTIRMA / RESEARCH

Factors Affecting Perception of Insufficient Milk in Primiparous Mothers: A Cross-Sectional Study*Primipar Annelerde Yetersiz Süt Algısını Etkileyen Faktörler: Kesitsel Bir Çalışma*Ayşenur TURAN¹, Fatma Şule BİLGİÇ², Gülçin BOZKURT³¹Medipol University, Faculty of Health Sciences, Department of Midwifery, Istanbul, Turkey²Halic University, Faculty of Health Sciences, Department of Midwifery, Istanbul, Turkey³Istanbul University-Cerrahpasa, Faculty of Health Sciences Department of Midwifery, Istanbul, Turkey

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Abstract**Objective:** This study was conducted to examine the factors affecting insufficient milk supply in primiparous pregnant women.**Material and Method:** The descriptive and cross-sectional study was conducted on 320 mothers hospitalized in the obstetric clinic of private hospital between January 4 and May 1, 2022. The data were obtained by using the "Descriptive Information Form" and the "Insufficient Milk Perception Scale".**Results:** The mean age of the mothers was 23.99±3.84 years and the gestational age of the babies was 38.92±0.74 weeks. It was determined that there was a significant difference between the mother's delivery type, the first time to hold the baby in her arms after the birth, the first breastfeeding time, witnessing the breastfeeding person before, and thinking of giving the baby a pacifier or bottle, and the total score of Insufficient Milk Perception Scale (p<0.05).**Conclusion:** It was observed that mothers who gave a vaginal birth, held their babies after birth, initiated breastfeeding early and had witnessed breastfeeding before perceived their milk more sufficient.**Keywords:** Primiparous mother, perception of insufficient milk, breastfeeding, breast milk.**Öz****Amaç:** Bu çalışma, primipar gebelerde yetersiz süt üretimine etki eden faktörleri incelemek amacıyla yapılmıştır.**Gereç ve Yöntem:** Tanımlayıcı ve kesitsel tipte olan çalışma, 4 Ocak-1 Mayıs 2022 tarihleri arasında özel bir hastanenin kadın doğum kliniğinde yatan 320 anne ile gerçekleştirildi. Veriler "Tanımlayıcı Bilgi Formu" ve "Yetersiz Süt Algı Ölçeği" kullanılarak elde edildi.**Bulgular:** Annelerin yaş ortalaması 23,99±3,84, bebeklerin gebelik haftası 38,92±0,74 idi. Annenin doğum şekli, doğumdan sonra bebeği ilk kez kucağına alma durumu, ilk emzirme zamanı, emziren kişiye daha önce tanık olma ve bebeğe emzik ya da biberon vermeyi düşünme ile Yetersiz Süt Algısı Ölçeği toplam puanı arasında anlamlı fark olduğu belirlendi (p<0,05).**Sonuç:** Normal doğum yapan, doğumdan sonra bebeğini kucağına alan, emzirmeye erken başlayan ve daha önce emzirmeye tanık olan annelerin sütlerini daha yeterli algıladıkları görüldü.**Anahtar Kelimeler:** Primipar anne, yetersiz süt algısı, emzirme, anne sütü.**1. Introduction**

The infant's breastfeeding status and breastfeeding success are affected by many factors. Maternal factors include socio-cultural level, anxiety, depression, pregnancy planning status, mother's employment status, parity, mode of delivery, antenatal care, and postpartum pain (4). Factors related to the baby are gestational age, birth weight, pacifier, and bottle use (5). The level of knowledge of breastfeeding, the idea that the baby is not receive enough human milk, the support of breastfeeding by the family, breast problems, duration of first breastfeeding, breastfeeding witness, the mother's previous experiences of breastfeeding, the feeding of formula in the hospital after birth, and the mother's perception of insufficient milk are the factors affecting breastfeeding (6-8).

The perception that the mother does not have enough milk to meet the baby's needs is defined as insufficient milk perception (9). It is rare for milk production to be physiologically inadequate. Conditions such as stress, anxiety and pain due to the mother's inadequate perception of her milk can suppress the release of the hormone oxytocin, thus affecting milk secretion (10). It has been observed that it is most commonly observed that quitting breastfeeding is in the first week. In studies that examined only at factors affecting breastfeeding, it has been reported that crying babies caused anxiety in mothers and that their milk was perceived as inadequate, and that mothers started feeding their babies with food or additional foods with the idea that their babies were not full (4).

It is known that women with breastfeeding experience are affected by the success or failure experienced during the previous breastfeeding period (4,11,12). Yanikkerem et al (12) found that primiparous mothers with no breastfeeding experience had more anxiety about breastfeeding than multiparous mothers. In researches, it was observed that the perception of competence of milk was positively affected in mothers who had breastfeeding experience and were trained in breastfeeding (11,13). In the literature examines the factors that influence breastfeeding and breastfeeding practices. Research examining insufficient milk perceptions and influencing factors of primiparous mothers in the first 24 hours is limited. This study was conducted to examine the factors affecting the perception of insufficient milk in primiparous mothers.

2. Material and Method

It is a cross-sectional and descriptive type of research. STROBE was used in the planning, implementation and reporting of the study design (14).

2.1. Study population and sample selection

The research was conducted between 1 January and 1 May 2022, in the obstetrics clinic of a private hospital. The minimum sample size required for the study was calculated using power analysis. In the power analysis, sample size was calculated based on the relationship between more than two group means. Type 1 error rate (α)=0.05, power of the study ($1 - \beta$) 0.80 (Type II error=0.20), Gokceoglu and Kucukoglu (13) data were used to calculate the effect size and 0.31. Accordingly, the minimum number of samples to be reached was found to be 264. It was aimed to reach 291 samples by taking into account the risk of loss of 10%. As a result of the study, 320 mothers were included in the study.

Sample selection criteria

- The mother is willing to participate in the research,
- Be primiparous,
- The mother and baby have no a problems preventing breastfeeding,
- The baby is born at term (38-42 weeks gestation),
- Be in the first 24 hours after birth,
- The mother and the baby are kept in the same room,
- The mother has breastfed the baby at least once.

2.2. Data collection instruments

Data were obtained using the "Descriptive Information Form" and the "Insufficient Milk Perception Scale". The Descriptive Information Form was prepared by the researchers according to the information in the literature; consists of 20 questions related to the socio-demographic, pregnancy, delivery, infant and breastfeeding characteristics of the mother (4,11,12).

Inadequate Milk Perception Scale: The scale was developed by McCarter-Spaulling (2001) to measure

how adequately the mother perceives her milk. The Insufficient Milk Perception Scale consists of a total of 6 questions and a single subscale. The first question on the scale is whether the mother finds her milk sufficient. The first question is answered as yes or no. The other 5 questions are scored between 0-10. The given score indicates that as it approaches zero, the mother perceives her milk as inadequate, and as she approaches 10, she perceives enough. A minimum of zero points and a maximum of 50 points can be obtained from the scale. The high score indicates that milk is sufficiently perceived. The Cronbach alpha value of the scale was found to be 0.82 by Gökçeoğlu and Küçüköğlü (13). In this study, the cronbach a value of the scale was found to be 0.85.

2.3. Data collection

The data were obtained by a researcher (A.T.) in the date range of the research using the face-to-face interview method. It took an average of 10-15 minutes to collect the data using the data collection instruments.

2.4. Analysis of the data

The Statistical Package for Social Science program (SPSS-24.0) was used to analyse the findings obtained in the study. Descriptive statistical analyzes were obtained with frequency, percentage, mean (X), standard deviation, and min-max values. The Kolmogorov-Smirnov normality test was used to assess whether the data were suitable for normal distribution. The Mann Whitney U test was used to compare the Insufficient Milk Perception Scale scores and their descriptive features two groups, and the Kruskal-Wallis test was used to compare more than two groups. The relationship between continuous variables was evaluated using Spearman's correlation analysis. Results were evaluated using a 95% confidence interval representing the 0.05 significance level ($p < 0.05$).

3. Results

The mean age of the mothers was 23.99 ± 3.84 years and the gestational age of the babies was 38.92 ± 0.74 weeks.

When Table 1 shows that there was no statistically significant difference between the insufficient milk perception level scores ($p > 0.05$) according to the mother's educational status, study, planned pregnancy and information about breastfeeding during pregnancy. It was determined that the insufficient milk perception scores ($p < 0,000$) for mothers who gave birth vaginally compared to mothers who gave birth by caesarean section were significant (Table 1). When Table 2, there was a significant difference between the time of first holding the baby, the time of breastfeeding the baby first after birth, witnessing breastfeeding before and receiving a pacifier or bottle for the baby, and the averages of insufficient milk perception scores ($p < 0.05$) (Table 2). Mothers who take their baby in their arms as soon as they are born and breastfeed, see someone who is breastfeeding before, and do not think about giving a bottle to their babies perceived their milk as more sufficient (Table 2).

Table 1. Comparison of Inadequate Milk Perception Scale Score Averages According to Mother and Baby Characteristics (n=320)

| Variables | n (%) | Insufficient Milk Perception Scale Scores $\bar{x} \pm SD$ | Test/p |
|--|-----------|--|-----------------|
| Mother's educational status | | | |
| Literate | 43(13.4) | 45.06±7.83 | KW (X^2) /p |
| Primary education | 54(16.9) | 45.03±10.00 | |
| Secondary education | 167(52.2) | 45.14±7.09 | |
| University education | 56(17.5) | 46.28±5.20 | |
| Working status of the mother | | | |
| Working | 112(35) | 44.72±8.08 | Z/p |
| Not working | 208(65) | 46.41±6.05 | -1.601;0.109 |
| Baby's gender | | | |
| Girl | 164(51.2) | 45.52±7.54 | Z/p |
| Boy | 156(48.8) | 45.10±7.40 | -1.150;0.250 |
| Planned pregnancy status | | | |
| Planned | 244(76.2) | 45.02±7.97 | Z/p |
| Unplanned | 76(23.8) | 46.27±5.48 | -5.45;0.586 |
| Type of birth | | | |
| Vaginal birth | 173(54.1) | 47.00±6.13 | Z/p |
| Caesarean delivery | 147(45.9) | 43.34±8.37 | -5.444;0.000 |
| Getting consulting about breastfeeding during pregnancy | | | |
| Yes | 49(15.3) | 47.42±4.15 | Z/p |
| No | 271(84.7) | 44.93±7.86 | -1.875;0.061 |

Z: Mann Whitney U; KW: Kruskal Wallis

Table 2. Comparison of Inadequate Milk Perception Scale Score Averages According to Breastfeeding Characteristics (n=320)

| Variables | n (%) | Insufficient Milk Perception Scale Scores $\bar{x} \pm SD$ | Test/p |
|--|-----------|--|-----------------|
| Holding the baby first | | | |
| Immediately after birth | 126(39.4) | 47.25±5.49 | KW (X^2) /p |
| 30 to 60 minutes | 63(19.7) | 46.07±5.60 | |
| 61 minutes to 2 hours | 106(33.1) | 42.70±9.12 | |
| 121 minutes, and more | 25(7.8) | 46.18±8.69 | |
| Time to breastfeed the baby first after birth | | | |
| Immediately after birth | 110(34.4) | 47.70±4.38 | KW (X^2) /p |
| 30 to 60 minutes | 70(21.9) | 45.84±6.92 | |
| 61 minutes to 2 hours | 89(27.8) | 42.47±9.45 | |
| 121 minutes, and more | 51(15.9) | 44.65±7.97 | |
| Witnessed breastfeeding before | | | |
| Yes | 219(68.4) | 46.01±7.10 | Z/p |
| No | 101(31.6) | 43.81±8.03 | -3.407;0.001 |
| Breastfeeding support | | | |
| Yes | 71(22.2) | 47.30±3.94 | Z/p |
| No | 249(77.8) | 44.75±8.11 | -1.659;0.097 |
| Getting help for breastfeeding | | | |
| Yes | 302(94.4) | 45.30±7.42 | Z/p |
| No | 18(5.6) | 45.50±8.38 | -0.032;0.975 |
| Giving the baby a pacifier or bottle | | | |
| Yes | 149(46.6) | 44.30±8.21 | Z/p |
| No | 171(53.4) | 46.20±6.65 | -2.188;0.029 |

Z: Mann Whitney U; KW: Kruskal Wallis

Looking at Table 3, there was a positive correlation between the total score average of the Inadequate milk perception scale average scores and the recommended time for human milk and total breastfeeding time within 24 hours (Table 3).

Table 3. Relationship Between Demographic and Breastfeeding Characteristics and Inadequate Milk Perception Scale Score Averages (n=320)

| Variables | $\bar{x} \pm SS$ | Insufficient Milk Perception Scale Total Score |
|--|------------------|--|
| Maternal age (years) | 23.99±3.84 | r 0.070 p 0.213 |
| Gestational age of the baby (week) | 38.91±7.13 | r 0.021 p 0.213 |
| Recommended time for breastfeeding only (month) | 6.63±3.04 | r 0.130*** p 0.020 |
| Recommended time for total breastfeeding (month) | 21.95±7.10 | r 0.240 p 0.670 |
| Breastfeeding time within the first 24 hours (hours) | 9.40±5.51 | r 0.161** p 0.004 |

*Spearman Correlation Analyses **Correlation is significant at the 0.01 level (2-tailed), ***Correlation is significant at the 0.05 level (2-tailed)

4. Discussion

The results of the study, which was carried out to examine the factors affecting the perception of insufficient milk in primiparous pregnant women were compared with the literature. The absence of milk from the mother is related to the perception of the mother (12), and it has been reported that cases where physiologically insufficient milk production is rare (10).

The mother's thinking that her milk is insufficient and that the baby is not fed causes anxiety in the mother, and this can negatively affect breastfeeding success. It is known that mothers who perceive their milk to be inadequate are unable to cope with the solvable problems that arise during breastfeeding, that additional feeding begins early in the baby's life and that premature termination of breastfeeding occurs (4).

Cesarean section rates have been increasing in Turkey in recent years, and it has been reported that 59.6% of the cesarean section is delivered in 2020 reports (3). In caesarean delivery, the pain experienced by the mother negatively affects breastfeeding. The mother's focus on her own problems can cause a delay in breastfeeding (10,15). In this study group, it was determined that the mother who gave birth vaginally perceived her milk more adequately. Lin et al. found that mothers who gave birth by caesarean section and used additional feeds perceived their milk as inadequate (16). It has been reported that maternal pain and fatigue after caesarean section, due to difficulties in establishing a breastfeeding position, delayed initiation of breastfeeding, and the perception that her milk is inadequate and affecting the success of breastfeeding (17,18). The results and the literature are in parallel. It can be said that caesarean delivery is an important factor affecting the inadequate perception of human milk.

It is known that the time to start breastfeeding is important for the continuity of breastfeeding. Newborns are born with suction, search and swallowing reflexes, and in the first 30 minutes after birth, it is the period when newborns are most

active (13). For successful breastfeeding, it is recommended to ensure early skin contact between mother and baby during the postpartum period, to start breastfeeding within the first half-hour and to breastfeed frequently on demand. Once the baby is born, when it provides skin-to-skin contact with the mother, the baby begins to find and suck the breast spontaneously (11,19). According to the THDS 2013 data, the breastfeeding rate in our country in the first hour was 50%, while in 2018 it was 71%.³ In our study group, it was determined that mothers who met their baby early and breastfed early perceived their milk more adequately. Similarly, Lin et al. found that those who started breastfeeding early perceived their milk more positively (16). Research has shown that early initiation of postpartum skin contact and breastfeeding positively affects breastfeeding attitude and mothers' perceptions of milk, and breastfeeding is more successful (15,20). In order for human milk to be sufficient perceived, mothers should be brought together with their babies early and breastfed within the first half-hour.

Pacifier and bottle feeding causes the baby to absorb in less, the prolactin causes the hormone to be suppressed, the amount of milk is reduced and the milk is perceived as insufficient (21). Research shows that mothers who use of pacifiers and bottle breastfeed incorrectly, breastfeeding is negatively affected, and mothers stop breastfeeding early because they perceive their milk as inadequate (11,22,23). In the study group, it is seen that mothers who did not buy pacifiers or bottles for their babies perceived their milk to be more adequate, which is compatible with the literature.

5. Conclusion and Recommendations

According to the results of this study, mothers who give birth vaginally, meet their baby early, breastfeed and breastfeed their baby within the first half hour perceive their milk to be more adequate. In order to successfully maintain breastfeeding, it may be recommended that vaginal births are supported, that mother and baby are introduced early and that breastfeeding is initiated within the first half hour.

Limitations of the study; research examining insufficient milk perceptions and factors influencing this in primiparous mothers in the first 24 hours is limited.

6. Contribution to the Field

This research explored the reasons why women perceive their milk supply as inadequate. Midwives and nurses can change mothers' perceptions of insufficient milk and support successful breastfeeding, starting in the antenatal period through counselling roles.

Ethical Aspects of the Research

Approval was obtained from the local ethics committee (Date:30/03/2022 No:61). Participants who were informed about the data collection process were included in the study after receiving consent. It was stated that participating in the study for mothers was voluntary. It was stated that no fees will be charged to the mothers for research purposes and/or no fees will be paid. In this study, we undertake that all the rules required to be followed within the scope of the "Scientific Research and Publication Ethics Directive of Higher Education Institutions" have been complied with, and that none of the actions specified under the heading "Actions contrary to Scientific Research and Publication Ethics" have been carried out.

Conflict of Interest

This article did not receive any financial fund. There is no conflict of interest regarding any person and/or institution.

Authorship Contribution

Concept: AT, GB; **Design:** FŞB, AT, GB; **Supervision:** AT, GB, FŞB; **Funding:** AT, GB; **Materials:** AT; **Data Collection/Processing:** AT, GB; **Analysis/Interpretation:** AT, GB, FŞB; **Literature Review:** AT, GB, FŞB; **Manuscript Writing:** AT, GB, FŞB; **Critical Review:** AT, GB, FŞB.

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