# **Original Article**

# Factors Affecting Breastfeeding within the First Hour After Birth

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Background: Every baby should start life with breastfeeding. However, some obstacles prevent babies from enjoying this right. Aim: This study aimed to determine the factors affecting breastfeeding within the first hour after birth. Patients and Methods: This study employed a comparison design. This was a comparative study of women who breastfeed their babies within 1 h of birth and those who did not. The research population consisted of 368 mothers who had babies aged 6-24 months. A semi-structured questionnaire, which consisted of 32 open- and closed-ended questions, was used to collect data. The number and proportions were used for the descriptive statistics, and Chi-square tests were used to compare data between groups. The level of statistical significance was accepted as P < 0.05. Results: Of the 368 participants, 50.8% breastfed their babies within the first hour after birth, 49.2% did not breastfeed within the first hour, 51.6% exclusively breastfed in the first 6 months, 48.4% did not breastfeed exclusively in the first 6 months. Moreover, results revealed that a high-risk pregnancy status, mode of delivery, prelacteal food, and the mother's role in making decisions about baby feeding affects breastfeeding practices within the first hour after birth. Conclusions: Initiatives should be increased to start breastfeeding within the first hour after birth in women who have high-risk pregnancy and those giving birth by cesarean section. Breast milk should be the baby's first food, and mothers should be the primary decision-makers in baby's nutrition.

**KEYWORDS:** Breastfeeding, first hour after birth, newborn, postpartum period

#### Introduction

The World Health Organization (WHO), American Academy of Pediatrics (AAP), and United Nations Children's Fund (UNİCEF) recommend breastfeeding as one of the most important strategies in reducing child mortality. This recommendation requires the initiation of breastfeeding for healthy generations, exclusive breastfeeding for the first 6 months, and continued breastfeeding until age 2 years. Provide source of data present that 11.6% of deaths of children under age 5 years worldwide are caused by insufficient breastfeeding practices. Although WHO aims to increase the rate of exclusive breastfeeding by 50% worldwide by 2025, the rate of exclusive breastfeeding is low in every region. [1-3]

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In Turkey, in 1991, the health of infants fed with breast milk guides the development of significant steps by the Republic of Turkey Ministry of Health to support and encourage breastfeeding. In this context, the importance of breastfeeding is explained to the pregnant women, and the baby is breastfed within 1 h after birth. [4] However, despite these efforts, the desired breastfeeding rates could not be reached. According to the 2008 Turkey Demographic and Health Survey data, only 42% of infants were breastfed within the first 6 months of life,

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and the rates by 2013 and 2018 were 30% and 41%, respectively.<sup>[5]</sup> Nevertheless, exclusive feeding with breast milk can meet all the nutritional needs of babies for the first 6 months.<sup>[6]</sup>

Since 2016, 98% of babies in Turkey are breastfed, of which 71% of the babies were breastfed within the first hour after birth and 86% were breastfed within the first day after birth.<sup>[5]</sup> Breastfeeding in Turkey is quite a common practice. However, for many reasons, the habit of breastfeeding within the first hour of birth is not sufficient, and families start complementary feeding early. Initiation of breastfeeding and skin contact between the mother and her baby for 1 h, which is defined as postpartum golden hour, especially within the first 20 min, affects many important issues such as the mother and baby relationship,[7] positive birth experience, [8] baby's personality traits, and substance addiction.[9] Based on this information, it is important to begin correct in order to continue breastfeeding in line with the recommendations, and it is thought that breastfeeding should be started within the first hour after birth. There are many resources in the literature about breastfeeding, but due to the limited number of studies on breastfeeding in the first hour, this study was conducted to determine the factors affecting breastfeeding in the first hour.

## MATERIALS AND METHODS

This study employed comparison design. This is a comparative study of women who breastfeed their babies within 1 h of birth and those who did not. The study was carried out in a family health center in Konya, with varying socioeconomic, educational, and cultural levels. The research population was composed of mothers with babies aged 6-24 months. The inclusion criteria of the study were as follows: aged >18 years, having a baby aged 6-24 months, ability to read and write in Turkish, and volunteered to participate in the study. The exclusion criteria of the study were mothers who had breastfeeding disabilities due to a congenital anomaly. Considering the rate of exclusive breastfeeding (41%), type I error of 0.05, and type II error of 0.20, at least 306 individuals should be enrolled based on the calculation made with 80% power and 0.20 effect size in the G \* POWER 3.1.9.4 statistical program. 368 people were included in the study with 20% more than the calculated sample. Participants were divided into two groups according to their breastfeeding status within the first hour after birth. Mothers who could not breastfeed their babies within the first hour after birth were included in the non-breastfeeding group, and those who breastfeed within the first hour after birth were included in the breastfeeding group. No intervention was applied to the groups. Only semi-structured questionnaire was applied.

A self-developed semi-structured questionnaire, which consisted of 32 open- and closed-ended questions, was used for the data collection. The first part of the questionnaire solicit for the mothers' age, educational status, economic status, child parity, want pregnancy, and sociodemographic status, and the second part contained items asking for starting breastfeeding within the first hour after birth and feeding exclusively with breast milk within the first 6 months.

Data were collected in family health centers between December 2019 and April 2020 through face-to-face interview. The coding and evaluation of data were carried out in SPSS version 20.0 package program (IBM Corp., Armonk, New York). For the statistical analysis, number and proportions were used for the descriptive statistics, and Chi-square tests were used to compare the proportions between groups and the independent samples t test were used to compare means in normal distributed parametric data. Pearson Chi-square test was used for observations >25, Yates corrective Chi-square for observations <25, and Fisher's exact tests were used when the expected frequency value was <5. The statistical significance level was accepted at P < 0.05.

The study was approved by the Ethics Committee of Karatay University (no. 2019/0022, dated 30.09.2019) and our work has been carried out in accordance with Helsinki Declaration. Written permission was also obtained from Konya Provincial Health Directorate (no. 86737044-806.01.03, dated 18.11.2019). Permission was also obtained from the Family Health Center where the study was carried out. The aim of the study was explained to the mothers before the data were collected. "Informed consent" was signed by the mothers. Freedom to participate in and withdraw from the study has been reported.

In this study, mothers' age, education, occupation, income status, family type, duration of marriage, working status, age of being a first-time mother, child parity, decision to start breastfeeding within the first hour after birth, social support after birth, planning of pregnancy, mode of delivery, and having a high-risk pregnancy were independent variables. The breastfeeding status within the first hour after birth was the dependent variable.

#### RESULTS

A total of 368 mothers participated in the study. Of these mothers, 50.8% breastfed their babies within the first hour after birth, 49.2% did not breastfeed within

Table 1: Comparison of Groups According to Sociodemographic Variables (n=368)						
Characteristics	Overall (n = 368)	Non-breastfeeding group $(n = 181)$	Breastfeeding group $(n = 187)$	P		
		n (%)	n (%)			
Mother's age (years) $(x \pm SS)$	$28.60 \pm 5.43$	$28.07 \pm 5.22$	$29.12 \pm 5.60$	0.062		
Mother's education level						
Primary	152 (41.3)	73 (40.3)	79 (42.2)	0.147		
High school	94 (25.5)	40 (22.1)	54 (28.9)			
University	122 (33.2)	68 (37.6)	54 (28.9)			
Mother's occupation						
Employed	65 (17.7)	34 (18.8)	31 (16.6)	0.579		
Not employed	303 (82.3)	147 (81.2)	156 (83.4)			
Income perception						
Income = expense	234 (63.6)	116 (64.1)	118 (63.1)	0.975		
Expenses > income	79 (21.5)	38 (21.0)	41 (21.9)			
Income > expenses	55 (14.9)	27 (14.9)	28 (15.0)			
Smoking						
Smoker	48 (13.0)	27 (14.9)	21 (11.2)	0.371		
Nonsmoker	320 (87.0)	154 (85.1)	166 (88.8)			
Education level of the spouse						
Primary	148 (40.2)	65 (35.9)	83 (44.4)	0.086		
High school	84 (22.8)	39 (21.5)	45 (24.1)			
University	136 (37.0)	77 (42.5)	59 (31.6)			
Spouse's employment status						
Employed	348 (94.6)	169 (93.4)	179 (95.7)	0.444		
Not employed	20 (5.4)	12 (6.6)	8 (4.3)			

Table 2: Comparison of Groups According to Obstetric Variables					
Characteristics	Overall (n=368)	Non-breastfeeding group (n=181)	Breastfeeding group ( <i>n</i> =187)	P	
		(%)	(%)		
Child parity					
1	153 (41.6)	84 (46.4)	69 (36.9)	0.064	
2 +	215 (58.4)	97 (53.6)	118 (63.1)		
Sex of the infant					
Female	174 (47.3)	85 (47.0)	89 (47.6)	0.903	
Male	194 (52.7)	96 (53.0)	98 (52.4)		
Desired sex of the baby					
Yes	350 (95.1)	169 (93.4)	181 (96.8)	0.201	
No	18 (4.9)	12 (6.6)	6 (3.2)		
High-risk pregnancy					
Yes	76 (20.7)	49 (27.1)	27 (14.4)	0.003	
No	292 (79.3)	132 (72.9)	160 (85.6)		
Social support in the postpartun	n period				
Yes	226 (61.4)	112 (61.9)	114 (61.0)	0.857	
No	142 (38.6)	69 (38.1)	73 (39.0)		
Regular checkups during pregna	ancy				
Yes	346 (94.0)	172 (95.0)	174 (93.0)	0.561	
No	22 (6.0)	9 (5.0)	13 (7.0)		
Planned pregnancy					
Yes	263 (71.5)	126 (69.6)	137 (73.3)	0.438	
No	105 (28.5)	55 (30.4)	50 (26.7)		
Delivery mode					
Vaginal delivery	192 (52.2)	63 (34.8)	129 (69.0)	0.001	
Cesarean section	176 (47.8)	118 (65.2)	58 (31.0)		

Table 3: Comparison of the Groups According to the Variables Related to Breastfeeding						
Characteristics	Overall	Non-breastfeeding group n (%)	Breastfeeding group n (%)	P		
Primary decision-maker in baby nutrition						
Mother	317 (86.1)	148 (81.8)	169 (90.4)	0.028		
Father	17 (4.6)	13 (7.2)	4 (2.1)			
Other people	34 (9.2)	20 (11.0)	14 (7.5)			
Breastfeeding education						
Yes	210 (57.1)	99 (54.7)	111 (59.4)	0.366		
No	158 (42.9)	82 (45.3)	76 (40.6)			
First food given to the baby						
Breast milk	332 (90.2)	150 (82.9)	182 (97.3)	0.001		
Formula and/or water	36 (9.8)	31 (17.1)	5 (2.7)			
Time to stop breastfeeding by sex						
Girls should be breastfed longer	19 (5.2)	14 (7.7)	5 (2.7)	0.090		
Boys should be breastfed longer	27 (7.3)	13 (7.2)	14 (7.5)			
Both sexes should be breastfed equally	322 (87.5)	154 (85.1)	168 (89.8)			
Believing that formula is equivalent to						
breast milk						
Yes	23 (6.3)	12 (6.6)	11 (5.9)	0.936		
No	345 (93.8)	169 (93.4)	176 (94.1)			
Breastfeeding time only						
<1 month	40 (10.9)	19 (10.5)	21 (11.2)	0.821		
2-3 months	60 (16.3)	28 (15.5)	32 (17.1)			
4-5 months	78 (21.2)	36 (19.9)	42 (22.5)			
6 months	190 (51.6)	98 (54.1)	92 (49.2)			
Reason why you cannot only breastfeed with	hin the first 6 mont	hs <sup>a</sup>				
Baby no longer likes breast milk ( <i>n</i> =83)	37 (10.1)	18 (9.9)	19 (10.2)	0.613		
Milk was insufficient	106 (28.8)	51 (28.2)	55 (29.4)	0.568		
Mother started working	5 (1.4)	3 (1.7)	2 (1.1)	0.530***		
Baby became ill	4 (1.1)	2 (1.1)	2 (1.1)	0.631***		
Mother became ill	6 (1.6)	4 (2.2)	2 (1.1)	0.387***		
Social environment recommended	20 (5.4)	9 (5.0)	11 (5.9)	0.630		
Concern that breastfeeding may alter	40 (10.9)	24 (13.3)	16 (8.6)	0.147		
body structure	` ′		, ,			

a: Participants have given more than one answer to this question

Table 4: Reasons for Not Breastfeeding Within the First Hour After Birth

Characteristics	Non-breastfeeding group (n=181	
	n (%)	
Baby cannot suck effectively		
Yes	28 (15.5)	
No	153 (84.5)	
Not secretion breast milk		
Yes	54 (29.8)	
No	127 (70.2)	
Mother had pain		
Yes	63 (34.8)	
No	118 (65.2)	
Intervention to the baby		
Yes	37 (20.4)	
No	144 (79.6)	

the first hour, 51.6% exclusively breastfed in the first 6 months, 48.4% did not breastfeed exclusively in the

first 6 months. The participants were divided into two groups according to their breastfeeding status within the first hour after birth. In this study, 181 (49.2%) mothers comprised the non-breastfeeding group, and 187 (50.8%) mothers comprised the breastfeeding group.

Comparison of the two groups in terms of sociodemographic and independent variables is shown in Table 1. The mean age of the participants was  $28.60 \pm 5.43$  years (non-breastfeeding group,  $28.07 \pm 5.22$  years; breastfeeding group,  $29.12 \pm 5.60$  years), and no statistically significant difference was found between the mean age of the groups (P = 0.06).

In the non-breastfeeding group, 40.3% were primary school graduates, 81.2% were not working, 64.1% have equal income and expenses, and 85.1% were nonsmokers. The mean age of their spouses was

 $31.32 \pm 5.25$ , 42.5% had a university or higher education level, and 93.4% were employed [Table 1].

In the breastfeeding group, 42.2% were primary school graduates, 83.4% were unemployed, and 63.1% have equal income and expenses. The mean age of their spouses was  $32.32 \pm 5.47$ , 44.4% were primary school graduates, and 95.7% were employed [Table 1].

There was no significant difference among the breastfeeding and non-breastfeeding group regarding the age (P=0.062), education level (P=0.147), working status (P=0.579), income perception (P=0.975), smoking status (P=0.371), education level of the spouse (P=0.086), and working status of the spouse (P=0.444) [Table 1] about, 14.4% and 27.1% of the breastfeeding and non-breastfeeding mothers, respectively, had a high-risk pregnancy, and the difference between the groups was statistically significant [Table 2]. Moreover, 69% of the breastfeeding mothers and 34.8% of the non-breastfeeding mothers had vaginal delivery, and there was a difference between groups, but it was not statistically significant [Table 2].

There was significant difference among the breastfeeding and non-breastfeeding group regarding the obstetric characteristics such as child parity (P = 0.064), infant sex (P = 0.903), regular prenatal visits (P = 0.561), desired sex of the baby (P = 0.201), planning a pregnancy (P = 0.438) and support in the postnatal period (P = 0.857) [Table 2].

Moreover, 90.4% and 81.8% of the breastfeeding and non-breastfeeding mothers decided on the feeding method themselves, and a difference was noted between groups (P = 0.028). Breastfeeding mothers decided on the feeding method of their baby at a higher rate and shown the statistical significance [Table 3].

Overall, 90.2% of the mothers gave breast milk to their babies as the first food. Prelacteal feeding has not been initiated. Specifically, 97.3% and 82.9% of breastfeeding and non-breastfeeding mothers gave breast milk as the first food, and a difference was found between groups (P = 0.0001) Although 82.9% of the mothers could not breastfeed their babies within the first hour after birth, they did not give any food to the baby other than breast milk. Mathers waited for over an hour to breastfeed their babies [Table 3].

No difference was observed between the groups in terms of the breastfeeding training status of the mothers (P = 0.366), time to terminate breastfeeding by sex (P = 0.090), thinking that formula is equivalent to breast milk (P = 0.936), and duration exclusive breastfeeding (P = 0.821). With regard to the reasons for

not giving breast milk, no difference was noted between the groups. However, 13.3% of the non-breastfeeding mothers and 8.6% breastfeeding mothers feared that breastfeeding could alter their body structure, and there was a difference between them, but it was not statistically significant [Table 3].

In total, 181 mothers reported that they could not breastfeed their baby within the first hour after birth due to various reasons. Specifically, 15.5% babies refused to breastfeed, 29.8% did not have milk, 34.8% experienced pain, and 20.4% required medical intervention that prohibited breastfeeding [Table 4].

#### **DISCUSSION**

Breast milk is a natural food with high bioavailability, containing all the nutrients necessary for optimum growth and development in the newborn. [1] Starting breastfeeding after birth has many benefits for both the baby and the mother, especially nutrition, health, immunity, developmental, psychological and social aspects. Therefore, it is important to start breastfeeding within the first hour.

The time to start breastfeeding can draw a line between life and death. Starting breastfeeding early, that is, within the first hour of life, protects babies from dying in the most vulnerable period of their lives.[10] New evidence suggests that the risk of dying within the first 28 days of life is 41% higher in babies who started to breastfeed within 2-23 h after birth than in babies who were breastfed within an hour of their life. Starting breastfeeding early increases the child's chance of survival.[3] A study conducted in Turkey, the baby started breastfeeding within the first hour after birth, but it was reported that most of the problems were in maintaining breastfeeding.[11] In a study conducted in Ethiopia, the proportion of mothers who breastfed within the first hour was low. Early initiation of breastfeeding was higher in mothers between the ages of 30-34 years and multiparous mothers.[12] Another study found that mothers started breastfeeding at a high rate in the first hour.[13] Similar to previous studies, about half of the mothers included in the study started breastfeeding within the first hour.

Mothers who had a high-risk pregnancy tended to breastfeed their babies later. However, Carberry *et al.*<sup>[10]</sup> (2013) stated that a high-risk pregnancy does not affect breastfeeding within the first hour after birth. The differences in research results were attributed to the risk status of the pregnancy and the interventions applied.

In the present study, most of the mothers who had vaginal delivery breastfed their babies within the first hour after birth and gave only breast milk to their babies within the first 6 months. In some studies, similar to our study, it was found that cesarean delivery negatively affected breastfeeding in the first hour.[10,13-15] A study found that breastfeeding rates were significantly higher in women who had vaginal delivery and who breastfed their babies within the first hour after birth.[16] This was in contrast with report of another study of no significant relationship found between the mode of delivery and breastfeeding within the first hour after birth.[17] However, the fourth step in WHO's 10 steps to successful breastfeeding recommended providing support to mothers to start breastfeeding as soon as possible after birth.[1] With the delay in starting breastfeeding by mothers who gave birth by cesarean section, special focus should be given to providing additional support to these mothers, to reach a higher rate of breastfeeding within the first hour after birth.[16]

In this study, most of the mothers who breastfed their babies in the first hour after birth or could not breastfeed were the main decision-makers of the baby's feeding method. Mothers who decided on the feeding method of their babies are more likely to breastfeed within the first hour after birth and exclusively breastfeed their babies for the first 6 months. The role of mothers in making decisions about infant feeding is an effective factor in giving only breast milk for the first 6 months. According to Bhanderi *et al.*<sup>[18]</sup> mothers who are primary decision-makers in infant nutrition are very likely to exclusively breastfeed within the first 6 months. The result of the present study suggests that nurses/midwives can have an important influence on this decision, and in this context, breastfeeding counseling is important.

Prelacteal food is not a recommended practice. However, according to Turkey Demographic and Health Survey 2018 data, it is a common practice in central Anatolia, where our data are collected. In this study, mothers in both groups started prelacteal feeding in the first hour after birth, although at low rates, mothers who breastfed their babies in the first hour, fed prelacteal at a lower rate. Mothers who tend to breastfeed within the first hour after birth showed appropriate practices and attitude to give breast milk in the first feeding. In some studies, mothers stated that milk release did not start within the first hour or days after birth, and they had to wait to feed their babies and therefore had to give formula milk or other foods.[13,19,20] Planning of feeding methods is started during antenatal care visits and family support, coping with nipple retraction, techniques to increase breast milk, expressing and preserving breast milk, etc. trainings on such subjects are starting.

When we look at, the reasons why mothers could not breastfeed their babies in the first hour, probably suggests the responses of the baby not wanting to breastfeed, insufficient milk amount, the mother's birthplace pain, and the baby's medical intervention were declared. In other studies, some mothers stated that although they wanted to breastfeed, milk release did not start within the first hour or days after birth; thus, rather than waiting to breastfeed their babies, they had to give formula milk or other foods.[19,20] According to Carberry et al.[10] every hour that passes after birth before breastfeeding increases the risk of subsequent breastfeeding difficulties. Therefore, for first-time mothers and mothers who delivered by cesarean section, breastfeeding is recommended within the first hour after birth to prevent breastfeeding problems. The main limitation of this study is that mothers remembered their past experiences and answered the questions. For future studies, we recommend planned follow-up studies starting from pregnancy and continuing after birth.

#### Conclusions

In conclusion, baby's refusal to breastfeed, absence of breast milk, mother's birthplace pain, and medical interventions prohibiting breastfeeding were identified as reasons that prevented breastfeeding in the first hour after birth. Breastfeeding within the first hour after birth affects subsequent breastfeeding behaviors. More research is needed to increase breastfeeding rates within the first hour after birth, and we believe our future research will focus on these issues. In addition, studies of nurses and midwives on breastfeeding within the first hour after birth should be supported more. Because they are occupational groups that are close to mothers and babies and spend a long time.

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#### Conflicts of interest

There are no conflicts of interest.

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