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Breastfeeding Self-Efficacy and Success in Mothers of Infants with Indirect Hyperbilirubinemia

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ABSTRACT

Purpose: This descriptive study aimed to assess the breastfeeding self-efficacy and breastfeeding success of mothers whose infants were diagnosed with indirect hyperbilirubinemia (IHB).

Methods: The research was conducted on 115 mothers whose infants were undergoing phototherapy treatment in the neonatal intensive care, postpartum, and postoperative care units of a maternity hospital in Ankara. Data were collected through face-to-face interviews. Mothers completed the Mother-Infant Identification Form and the Breastfeeding Self-Efficacy Scale (BSES); their breastfeeding processes were evaluated using the LATCH scale.

Results: The average BSES score among the 115 mothers surveyed was found as 51.79 ± 9.4. The average of LATCH scores was 7.46 ± 1.93. LATCH scores differed significantly by the gender of the infants, their birth weight, and the time of discharge, whereas the average BSES scores showed no significant differences across these variables.

Conclusion: The study revealed that the level of self-efficacy and breastfeeding success of mothers whose infants diagnosed with IHB was insufficient. Also, multiple factors are considered to influence the initiation and continuation of breastfeeding behaviors.

Keywords: breastfeeding self-efficacy, indirect hyperbilirubinemia, newborn, phototherapy

ÖZET

Amaç: Bu araştırma, bebeği indirekt hiperbilirubinemi (İHB) tanısı almış annelerin emzirme öz-yeterliliği ve emzirme başarısının değerlendirilmesi amacıyla tanımlayıcı olarak yapılmıştır.

Yöntemler: Araştırma, Ankara'da bir kadın doğum hastanesinde yenidoğan yoğun bakım, postpartum ve postoperatif bakım servislerinde, fototerapi tedavisi alan 115 annenin katılımıyla gerçekleştirilmiştir. Veriler, yüz yüze görüşme yöntemiyle toplanmıştır. Anneler, Anne-Bebek Tanıtım Formu ve Emzirme Öz-Yeterlilik Ölçeği'ni (EÖYÖ) doldurmuş; emzirme süreçleri LATCH ölçeği ile değerlendirilmiştir.

Bulgular: Araştırmaya katılan 115 annenin EÖYÖ puan ortalaması 51,79 ± 9,4, LATCH puan ortalaması ise 7,46 ± 1,93 olarak bulunmuştur. Bebeklerin cinsiyetine, doğum ağırlığına ve taburcu olma zamanına göre LATCH puanları ortalamaları anlamlı farklılık gösterirken, EÖYÖ puan ortalamalarının anlamlı farklılık göstermediği belirlenmiştir.

Sonuç: İHB tanısı alan bebeklerin annelerinde emzirme öz yeterliliği ve emzirme başarısının düşük düzeyde olduğu belirlenmiştir. Ayrıca, emzirme davranışlarının başlatılması ve sürdürülmesinde birden fazla faktörün etkili olduğu değerlendirilmiştir.

Anahtar Kelimeler: emzirme öz yeterliği, indirekt hiperbilirubinemi, yenidoğan, fototerapi

Hyperbilirubinemia is characterized by a yellowing of the skin and sclera due to elevated levels of bilirubin, caused by the catabolism of the hem fragment of the hemoglobin molecule (hemoglobin-myoglobin-cytochrome). Hyperbilirubinemia is more commonly referred to as jaundice (1,2). IHB, depending on the type of bilirubin deposited in the serum. The pathophysiological causes and potential complications differ between direct hyperbilirubinemia and IHB. While IHB in infants can be physiological and temporary, direct hyperbilirubinemia is pathological in all cases (2,3). Although there are not definitive data on the prevalence of hyperbilirubinemia in newborns in our country, a multicenter study conducted in 2018 found that 6.4% of infants had bilirubin levels greater than 25 mg/dL, 0.23% had acute bilirubin encephalopathy, and 0.2% had hearing loss (2).

The most important characteristic of indirect bilirubin deposited in serum is its ability to pass the blood-brain barrier when there is excessive deposition in the body, which may induce neurotoxic effects on the brain, and may ultimately result in the most life-threatening complication of IHB – kernicterus. Kernicterus is a complex condition that develops in infants as a result of severe IHB and is associated with serious neurological dysfunction. The definitive findings of this clinical picture mostly manifest after one year of age, and may result in permanent sequelae, such as cerebral palsy, hearing loss and intellectual disability, or even infant mortality (2,3,4).

The American Academy of Pediatricians (AAP) and the TNS underline that kernicterus, which develops due to IHB in otherwise healthy term and late-preterm infants, is a "condition that should never develop". The exact rate of incidence of kernicterus in Türkiye or around the world is currently unknown, it has been estimated as higher than acceptable. (1,3,4). The estimated rate of incidence of kernicterus among term and late-preterm infants in North America and Europe is reported to be 0.4–2.7/100.000 and is estimated to be 100 times higher in developing countries than in developed countries (5). In order to prevent and manage the IHB and kernicterus successful breastfeeding is a one of the major precautions (3).

Previous studies which investigated the factors that affected breastfeeding behaviors among mothers reported that breastfeeding self-efficacy was the most critical factor influencing the breastfeeding process (6,7).

The breastfeeding self-efficacy concept was theorized by Dennis and Faux (6), drawing on the self-efficacy theory of Albert Bandura in which self-efficacy is defined as an individual's feeling of efficacy to accomplish a specific task. Breastfeeding self-efficacy reflects the mothers' emotions and opinions regarding breastfeeding, the ability to cope with the challenges encountered during this process and the level of belief that "I can do this" (6). A successful lactating process can be achieved by encouraging the mother to lactate after birth and ensuring that nurses understand the challenges faced by mothers and help generate solutions (6,7).

There are various practices in Türkiye that aim to initiate and maintain successful breastfeeding, but despite all these practices, the rate of feeding with only breastmilk during the first six months has not yet reached a sufficient level, and early initiation of additional feeding has not been prevented (9,10). According to the 2018 Türkiye Demographic and Health Survey (TDHS), only 41.7% of infants were exclusively breastfed for the first six months of their lives (8). This rate remains below the desired level for optimal infant nutrition and health.

In the present study, we aimed to evaluate breastfeeding self-efficacy and breastfeeding success among mothers whose infants are diagnosed with IHB. Highlighting mothers' breastfeeding self-efficacy and breastfeeding success may contribute to the development of breastfeeding policies in our country.

In line with the aim of this study, the following research questions will be addressed:

Research questions:

1. Do the average BSES and LATCH scores differ according to the characteristics of mothers, including socio-demographic, obstetric, and breastfeeding factors?

2. Do the mean scores of the BSES and LATCH show a difference based on certain descriptive characteristics (gender, birth weight, percentage of weight loss after birth, time of discharge, and first feeding method) of newborns diagnosed with IHB?

Material and Methods

This descriptive study was carried out between May 2015 and May 2016 in the infant intensive care, postpartum and postoperative care clinics of one of the Women's Health Training and Research Hospital, in Ankara, Türkiye. Prior to the research, ethical approval was obtained from the relevant Institutional Review Board (IRB).

For the sample size calculation of this study, the mean and standard deviation values obtained from Küçükoğlu's (2011) study on the BSES and LATCH breastfeeding scales were used. The power analysis was performed with an expected 10% margin of error, and the required number of mothers to be included in the study was determined to be at least 115 based on a power = 0.82 and α = 0.01 (11). The ınfants included in the study were selected from those with a birth weight of 2500 grams or more, born between 37-42 weeks of gestation, aged less than 10 days postnatally, and without any hematological disease, infection, or need for treatment other than physiological jaundice. Infants with any hematologic disease other than IHB, infections or concomitant disorders were excluded from the study.The mothers included in the study were those aged 18 or older, with a term baby born at 37 weeks of gestation or later, no contraindications to breastfeeding, no multiple pregnancies, and who were willing, cooperative, and open to communication. Infants with any hematologic disease other than IHB, infections or concomitant disorders were excluded from the study.

To determine the descriptive characteristics of the mothers and their infants, data were collected using a Mother-Infant description form that was prepared by the researchers based on the literature, along with BSES and LATCH breastfeeding description and evaluation scales.

BSES, originally developed as a 33-item scale by Dennis and Faux in 1999, was later shortened to a 14-item scale by Dennis in 2003 (6). The BSES Form Scale is a 5-point Likert-type scale (1 = I am not sure at all, 2 = I am not very sure, 3 = I am occasionally sure, 4 = I am sure, 5 = I am always sure), with a minimum score of 14 and a maximum score of 70. Higher scores increase in direct proportion to an individual's level of breastfeeding self-efficacy. (7).

BSES has been used by more than 400 researchers and healthcare professionals in 30 countries so far. The validity and reliability study of the Turkish scale were carried out by Tokat (2009), and the Cronbach's Alpha value was shown to be 0.86. In the present study, the Cronbach's Alpha value was found to be 0.83. The LATCH scale was developed in 1994 by Jensen, Wallace and Kelsay to help healthcare providers in the assessment of effective breastfeeding by providing a systematic and standardized method of measurement (9). The items in the LATCH breastfeeding description and evaluation scale were adapted to an Apgar scoring system. LATCH is an acronym of the items on the scale, being the five situations faced by the mother and require appropriate interventions (9). (see Figure 1).

Each criterion that makes up LATCH Breastfeeding Description and Assessment Scale is given a score of 0, 1 or 2, and breastfeeding is assessed based on the total score, calculated by adding all scores. The highest and lowest total scores that can be obtained in this scale are 10 and 0, respectively, with scores lower than 10 indicate that the mother requires support for breastfeeding. The LATCH breastfeeding description and assessment scale is not only a tool of measurement that can be used by nurses but can also be used by mothers for self-assessment. (9,10).

Assessment	Scores		
CRITERIA	**0**	**1**	**2**
Latch	Sleepy or reluctant; no sustained latch	Repeated attempts to latch, holds nipple only, visible suction	Grasps the breast while holding the areola in the mouth, rhythmical sucking. Lips flanged
Visible swallowing	None	Some suction	Strong expirations visible during swallowing
Type of nipple	Inverted	Flat	Everted after stimulation
Mother's comfort of breast and nipple	Engorgement, cracked, bleeding, blisters	Reddened, small blisters, decreased comfort	Soft breasts and comfortable
Position of holding the infant	Full assist	Minimal assist	No assist

Figure1: Instructions for the Assessment of LATCH Breastfeeding Description Measurement Tool

The first validity and reliability study to use the Turkish scale were performed by Demirhan in 1997 (10), who found that the Cronbach's Alpha value for the scale was 0.94. In the present study, the Cronbach's Alpha value of the scale was found to be 0.62. This lower value may be attributed to factors such as sample size, cultural differences, or the administration process of the scale, which might affect its reliability in this specific context.

Statistical Analysis

The data collected in the study were analyzed using SPSS 24. Numerical data were represented as means and standard deviations, while nominal data (demographic) were summarized as frequencies and percentages. For the analyses of numerical data, Kolmogorov-Smirnov or Saphiro Wilk tests were applied initially to check whether the variables met the parametric conditions (normal distribution). For variables meeting parametric test conditions, a T-test was used for comparisons between two groups, and a One-Way Analysis of Variance (ANOVA) was applied to compare more than two groups. For non-parametric variables, a Mann-Whitney U-test was used for two-group comparisons, while a Kruskal-Wallis H-test was applied for comparisons among more than two groups. The reliability of the scales was investigated through Cronbach's Alpha values. A p-value of less than 0.05 was considered statistically significant for all analyses.

Results

Of the 115 infants included in the study, 58.3% were female and 41.7% were male. Among them, 10.4% had a low birth weight, while 89.6% had a normal birth weight. The mean birth weight of the infants was 3,193 ± 461 grams.

The differences between the birth weights and current weights of the infants were evaluated after classifying them into two groups (Table 1). The first group consisted of infants who had physiological weight loss after birth (weight loss less than 10%) and accounted for 90.4% of the study sample; while the second group consisted of infants with pathological weight loss who lost at least 10% of their birth weight. This group accounted for 9.6% of the sample. Of all the infants, 11,4% were discharged with their mothers within 24 hours of delivery, and 74.8% were initially fed with colostrum.

Table 1: Mean BSES and LATCH scores of the mothers based on descriptive characteristics of the infants (N=115)

Descriptive Characteristics	Number (n)	Percentage (%)	BSES Scores, Mean±SD	Test Value and Significance	LATCH Scores Mean±SD	Test Value and Significance
Gender						
Female	102	58.3	50.43±9.943	t=1.845	7.13±2.152	t=2.173
Male	13	41.7	53.69±8.385	p=0.068	7.92±1.485	**p=0.032**
Birth weight						
2,500 grams and below (Low birth weight)	12	10.4	51.58±2.667	U=609.000 p=0.934	6.50±0.417	U=383.500 **p=0.030**
Between 2,501 and 4,000 grams (Normal birth weight)	103	89.6	51.82±0.935		7.57±0.193	
Weight after birth (Percentage of weight lost)						
Less than 10% weight loss	104	90.4	51.96±9.556	U=401.000 p=0.860	7.42±1.987	U=274.400
10% or more weight loss	11	9.6	51.09±7.778		8.09±1.375	p=0.254
Time until discharge after delivery						
Within the first 24 hours after delivery (A)	13	11.4	48.69±3.039	KW=3.570 p=0.168	6.92±0.525	U=926.500 **p=0.021**
Later than 24 hours after delivery (B)	51	44.3	50.61±1.359		7.10±0.256	
Current inpatients*(C)	51	44.3	53.76±1.185		7.96±0.276**	
First mode of feeding						
Colostrum	86	74.8	53.48±1.185	t=3.458 **p=0.001**	7.74±1.777	t=2.784
Formula	29	25.2	46.79±9.500		6.627±2.162	**p=0.006**

**Mother-infant couples in 3–7th postnatal days and still being monitored at the hospital*
***Sources of difference according to Mann-Whitney U-test (Difference: B-C)*

Table 2: Mean BSES and LATCH scores of mothers according to their descriptive characteristics (N=115)

Descriptive Characteristics	Number (n)	Percentage (%)	BSES Scores, Mean±SD	Test Value and Significance	LATCH Scores, Mean±SD	Test Value and Significance
Mother's Age						
19-25 years	47	40.9	50.94±1.405	KW = 0.863 p=0.834	7.23±0.258	KW = 2.754 p= 0.431
26-30 years	34	29.6	51.74±1.476		7.44±0.392	
31-35 years	22	19.1	53.32±2.290		7.59±0.404	
36 years and above	12	10.4	53.36±2.288		8.17±0.441	
Education						
Primary school	51	44.3	51.43±1.277	KW = 1.169 p=0.557	7.73±0.238	KW = 2.415 p = 0.299
High school	38	33.0	51.11±1.533		7.11±0.311	
Undergraduate and graduate school	26	22.7	53.50±1.985		7.46±0.462	
Family type						
Elementary	89		53.00±0.966	U=767.000 **p=0.009**	7.45±0.211	U=1151.000 p=0.968
Large	26		47.65±1.858		7.50±0.348	
Type of delivery						
Normal	67	58.3	51.54±9.128	t=0.340 p=0.734	7.34±1.974	t = 0.769 p=0.444
C-section	48	41.7	52.15±9.910		7.63±1.886	
Planned/unplanned status of pregnancy						
Planned	93	80.9	52.27±0.988	U=854.500 p=0.231	7.55±0.197	U=887.000 p=0.327
Unplanned	22	19.1	49.77±1.899		7.09±0.446	
Number of deliveries						
Primiparous	61	53.0	49.13±9.703	t=3.359	6.84±1.908	t = 3.905 **p=0.000**
Multiparous	54	47.0	54.80±8.192	**p=0.001**	8.17±1.724	
Knowledge of breastfeeding						
Informed	89	77.4	52.92±0.953	U=853.000	7.73±0.200	U= 7323.000
Uninformed	26	22.6	47.92±1.965	**p=0.042**	6.54±0.360	**p=0.004**
Efficacy of information received on breastfeeding						
Yes	68	59.1	55.04±0.969	t=4.188 **p=0.000**	7.82±1.892	t=2.472 **p=0.015**
No	47	40.9	47.09±1.375		6.94±1.893	
Father's support during breastfeeding						
Supportive	103	89.6	52.40±0.914	U=402.500 **p=0.048**	7.63±0.184	U= 332.500 **p=0.008**
Non-supportive	12	10.4	46.58±2.732		6.00±0.564	
Knowledge of jaundice before delivery						
Informed	58	50.4	52.48±9.162	t=0.792 p=0.430	7.60±2.017	t=0.796 p=0.428
Uninformed	57	49.6	51.09±9.714		7.32±1.853	
Efficacy of information received on jaundice *(n=58)						
Yes	28	50.4	56.39±1.532	U=774.000 **p=0.004**	8.32±0.337	U=782.500 **p=0.004**
No	30	49.6	50.31±1.006		7.18±0.205	

**The question was answered by mothers who were informed about jaundice*

As shown in Table 2, family type significantly influenced BSES scores, with mothers in elementary families scoring higher than those in large families (U=767.000, p<0.05, Table 2). However, no significant difference was observed in LATCH scores based on family type (U=1151.000, p>0.05, Table 2). Parity also demonstrated a significant effect, as multiparous mothers had higher BSES (t=3.359, p<0.001, Table 2) and LATCH scores (t=3.905, p<0.001, Table 2) compared to primiparous mothers, reflecting the impact of prior breastfeeding experience on maternal self-efficacy. Mothers who were informed about breastfeeding scored significantly higher on both BSES (U=853.000,

p<0.05, Table 2) and LATCH (U=7323.000, p<0.01, Table 2) compared to those who were uninformed. Additionally, mothers who perceived the breastfeeding information they received as effective had significantly higher BSES (t=4.188, p<0.001, Table 2) and LATCH scores (t=2.472, p<0.05, Table 2).

Support from fathers during breastfeeding was another significant factor, as supportive fathers were associated with higher BSES (U=402.500, p<0.05, Table 2) and LATCH scores (U=332.500, p<0.01, Table 2) compared to those who were non-supportive. Knowledge of jaundice before delivery did not significantly impact BSES (t=0.792, p>0.05, Table 2) or LATCH scores (t=0.796, p>0.05, Table 2). However, among mothers who were informed about jaundice, those who found the information effective had significantly higher BSES (U=774.000, p<0.01, Table 2) and LATCH scores (U=782.500, p<0.01, Table 2), suggesting that the quality of information plays a crucial role. Maternal age, education level, and type of delivery did not show significant differences in BSES or LATCH scores. Specifically, maternal age (KW = 0.863, p>0.05 for BSES; KW = 2.754, p>0.05 for LATCH, Table 2), education (KW = 1.169, p>0.05 for BSES; KW = 2.415, p>0.05 for LATCH, Table 2), and type of delivery (t=0.340, p>0.05 for BSES; t=0.769, p>0.05 for LATCH, Table 2) were not significant. Planned versus unplanned pregnancy also did not significantly affect BSES (U=854.500, p>0.05, Table 2) or LATCH scores (U=887.000, p>0.05, Table 2).

In the study, a moderate positive and significant relationship was found between the BSES and the LATCH breastfeeding assessment tool (r=0.531, p<0.01).

Discussion

This study found that while the mean BSES scores of mothers did not differ significantly based on the gender of their infants, a significant difference in breastfeeding success was observed (p<0.05, Table 1). Aslan and Ege (2016) identified a significant relationship between infant gender and breastfeeding self-efficacy while investigating the relationship between maternal breastfeeding self-efficacy and the risk of depression (15). Similarly, Ören et al. (2023) found that infant gender had a significant effect on maternal breastfeeding attitudes. These findings suggest that factors such as the societal structure in which the study is conducted and the mother's satisfaction with the infant's gender may influence the outcomes (16). In this context, it is important for nurses to emphasize the importance of breastfeeding without gender discrimination in both antenatal and postnatal counselling (15,16,17).

While the mean BSES scores of the mothers did not vary significantly according to the birth weight of infants in this study, a statistically significant difference was noted in breastfeeding success (p<0.05, Table 1). Based on previous studies, all infants with a birth weight lower than 2.500 grams are considered to be low birth-weight infants, irrespective of the gestational week at birth. Previous studies have indicated that the mothers of infants with low birth weight experience difficulties in breastfeeding and have a high level of anxiety regarding the maintenance of breastfeeding after being discharged from the hospital. This leads mothers to be predisposed to quitting breastfeeding and switching to formula (17,20,24). Birth weight did not significantly affect BSES or LATCH scores, but low birth weight was associated with lower breastfeeding success (p<0.05, Table 1). Previous studies indicate that mothers of low birth-weight infants face more challenges and anxiety, necessitating additional breastfeeding support (16,17).

Postnatal weight loss did not significantly affect BSES or LATCH scores, though mothers of infants with pathological weight loss appeared to receive higher levels of breastfeeding support during hospitalization, which may mitigate negative effects (1,2). Monitoring infant weight loss in the first postpartum week is crucial for preventing health risks (3,21).

Early discharge (<48 hours) did not significantly affect BSES scores but reduced LATCH scores (p<0.05, Table 1). Literature links early discharge to increased IHB and rehospitalization rates, highlighting the importance of postnatal home visits and effective community healthcare services (3,4,5,21,22).

Mothers who fed their infants colostrum as the initial nutrient had significantly higher BSES and LATCH scores (p<0.05, Table 1). Colostrum's nutritional and laxative properties are vital for infant health and IHB prevention. Supporting colostrum feeding within the first postpartum hour is critical (16,20).

Sociodemographic characteristics such as maternal age and education level did not significantly affect BSES or LATCH scores (p>0.05, Table 2). However, family type significantly influenced BSES scores, with mothers

in nuclear families scoring higher ($p<0.05$, Table 2). Extended families often rely on elder relatives' practices, suggesting the need to involve older family members in breastfeeding education (19,20).

Parity emerged as a significant factor, with multiparous mothers scoring higher on BSES and LATCH than primiparous mothers ($p<0.05$, Table 2). Prior breastfeeding experience positively influenced current self-efficacy (7,18). Similarly, receiving adequate prenatal breastfeeding information significantly improved BSES and LATCH scores ($p<0.05$, Table 2), emphasizing the need to enhance the quality of prenatal care.

This study demonstrates that the father's attitude towards breastfeeding significantly affected the mean BSES and LATCH scores of the mothers. Several studies in the literature have discussed the support and influence of the father regarding the issue of breastfeeding (Lee and Ip, 2008; Hunter and Cattelona, 2014; Rempel et al., 2017; Sahin and Ozyurt, 2017). In a previous study, Kong and Lee (2004) found out that mothers who were encouraged by their spouses to breastfeed would more commonly prefer to breastfeed their infants (Kong and Lee, 2004). Based on our findings and previously reported data in the literature, nurses should consider the effects of the father on the mother's breastfeeding habits during their interventions to increase breastfeeding success and to include the fathers in training consultancy programs so that they can sufficiently support their spouses.

In the present study, the mean BSES and LATCH scores of the mothers did not differ significantly depending on their level of knowledge of infant jaundice ($p>0.050$). However, the mean BSES and LATCH scores varied significantly according to the level of satisfaction of the mothers with the information they had received ($p<0.05$, Table 2). In their study to identify the risk factors for infant IHB, Cayonu et al. (2011) concluded that the knowledge of the community on jaundice was insufficient, and the same study reported that, although all families recognized the jaundice of their infants between the third and fourth days, they delayed visiting hospital for an average of two days and referred to a hospital on the fifth day after onset (Cayonu et al., 2011). Uslu et al. (2012) carried out a study in which they analyzed the effects of the infant jaundice and breastfeeding training given to mothers and the early monitoring of infants by outpatient clinics, on the frequency of hospitalization due to jaundice. The authors found that these training reduced the duration of phototherapy and hospital stays in infants re-hospitalized for jaundice, and also decreased the associated costs. It is crucial that healthcare professionals who provide training and consultancy to the mothers on breastfeeding highlight the causes of IHB and the importance of breastfeeding for its prevention. Re-hospitalizations due to IHB or the continued inpatient monitoring of the infant for phototherapy may negatively affect the mother-infant relationship (Maisels and Newman, 2012; Uslu et al., 2012). The results of the present study suggest that the mothers' perception of having limited knowledge on IHB results in anxiety among these mothers, and consequently, has a negative effect on breastfeeding.

Conclusion

The present study, as a descriptive evaluation of breastfeeding self-efficacy and breastfeeding success among mothers whose infants were diagnosed with IHB, suggests that breastfeeding self-efficacy and breastfeeding success levels were insufficient among these mothers. Regular follow-up of early discharged mothers by public health nurses through home visits and the use of mobile health applications for continuous breastfeeding support during the prenatal and postnatal periods, along with including fathers in support programs, can help prevent complications and improve breastfeeding outcomes. Additionally, breastfeeding counseling programs should include topics on the prevention and management of complications related to IHB.

Declarations

Funding

This study had no external funding.

Conflicts Of Interest

The authors declare that they have no conflicts of interest.

Ethics Approval

This study was approved by the Ankara University Ethics Committee (Decision No: 2015-11/147, Date: May 7, 2015).

Availability Of Data and Material

The data for this study are available from the corresponding author upon reasonable request.

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Authors' contributions

All authors have significantly contributed to this article's preparation, thoroughly reviewed the manuscript, and approved its final version for submission.

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