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The relationship between the perception of breast milk of parents with term infants and exclusive breastfeeding in the postnatal first six months

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What is already known on this topic?

- *Although breast milk can meet all the nutritional needs of the baby during the first 6 months, the rates of exclusive breastfeeding in the first 6 months in the world and our country are not at the desired level.*
- *Studies on breast milk are generally based on mothers, and studies involving fathers are few.*
- *Fathers as well as mothers should be educated and informed about breastfeeding and breast milk.*

What this study adds on this topic?

- *This is the first study to examine the relationship between mother and father's perception of breast milk during birth and exclusive breastfeeding in the first 6 months.*
- *Inclusion of fathers in the study will contribute to the few studies conducted on fathers on breast milk.*
- *Since our study was conducted in a large Central Anatolian city, a local result will contribute to our country's data on breast milk and breastfeeding.*

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ABSTRACT

Objective: Breast milk is the ideal food that meets all kinds of nutritional contents of babies. The World Health Organization recommends that all babies be fed exclusively breastfeeding for the first 6 months. This study aimed to evaluate the relationship between the perception of breast milk of mothers and fathers with term babies and exclusively breastfeeding status in the first 6 months and to investigate the factors affecting exclusively breastfeeding status.

Material and Methods: Our longitudinal type study includes healthy/term infants and their parents born between 1 July-30 September 2018. In the postpartum period "adult's perception level of breast milk scale" was completed by the parents. The nutritional properties of the babies were recorded by reaching the families by phone when they were 2, 4, and 6 months old. Of the 341 families that participated in the study, 332 were evaluated and the study was completed with 304, 297, and 292 families at the 2nd, 4th, and 6th months, respectively.

Results: Exclusively breastfeeding ratio was 85.5%, 68%, and 50% in the 2nd, 4th, and 6th months, respectively. The mean score of the mothers on perception level of milk scale was significantly higher than the fathers (133.97±10.01 vs 123.91±13.41, p<0.001, respectively). The scale score of the mothers receiving breastfeeding training was significantly higher than the mothers without training (135.19±8.55 vs 130.91±12.25, respectively, p=0.008). The mode of delivery is related to the level of perception of breast milk of mothers and fathers. Mothers who had the last cesarean section had lower scale scores than those who delivered normally (131.71±12.11 vs 134.94±8.80, respectively, p=0.007). In the fathers whose spouse had a cesarean section, the scale scores were significantly higher than those whose spouses had normal delivery (126.42±12.73 vs 122.83±13.57, p=0.026, respectively). There was no correlation between exclusively breastfeeding status and breastmilk perception levels of the parents in the first 6 months. The mother's breastfeeding her previous child for ≥6 months and the use of pacifier/baby bottle were associated with exclusively breastfeeding status in the first 6 months.

Conclusion: Fathers should be included in breastmilk and breastfeeding training.

Keywords: Breastfeeding, breast milk, parents, perception

Introduction

Exclusively breastfeeding (EBF) is the feeding of the baby only with breast milk (BM) without any food or drink other than vitamins, minerals, and medicines. The World Health Organization recommends that all babies be fed with EBF for the first 6 months and that BM should be continued from the 6th month with supplementary foods until at least two years of age. Breast milk can meet all the nutritional needs of the baby during the first 6 months, and it is

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enough for the baby to grow and develop (1). While diarrhea, otitis media, and respiratory tract infections are less common in children who are breastfed, and the risk of obesity, Type 1-2 diabetes, and hypertension decreases in older ages. It has been shown that children fed with EBF for the first 6 months have higher cognitive functions (2, 3). It is estimated that providing EBF intake for the first 6 months after birth and extending the breastfeeding period up to 12 months will reduce deaths under the age of five by 13% (4).

Despite its known benefits, breastfeeding rates, which are high at birth, decrease as the baby grows. All over the world, the rate of nutrition with EBF is reported as 38% in the first 6 months and it is aimed to reach this rate to 55% by 2025 (5). Status of EBF is affected by various factors. One of the important factors affecting breastfeeding behavior is the support the mother receives from her environment and especially from her husband. Studies have reported that if fathers approach and support breastfeeding positively, mothers are more determined to start and continue breastfeeding (6, 7).

Although it is not possible to think of parents and babies independently of each other, mothers are still the main target of studies on breastfeeding and BM. Studies examining the effects of fathers on breastfeeding are limited. The aim of the study, which we have planned based on this point, is to evaluate the relationship between the perception of BM during delivery of parents with term babies and the status of EBF in the first 6 months and to investigate the factors that affect the EBF in the first 6 months. Our hypothesis in the study is that the babies of mothers and fathers who have a higher perception of BM during birth will have higher rates of EBF in the first 6 months.

Material and Methods

Our study is a longitudinal type study that continues for a period of 6 months. The study included mothers and fathers who had healthy and term babies born between July 1 and September 30, 2018, no breast problems/diseases that prevent breastfeeding, no communication impairment, literate, living in the same house, and willing to participate in the study. Parents and babies were excluded from the study in cases of premature birth (<37 weeks of gestation), multiple pregnancy, the presence of congenital anomalies in the baby, and the baby being admitted to the Neonatal Intensive Care Unit.

The first interview with the mothers and fathers of the babies eligible for the study was conducted face-to-face at the hospital within 4-48 hours after birth by the same researcher and information was given about the study. Sociodemographic characteristics of the parents, pregnancy, and birth information of the mother were recorded. The "adult's perception level of breast milk scale" was applied to all parents and the results were recorded. This scale was created by Eren (8) in 2016, with a study of 1750 adults, and its validity-reliability assessment (Cronbach's alpha coefficient; 0.93) was made. It is a scale that can be used to determine the perceptions of adults about the BM and was created to raise awareness of the BM in society. The scale is a five-point Likert type and consists of 30 items in total. The items are graded between 1-5 points, corresponding to the statements "strongly agree" and "strongly disagree". A minimum of 30 and a maximum of 150 points are obtained on the scale. A high score indicates that adults have a good perception of BM. The scale is in a form that can be easily filled in by literate individuals in 10-15 minutes (8). Permission was obtained from the authors to use the scale in our study.

At the end of the first meeting, parents were given a brochure with information on BM and breastfeeding. This written material was prepared by researchers from scientific sources to answer the questions that mothers and fathers might wonder about during the breastfeeding process.

In the study, when babies were 2, 4, and 6 months old, families were reached by phone and feeding status of babies was evaluated. These interviews were generally held with the mothers and questioned how and with what the baby was fed during these months, the reason if the baby was not receiving BM, the foods the baby received other than BM, and the use of pacifiers/bottles. Families who were called 5 times at the time of the assessment and with no response were defined as "unreachable families".

The study was conducted following the principles of the Declaration of Helsinki (2008) and approval was obtained from the ethics committee of Cumhuriyet University Faculty of Medicine (dated 28.06.2018 and numbered 2018-06 / 22). A written informed consent form was obtained from parents who agreed to participate in the study.

Statistical analysis

The data were entered into the Statistical Package for the Social Sciences 22.0 (IBM SPSS Corp.; Armonk, NY, USA) statistics program. Categorical measurements are expressed as numbers and percentages, while numerical measurements are expressed as mean±standard deviation. The normality of data distribution was evaluated by the Kolmogorov-Smirnov test. Chi-square test or Fischer's Exact test, when appropriate, was used in the evaluation of categorical data. Independent Samples t-test was used for the difference between two groups with normal distribution, Mann-Whitney U test for those not showing normal distribution, and ANOVA test for comparisons with more than two groups. The risk measures part of the Chi-square test was used for the odds ratio calculations. The statistical significance level was accepted as $p<0.05$.

Results

341 term babies born between 1 July and 30 September 2018 and their parents were included in the study. 7 families due to incomplete questionnaires and/or incomplete information, 1 baby who needed to be admitted to the NICU, and 1 mother who could not breastfeed her baby due to mastitis were excluded from the study, and the information of 332 families was taken into consideration in the first interview. However, during the 2nd-month interviews, it was learned that 2 babies died and these babies were excluded from the study. While 26 families could not be reached in the second month, 2 families stated that they wanted to quit and 5 families could not be reached in the 4th month. 5 families could not be reached in the sixth month. During follow-up, 304 in the 2nd month, 297 in the 4th month, and 292 babies and their families in the 6th month were evaluated (Figure 1).

174 of the babies (52.73%) were girls, 156 (47.27%) were male and 99 (30%) were born by cesarean delivery. The average birth weight of babies is 3292.90±384.59 (2335-4200) gr, and the average birth length is 49.64±1.22 (40-53) cm. The mean APGAR score in the first and 5th minutes are 8.89±0.52 (5-10) and 9.93±0.29 (8-10), respectively. Birth weeks of babies are on average $39^{1/7}$ weeks ($37-41^{5/7}$).

When 330 parents in our study were evaluated, 283 of the mothers (85.75%) and 256 of the fathers (77.57%) were between the ages of 18-35. 197 of the mothers (59.69%) were primary school / secondary school graduates, while 187 (56.7%) of the fathers were high school/university graduates. While most of the families (78.48%) describe their income status at a medium level, 259 families (78.48%) are nuclear family type (Table 1).

115 (34.84%) of the mothers were primipara and 215 (65.16%) were multipara. All multipara mothers have breastfed their previous babies for a while. 285 (86.36%) of the mothers in our study breastfed their babies within the first hour and 262 (79.39%) mothers gave their baby their milk as the first food. There were 258 (78.18%) mothers who participated in a program that gave breastfeeding training during their pregnancy and 72 (21.82%) who did not. 307 of the mothers (93.03%) stated that they received breastfeeding support at the hospital during and after delivery. Family elders and healthcare professionals constitute the largest portion of those who provide breastfeeding support with a rate of 81.11%. All mothers (99.69%) except one stated that they wanted to breastfeed their babies. Most of the mothers (59.40%) plan to breastfeed their babies for at least 2 years (Table 2). 113 (34.24%) of fathers stated that they were generally informed about BM before birth by health workers, while the number of fathers who did not receive any information was 217 (65.76%).

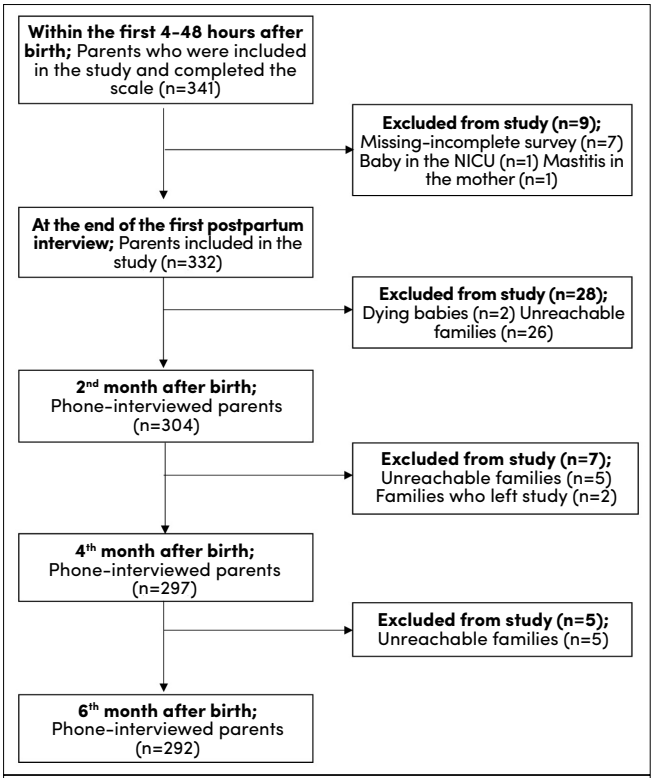

Figure 1. Infants and their families included in the study and excluded from the study NICU: Neonatal Intensive Care Unit

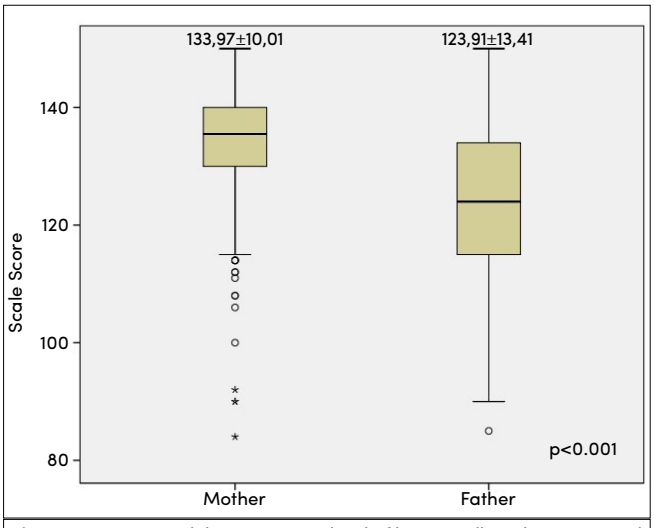

Figure 2. Parents' "adult's perception level of breast milk scale" scores and their comparison (n=330)

Table 1. Sociodemographic characteristics of mothers and fathers

Descriptive features (n=330)	n	%
Mother		
Age		
<18	10	3.03
18-35	283	85.75
>35	37	11.21
Education		
Primary school-secondary school	197	59.69
High school-university	133	40.31
Working status		
Housewife	304	92.12
Employed	26	7.88
Father		
Age		
<18	-	-
18-35	256	77.57
>35	74	22.43
Education level		
Primary school-secondary school	143	43.33
High school-university	187	56.67
Family		
Family type		
Nuclear	259	78.48
Extended	71	21.52
Living place		
City center	215	65.15
Village/district	115	34.85
Income rate		
Low	48	14.54
Middle	259	78.48
High	23	6.98

In our study, the rate of infants receiving BM was 95.06%, 86.53%, and 82.19% at 2, 4, and 6 months, respectively. The rate of EBF in the same months was determined as 85.52%, 68.01%, and 50%, respectively. The most common reason not to continue breastfeeding is that the baby does not want to breastfeed. While the rate of babies starting complementary food was 7.41% in the 4th month, it was 24.66% in 6 months. The rate of pacifier/bottle use was 27.63% at the 2nd month, 36.37% at the 4th month, and 46.24% at the 6th month. Table 3 shows the nutritional characteristics of babies at 2, 4, and 6 months.

Table 2. Characteristics of mothers regarding breastfeeding

Features (n=330)	n	%
Parity		
Primipara	115	34.84
Multipara	215	65.16
Breastfeeding the previous child		
Yes	215	100
Now	-	-
The duration of breastfeeding the previous child (month)		
0-2	11	5.11
3-4	13	6.04
5-6	16	7.44
6-12	30	13.95
12-24	102	47.44
>24	43	20.02
Breastfeeding experience for the last child		
Good	317	96.06
Bad	13	3.93
First time to breastfeed the last child		
0-1 hour after birth	285	86.36
>1 hour	45	13.64
First Food		
Breast milk	262	79.39
Formula	59	17.87
Sugar water	8	2.42
Date	1	0.32
Receiving training for breastfeeding		
Yes	258	78.18
No	72	21.82
Receiving breastfeeding support		
Yes	307	93.03
No	23	6.97
Breastfeeding support person (n=307)		
Family elder and health professional	249	81.11
Health professional	30	9.79
Family elder	15	4.89
Spouse, family elder, and health professional	9	2.93
Spouse	2	0.64
Spouse and health professional	1	0.32
Spouse and family elder	1	0.32
Breastfeeding intention of the mother		
Yes	329	99.69
No	1	0.31
Planned period of breastfeeding (year)		
<1	18	5.45
1-2	116	35.15
>2	196	59.40

When the "adult's perception level of breast milk scale" filled out by the parents was evaluated; the mean score for mothers was 133.97±10.01 (84-150) and for fathers 123.91±13.41 (85-150) (Figure 2). According to these results, the mean scale score of mothers is significantly higher than fathers (p<0.001). There was no significant relationship between parents' age, education level, employment status, place of residence, and perception of BM (p>0.05). The scale score of mothers whose last birth was cesarean is significantly lower than mothers who gave normal birth (131.71±12.11 and 134.94±8.80, respectively, p=0.007). The scale score of mothers who received breastfeeding and BM training was higher than mothers who did not receive an education (135.19±8.55 and 130.91±12.25, respectively, p=0.008). The scale score of fathers whose spouse had their last birth by cesarean was found to be significantly higher than fathers whose spouses had a normal birth (126.42±12.73 and 122.83±13.57, respectively, p=0.026) (Table 4).

There was no statistically significant difference in BM perception level between the mothers and fathers of babies fed with and not fed EBF at 2, 4, and 6 months after birth (p>0.05). It was found that maternal and paternal age, education level, working status of the mother, family type, parity, mode of delivery, mother's breastfeeding education, and receiving support from her environment for breastfeeding were not effective on the nutritional status of babies with EBF at 2, 4 and 6 months (p>0.05). Exclusively breastfeeding rates were found to be significantly higher in the last children of mothers who breastfed

Table 3. Nutritional characteristics of babies at 2. 4. and 6 months

Features, n (%)	2. Months (n=304)	4. Months (n=297)	6. Months (n=292)
Exclusive breastfeeding			
Yes	260 (85.52)	202 (68.01)	146 (50.0)
No	44 (14.48)	95 (31.99)	146 (50.0)
Continuing breast milk			
Yes	289 (95.06)	257 (86.53)	240 (82.19)
No	15 (4.94)	40 (13.47)	52 (17.81)
Reason for not continuing breast milk			
Baby doesn't want to suck	9 (60.04)	17 (42.50)	24 (46.42)
Mother's drug use	2 (13.32)	2 (5.00)	1 (1.92)
Not wanting to breastfeed	1 (6.66)	1 (2.50)	3 (5.76)
Milk shortage	1 (6.66)	13 (32.50)	16 (30.72)
Other[a]	2 (13.32)	7 (17.50)	8 (15.36)
Use of formula			
Yes	44 (14.48)	88 (29.62)	110 (37.68)
No	260 (85.52)	209 (70.38)	182 (62.32)
Providing complementary food			
Yes	-	22 (7.41)	72 (24.66)
No	-	275 (92.59)	220 (75.34)
Use of pacifiers/bottles			
Yes	84 (27.63)	108 (36.37)	135 (46.24)
No	220 (72.37)	189 (63.63)	157 (53.76)

[a]Mother starting work. mother becoming pregnant again

Table 4. The relationship of parents with the results of the "adult's perception level of breast milk scale" and descriptive characteristics

Features	Mother			Father		
	n	Scale Score (Mean±SD)	p	n	Scale Score (Mean±SD)	p
Age						
<18	10	131.00±7.87	0.237	-	-	0.232
18-35	283	134.22±9.76		256	124.38±13.19	
>35	37	135.16±8.51		74	122.26±14.08	
Education level						
Primary school/secondary school	197	134.73±9.52	0.191	143	123.32±14.52	0.477
High School/University	133	133.60±9.70		187	124.37±12.46	
Working status						
Housewife/unemployed	304	134.53±9.22	0.201	11	125.36±14.87	0.711
Employed	26	131.30±13.05		319	123.86±13.37	
Family type						
Nuclear	259	134.42±9.11	0.542	259	124.07±13.37	0.672
Extended	71	133.63±11.22		71	123.32±13.62	
Living place						
City Center	215	134.94±8.78	0.073	215	124.37±13.15	0.394
District/Village	115	132.86±10.82		115	123.05±13.88	
The last type of birth[a]						
C/S	99	131.71±12.11	**0.007**	99	126.42±12.73	**0.026**
NSVD	231	134.94±8.80		231	122.83±13.57	
Training status on breast milk						
Yes	258	135.19±8.55	**0.008**	113	124.78±13.72	0.389
No	72	130.91±12.25		217	123.46±13.25	
Parity						
Primipara	115	134.34±9.97	0.887			
Multipara	215	134.23±9.41				

[a]Mother's last birth type. spouse's last birth type for fathers, Statistical significance (p<0.05) in bold
C/S, Caesarean section; NSVD, Normal spontaneous vaginal delivery

their previous child for at least 6 months (p=0.008, p=0.001, and p=0.002, respectively) (Table 5). In mothers who breastfed their previous child for at least 6 months, the probability of feeding their last babies with EBF was 3.91 times in the first 2 months (95% CI 1.48-10.33), 4.68 times (%) in the 4th month. 95 CI 1.84-11.88) and 4.55 times (95% CI 1.60-12.91) at 6 months compared to mothers who breastfed for <6 months.

The use of pacifiers/bottles was associated with status of EBF, and the use of pacifiers/bottles in babies fed with EBF at 2, 4, and 6 months was significantly less than babies not fed with EBF (p<0.001) (Table 5). The probability of EBF in babies who do not use a pacifier/bottle is 12.23 times (95% CI 5.79-25.84) in the 2nd month and 5.78 times (95% CI 3.39-9.84) in the 4th month and 4.08 times (95% CI 2.50-6.65) at 6 months compared to babies using a pacifier/bottle. The time of first breastfeeding of the last child was also found to be related to status of EBF at 2 months. The rate of breastfeeding in babies fed with EBF in the second month in the first hour after birth is significantly higher than babies not fed with EBF (p=0.016). Fathers' rate of breastfeeding support was also higher in the group not fed with EBF in the 6th month after birth (p=0.041) (Table 5).

Discussion

Breastfeeding is the most suitable nutrition method for the healthy growth and development of babies. While breastfeeding rates have increased with the support programs all over the world, the desired results in nutrition with EBF have not been achieved. According to the Turkey Demographic Health Survey 2018 data, 98% of all born babies breastfed for a period of, and the rate of non-breastfed infants at the end of the fifth month was 11.9%. The rate of children fed EBF is 45.1% at the end of the third month and 14.4% at the end of the fifth month (9). These figures show that breastfeeding is a common practice in our country, but as the baby grows, the rates of EBF nutrition gradually decrease.

In contrast to our hypothesis that babies of mothers and fathers with high levels of perception and awareness about breast milk will be fed with EBF at a higher rate in the first 6 months, there was no significant difference in terms of the level of BM perception among the mothers and fathers of babies who were fed with and not fed with EBF in the 2nd, 4th, and 6th months following birth. This result suggests that different factors apart from the perception level of the parents about BM are also effective in feeding the baby with EBF for the first 6 months. Gölbaşı and Koç (10) applied the "breastfeeding attitude assessment scale" to mothers and found that there was no statistical difference between mothers who fed their babies with EBF and mixed feeding mothers, similar to our results. However, as far as we know, "adult's perception level of breast milk scale" was never used in EBF evaluation in the first 6 months in the

Table 5. Status of EBF at 2, 4, and 6 months after birth and associated factors

Features n (%)	2. Months (n=304)			4. Months (n=297)			6. Months (n=292)		
	EBF (+)	EBF (-)	p	EBF (+)	EBF (-)	p	EBF (+)	EBF (-)	p
Maternal age			0.871			0.981			0.738
<18	8 (3.1)	2 (4.5)		7 (3.5)	3 (3.2)		6 (4.1)	4 (2.8)	
18-35	223 (85.7)	37 (84.1)		173 (85.6)	82 (86.3)		123 (84.2)	127 (86.9)	
>35	29 (11.1)	5 (11.4)		22 (10.9)	10 (10.5)		17 (11.7)	15 (10.3)	
Paternal age			0.566			0.454			0.091
18-35	205 (78.8)	33 (75.0)		156 (77.2)	77 (81.1)		108 (74.0)	120 (82.2)	
>35	55 (21.2)	11 (25.0)		46 (22.8)	18 (18.9)		38 (26.0)	26 (17.8)	
Mother's education level			0.803			0.804			0.881
Primary/secondary school	155 (59.6)	25 (56.8)		118 (58.4)	58 (61.1)		89 (60.9)	85 (58.2)	
High school/unv	105 (40.4)	19 (43.2)		84 (41.6)	37 (38.9)		57 (39.1)	61 (41.8)	
Father's education level			0.678			0.174			0.062
Primary/secondary school	115 (44.2)	18 (40.9)		83 (41.1)	47 (49.5)		56 (38.4)	72 (49.3)	
High school/university	145 (55.8)	26 (59.1)		119 (58.9)	48 (50.5)		90 (61.6)	4 (50.7)	
Working status of the mother			0.766			0.503			1.00
Housewife	239 (91.9)	41 (93.2)		184 (91.1)	89 (93.7)		134 (91.8)	134 (91.8)	
Employed	21 (8.1)	3 (6.8)		18 (8.9)	6 (6.3)		12 (8.2)	12 (8.2)	
Family type			0.567			0.451			0.197
Nuclear	203 (78.1)	36 (81.8)		155 (76.7)	77 (81.1)		110 (75.3)	119 (81.5)	
Extended	57 (21.9)	8 (18.2)		47 (23.3)	18 (18.9)		36 (24.7)	27 (18.5)	
Parity			0.873			0.474			0.178
Primipara	92 (35.4)	15 (34.1)		72 (35.6)	35 (36.8)		47 (32.2)	58 (39.7)	
Multipara	168 (64.6)	29 (65.9)		130 (64.4)	60 (63.2)		99 (67.8)	88 (60.3)	
The last type of birth			0.371			0.382			0.702
C/S	77 (29.6)	16 (36.4)		58 (28.7)	32 (33.7)		46 (31.5)	43 (29.5)	
NSVD	183 (70.4)	28 (63.6)		144 (71.3)	63 (66.3)		100 (68.5)	103 (70.5)	
First breastfeeding for the last child			**0.016**			0.661			0.314
PN 0-1 hour	230 (88.5)	33 (75.0)		176 (87.1)	81 (85.3)		129 (88.4)	123 (84.2)	
>1 hour	30 (11.5)	11 (25.0)		26 (12.9)	14 (14.7)		17 (11.6)	23 (15.8)	
The duration of breastfeeding the previous child			**0.008**			**0.001**			**0.002**
<6 months	15 (8.9)	8 (27.6)		8 (6.1)	14 (23.3)		5 (5.0)	17 (19.3)	
≥6 months	154 (91.1)	21 (72.4)		123 (93.9)	46 (76.7)		95 (95.0)	71 (80.7)	
Mother's breastfeeding training			0.433			0.072			0.051
Yes	203 (78.1)	32 (72.7)		150 (74.2)	80 (84.2)		106 (72.6)	120 (82.2)	
No	57 (21.9)	12 (27.3)		52 (25.8)	15 (15.8)		40 (27.4)	26 (17.8)	
Breastfeeding support to the mother			0.104			0.241			0.372
Yes	244 (93.8)	38 (86.4)		189 (93.6)	86 (90.5)		137 (93.8)	133 (91.1)	
No	16 (6.2)	6 (13.6)		13 (6.4)	9 (9.5)		9 (6.2)	13 (8.9)	
Breastfeeding support of the father to his spouse			0.087			0.119			**0.041**
Yes	232 (89.2)	43 (97.7)		179 (88.6)	89 (93.7)		127 (87.0)	137 (93.8)	
No	28 (10.8)	1 (2.3)		23 (11.4)	6 (6.3)		19 (13.0)	9 (6.2)	
Use of pacifiers / bottles			**<0.001**			**<0.001**			**<0.001**
Yes	52 (20.0)	33 (75.0)		47 (23.3)	60 (63.2)		43 (29.4)	92 (63.1)	
No	208 (80.0)	11 (25.0)		154 (76.7)	34 (36.8)		103 (70.6)	54 (36.9)	
Scale Score[a]			0.478			0.352			0.824
Mother	134.0±9.8	133.5±9.1		134.2±9.8	133.6±9.7		133.2±10.1	134.1±9.5	
Scale Score[a]			0.701			0.389			0.078
Father	123.8±13.6	124.7±12.8		124.6±13.5	123.1±13.3		125.3±13.5	122.6±13.3	

[a]Mean±standard deviation (Adult's Perception Level of Breast Milk Scale). Statistical significance (p<0.05) in bold. C/S, Cesarean; NSVD, Normal spontaneous vaginal delivery; PN, Postnatal; Unv, University

literature. Moreover, our study is the first study in which this scale is also applied to fathers. Our results show that parents have positive perceptions of BM at birth and know that breast milk is a useful and unique nutrient for the baby. However, this positive perception of birth is not enough for the baby to be fed with EBF for the first 6 months.

While all babies in our study are breastfed when they are born, the rates of EBF decrease to 85.52% at 2 months, 68.01% at 4 months, and 50% at 6 months. Nutrition rates with EBF in the first 6 months have been reported between 9% and 52.8% in studies in our country and between 7% and 60% in various countries around the world (2, 11-15). The rate of feeding with EBF in the first 6 months determined in our study (50%) is above the general average of our country, and this result may be a reflection of the breastfeeding culture in our province, or it may be related to breastfeeding and BM awareness created in families through our study.

In our study, the total mean score obtained by mothers from the "adult's perception level of breast milk scale" was 133.97±10.01; for fathers, it is 123.91±13.41. In a previous study, the total mean score in adults between the ages of 19-65 on the same scale was 120.94±16.73 (8). In another study, the same scale was applied to premarital couples between the ages of 17-49, and the mean scale score was found to be 125.5±15.7 (16). It was noticed İn our study that the scale scores of fathers were similar to other individuals in the society, but the perception levels of mothers about BM were higher than other individuals. The scale score of mothers was found to be significantly higher than the fathers in our study. It is quite natural that this situation is reflected in the scale results as women carry their baby in their womb for months, give birth, and prepare for the role of mother are more sensitive to BM right after birth. Similar to our results, Arslan and Yeniterzi (17) found that mothers' level of knowledge about AS was higher than fathers'. On the other hand, this result shows that the perception and knowledge level of fathers about BM and infant nutrition should be improved and they should be supported at least as much as mothers (18, 19).

In our study, it was found that there was no relationship between the mother and father's age, education level, working status, family structure, place of residence, mother's parity, and scale score. In a previous study, scale scores were reported to be higher in adults between the ages of 33-39 than those in the age range of 19-25, 26-32, and 47-53, and in those who had a permanent job compared to those who had no job (8). In another study, it was stated that there was no significant relationship between working status and education level and scale score similar to our study (16). While Eren (8) stated that the scores of those living in nuclear families were significantly higher than those living in extended families, and a similar result was obtained in our study, but our result was not statistically significant.

In our study, the scale scores of mothers and fathers who received BM education were higher than those who did not receive education, but this difference was found to be statistically significant only for mothers. In one of the previous studies, the status of having BM education was not found to be effective on the scale scores, while in the other study, the scale score of adults who received BM education was found to be significantly higher (8, 16). In previous studies in which the "adult's perception level of breast milk scale" was used, the sample group was mixed, and parents were not differentiated. For this reason, there are no similar studies with which we can compare our results. However, in various studies, BM knowledge scores of mothers who participated in the BM training program were found to be higher (20, 21). In the study where Arora et al. (19) investigated the main reasons affecting breastfeeding, it was emphasized that it is very important to provide BM and breastfeeding training to parents. In our country, we think that studies including fathers should be carried out by standardizing the training.

The interesting result in our study is that the scale scores of mothers who gave birth by cesarean section were significantly lower than mothers who gave normal birth. Although cesarean delivery does not affect breastfeeding success, it is a risk factor especially for delayed first breastfeeding (22). Also, it has been reported that mothers who gave birth by cesarean section have low self-confidence about breastfeeding in the early postpartum period (23). Delay in delivery of milk in cesarean delivery, not being able to perform the first breastfeeding on time, pain after birth, and lack of self-confidence of mothers in breastfeeding may explain the significant difference between the type of delivery and the scale score found in our study (22, 24). For this reason, it is important to set the cesarean indication appropriately and to eliminate the negative opinions of mothers in this direction by providing breastfeeding support correctly in cesarean delivery. On the other hand, the scale score of the fathers whose spouses gave birth by cesarean section was significantly higher than the fathers whose spouses gave normal birth. No similar data were found in previous studies. This result, which is found in the opposite direction in fathers compared to mothers, may be due to the fathers' perception of cesarean delivery more positively in terms of BM nutrition and the comfort of their partners.

One of the factors found to be associated with EBF in the first 6 months in our study is the duration of breastfeeding of the previous child of multipara mothers. It was found that mothers who fed their last child with EBF for the first 6 months also fed their previous children with BM at a higher rate for at least 6 months. Several studies have reported that mothers who experienced breastfeeding had a 3.24 to 7.2 times increase in the probability of feeding their next baby with EBF in the first 6 months (25, 26). In our study, the probability of feeding their last babies with EBF was found to be 3.91, 4.68, and 4.55 times higher at 2, 4, and 6 months, respectively, compared to mothers who breastfed for ≥6 months, and our results are consistent with the literature. This has been associated with the mother's breastfeeding experience and breastfeeding self-confidence.

Starting breastfeeding within the first hour after birth is an important step in maintaining effective breastfeeding. Despite studies that found a significant relationship between breastfeeding within 0-1 hours after birth and EBF in the first 6 months, there are also studies reporting that no such relationship was found (21, 22, 27). In our study, mothers who fed their babies with EBF in the 2nd, 4th, and 6th months had higher breastfeeding rates in the first hour after birth, but statistical significance was found only in the second-month data.

In our study, although the mother's training on breastfeeding created a significant difference in scale scores, it was not found to be associated with the feeding status of babies with EBF in the first 6 months. Although studies are showing that breastfeeding education given to mothers increases the rates of nutrition with EBF, there are also studies reporting that there is no relationship between them as in our study (27). Since the content of breastfeeding training mentioned by our mothers is unknown and a standard program has not been implemented, our research may not be sufficient to evaluate the effectiveness of breastfeeding training.

Bottle and pacifier create nipple confusion in the baby, reduce the frequency of breastfeeding, hence the amount of milk, and cause a decrease in EBF rates and total BM delivery time by causing insufficient milk perception in the mother. According to the World Health Organization, an important step of successful breastfeeding is not using an artificial breast, pacifier, or bottle. In a meta-analysis in which studies examining the relationship between pacifier use and BM were evaluated, it was stated that the use of pacifiers was the most important factor negatively affecting nutrition with EBF (28). In many studies, it has been found that the rate of pacifier use is lower in babies fed with EBF, and the rate of BM withdrawal in the first 6 months is higher in babies who use pacifiers (29, 30). By the literature, the use of pacifiers/bottles in the 2nd, 4th, and 6th months after birth was significantly lower in the group fed with EBF in our study, and babies who do not use pacifiers/bottles are 12.23, 5.78, and 4.1 times more likely to be fed with EBF at 2, 4, and 6 months, respectively, compared to those who do. However, the use of pacifiers and bottles were not evaluated separately in our study. Therefore, babies who are not fed with EBF use more bottles and this may have affected our results.

It has been reported that the mother and father forming a harmonious team and the father supporting the spouse emotionally have positive results on EBF. On the other hand, in some studies, it was reported that fathers who actively participate in baby care can cause a decrease in the duration of BM giving and EBF rates. This situation was associated with the mother's perception of her husband's physical support as an intervention in her self-confidence and problem-solving skills (30). Interestingly, in our study, the support given by the father to breastfeeding in the first 6 months was higher in the group not fed with EBF, and the difference was statistically significant at the 6th month. In our opinion, mothers who did not feed their babies with EBF had more support requirements in breastfeeding and fathers also provided this support. Different studies are needed to investigate the father's approach to breastfeeding support and its effects on the mother.

Our study is the first study to examine the relationship between "adult's perception level of breast milk scale" and EBF status in the first 6 months. Including fathers in the assessment is the strongest aspect of our study. The fact that the survey was conducted face-to-face and by a single researcher helped to ensure consistency in questions and answers. On the other hand, the most important limitation in our study is that the information is based on the statements of the parents and the application of the scale in a period when the parents are excited and hectic after birth may have affected the answers given.

In our study, no relationship was found between mothers' and fathers' "adult's perception level of breast milk scale" and the infants' feeding with EBF in the first 6 months. Mothers' perception levels of BM are higher than fathers, and the most important factors affecting the perception level of mothers are the state of BM education and the last delivery type. Scale score mean was found to be higher in mothers who received breastfeeding training and performed their last birth as normal delivery. On the contrary, in fathers, the mean scale score of fathers whose spouses gave their last birth as normal delivery was found to be lower. Factors that have a positive effect on EBF in the first 6 months are that babies do not use a pacifier/bottle and, in multipara mothers, the previous child was breastfed for ≥6 months.

Making deliveries as normal as possible, giving mothers and fathers standard breastfeeding training, and avoiding the use of pacifiers/bottles will help increase our EBF rates.

Ethical Committee Approval: Approval was obtained from the ethics committee of Cumhuriyet University Faculty of Medicine (dated 28.06.2018 and numbered 2018-06/22).

Informed Consent: A written informed consent form was obtained from parents who agreed to participate in the study.

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