



# Breastfeeding During Pregnancy: Opinions and Behaviors of Mothers

## Gebelikte Emzirme: Annelerin Düşünce ve Davranışları

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### ABSTRACT

**Objective:** This study was performed to determine opinions and behaviors of mothers about maintenance of breastfeeding during pregnancy.

**Methods:** The research was descriptive and the data were collected between March 2019 and December 2019. Data were collected by using a questionnaire at face-to-face interviews. A total of 358 mothers just giving birth at an obstetrics hospital in İstanbul and fulfilling the inclusion criteria were included in the study. Obtained data were analyzed with descriptive statistics and chi-square test.

**Results:** Of all the mothers included in the study, 74.6% reported that women becoming pregnant during lactation should not breastfeed their babies. Thirty-two percent of the mothers with a history of multiparity had the experience of becoming pregnant during lactation and 49% of them reported that they immediately stopped breastfeeding and the rest maintained breastfeeding their babies for a short time. Twenty-one-point-four percent of the mothers said that they weaned their previous baby because they were pregnant, wanted to get pregnant again, or thought they were pregnant.

**Conclusion:** The mothers believed that women becoming pregnant during lactation should not continue to breastfeed their babies. Besides, the mothers having the experience of pregnancy during lactation were found to stop breastfeeding immediately or short time after they learned about their pregnancy.

**Keywords:** Mothers' health, infants' health, breastfeeding, pregnancy, tandem breastfeeding

### ÖZ

**Amaç:** Bu araştırma, annelerin gebelikte emzirmenin sürdürülmesine ilişkin görüş ve davranışlarını belirlemek amacıyla yapılmıştır.

**Yöntemler:** Araştırma tanımlayıcı tipte olup, veriler Mart 2019-Aralık 2019 tarihleri arasında toplanmıştır. Veriler, yüz yüze görüşme yöntemiyle anket kullanılarak toplanmıştır. İstanbul'da bir doğum hastanesinde yeni doğum yapan ve dahil edilme kriterlerini karşılayan toplam 358 anne çalışmaya dahil edilmiştir. Elde edilen veriler tanımlayıcı istatistikler ve ki-kare testi ile analiz edilmiştir.

**Bulgular:** Araştırmaya katılan annelerin %74,6'sı emzirme döneminde gebe kalan kadınların bebeklerini emzirmemeleri gerektiğini bildirmiştir. Multiparite öyküsü olan annelerin %32'si emzirme döneminde gebe kalma deneyimi yaşamış, %49'u emzirmeyi hemen bıraktığını, geri kalanlar bebeklerini kısa bir süre daha emzirmeye devam ettiklerini bildirmiştir. Annelerin %21,4'ü önceki bebeklerini hamile kaldıkları için, tekrar hamile kalmak istedikleri için veya hamile olduklarını düşündükleri için süten kestiklerini belirtmişlerdir.

**Sonuç:** Anneler, emzirme döneminde hamile kalan kadınların bebeklerini emzirmeye devam etmemeleri gerektiğine inanıyordu. Ayrıca emzirme döneminde gebelik deneyimi yaşayan annelerin gebeliklerini öğrendikten hemen sonra veya kısa bir süre sonra emzirmeyi bıraktıkları saptanmıştır.

**Anahtar Kelimeler:** Anne sağlığı, bebek sağlığı, emzirme, gebelik, tandem emzirme

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Received: 07.07.2023  
Accepted: 06.09.2024  
Published date: 27.01.2025

**Cite this article as:** Doğanç Karaman P, Özsoy S. Breastfeeding during pregnancy: opinions and behaviors of mothers. Bezmialem Science. 2025;13(1):25-34



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## Introduction

It is known that breastfeeding should be started in the first half an hour after birth and that babies should be offered exclusive breastfeeding in the first six months of their lives and breastfed in addition to appropriate complimentary food until two years of age or longer (1,2). However, according to a report by the World Health Organization and the UNICEF (2018), only 41% of the babies younger than 6 months are exclusively breastfed and only 45% of the babies are breastfed till the age of two years in the world (3). In Türkiye, only 41% of the babies are exclusively breastfed for the first five months of their life and only 34% of the babies are breastfed for two years (4). The above mentioned evidence shows that babies both in Türkiye and the rest of the world are weaned and fed with additional food earlier than expected (3,4).

Many factors affect initiation of feeding with additional food and/or weaning babies (5-11). One of the factors causing early weaning is that 1.3-55.7% of the mothers become pregnant during their lactation period (7,8,12). This causes mothers to wean their babies earlier and breastfeed them for shorter than two years. There have not been any studies on the opinions of mothers about how to behave regarding maintenance of breastfeeding if they become pregnant during the lactation period. Knowing opinions and tendencies of mothers about this issue can guide prenatal education for pregnant women. Mothers who become pregnant while breastfeeding want to have information about whether they will continue to breastfeed during pregnancy when they expect a new baby. The results of this study contain important information for educating the mother and other family members in such a situation. The present study was performed to determine opinions and behaviors of the mothers about maintenance of breastfeeding if they became pregnant during lactation. To achieve this aim, answers to the following questions were sought:

1. What do the mothers think about maintenance of breastfeeding if they become pregnant during lactation?
2. How did the mothers who became pregnant during lactation in the past behave regarding maintenance of breastfeeding?

## Methods

### Study Population and Sample

This descriptive study was carried out in a state obstetrics and gynecology hospital in Istanbul. The study population comprised 4441 women giving birth in this hospital in 2017. The sample calculation method, whose universe is known, was used to determine the number of samples ( $n = N \cdot t^2 \cdot pq / y^2 \cdot (N-1) + t^2 \cdot pq$ ). The sample size was calculated at minimum 354. Inclusion criteria were the age of 18 years or older, understanding and speaking Turkish, experiencing pregnancy ending in the 37<sup>th</sup>-41<sup>st</sup> gestational weeks, giving birth to a healthy, living singleton, staying with the baby in the same room since giving birth, not having a mental disease or a medical condition likely to prevent breastfeeding and voluntarily accepting to participate in the

study. The sample included 358 mothers fulfilling the inclusion criteria.

### Data Collection

Data were collected at face to face interviews with a questionnaire created by the researchers. Until the calculated sample size was obtained, the researchers visited the hospital and met the women giving birth every day between 1 March 2019 and 27 December 2019. Informed consent was obtained from the mothers meeting the inclusion criteria and accepting to participate in the study.

### Statistical Analysis

Data analysis was performed by using Statistical Package for Social Sciences 20.0 for Windows. Descriptive statistics like frequencies and percentages and chi-square test were utilized for the analysis. Obtained results were evaluated at the confidence interval of 95% and the significance level of  $p < 0.05$ .

### Ethical Approval

The ethical review of study was approved by the University of Health Sciences Türkiye, Istanbul Training and Research Hospital Ethic Committees (number: E.4117, date: 25.12.2018) and from the relevant health institution (number: 16867222-604.01.01, date: 12.03.2019).

## Results

The mean age of the mothers was  $29.39 \pm 5.79$  years [minimum (min):18 years; maximum (max):45 years]. Of all the mothers, 30.2% were primary school graduates, 81.8% were housewives and 69.8% had a nuclear family. Concerning obstetric features, the number of pregnancies ranged from one to eight, 25.4% of the mothers were primiparous (min:1 birth and max:6 births) and 34.6% had two live children. Seventy-eight-point-eight percent of the mothers reported that babies should be exclusively breastfed for the first six months of their lives ( $\bar{x} = 177.68 \pm 54.37$  days) and 69.6% of the mothers reported that babies should be breastfed until they were two years old (Table 1).

When 266 mothers with more than one living baby were asked about the age of their prior baby, one of every five mothers (17.7%) reported that their prior baby was younger than 24 months (min=11 months; max=24 months). Forty-one-point-four percent of the mothers exclusively breastfed their prior baby for six months without giving water or additional food and 32.3% of the mothers breastfed their baby for over 24 months (max=60 months). When the mothers were asked about the reasons for weaning their prior baby, the mothers reported that their babies were old enough for weaning (28.2%) and gave up mother's milk (16.9%). They also said that they became pregnant/suspected of becoming pregnant or wanted to become pregnant (21.4%) and mother's milk was insufficient (15%) (Table 2).

Regarding whether to maintain or cease breastfeeding during pregnancy, 74.6% of the mothers said that women becoming pregnant during lactation had to wean their baby (Table 3). Ninety-one mothers (25.4%) reported that breastfeeding could be maintained for 1-8 months during pregnancy, until health

**Table 1. Sociodemographic, obstetric and breastfeeding features of the mothers (n=358)**

Features of the mothers	n	%
<b>Age (years)<sup>a</sup></b>		
18-25	102	28.5
26-35	193	53.9
36-45	63	17.6
<b>Education</b>		
Literate/illiterate	65	18.2
Primary school	108	30.2
Secondary school	77	21.5
High school	66	18.4
University	42	11.7
<b>The place the longest time spent in till the age of 15 years</b>		
Village	82	22.9
Town	39	10.9
City	212	59.2
Foreign country	25	7.0
<b>Paid employment</b>		
Yes	65	18.2
No	293	81.8
<b>Type of family</b>		
Nuclear family	250	69.8
Extended family	108	30.2
<b>Number of pregnancies</b>		
1	77	21.5
2	95	26.5
3	89	24.9
4-8	97	27.1
<b>Number of childbirths</b>		
1	91	25.4
2	126	35.2
3	84	23.5
4-6	57	15.9
<b>Number of live children</b>		
1	92	25.7
2	124	34.6
3	84	23.5
4-6	58	16.2
<b>How long a baby must be exclusively breastfed (months)<sup>b</sup></b>		
0-5	53	14.8
6	282	78.8
7-24	23	6.4
<b>How long a baby must be breastfed (months)<sup>c</sup></b>		
6	3	0.8
7-23	72	20.1
24	249	69.6
25-48	34	9.5

<sup>a</sup>The mean age of the mothers was 29.39±5.79 years. <sup>b</sup>The mothers reported that babies should be exclusively breastfed for a mean of 177.68±54.37 days. <sup>c</sup>The mothers reported that babies should be breastfed for a mean of 23.01±5.89 months

**Table 2. Age and breastfeeding features of prior children (n=266)**

Age and breastfeeding of prior children	n	%
<b>Age (months)<sup>a</sup></b>		
≤24	47	17.7
25-36	56	21.1
37-48	36	13.5
49-60	39	14.7
61-216	88	33.0
<b>Duration of exclusive breastfeeding (months)<sup>b</sup></b>		
0	37	13.9
1	17	6.4
2	16	6.0
3	20	7.5
4	23	8.6
5	26	9.8
6	110	41.4
7-8	12	4.5
9-11	5	1.9
<b>Duration of breastfeeding (months)<sup>c</sup></b>		
0-6	50	18.8
7-12	35	13.2
13-18	74	27.8
19-23	21	7.9
24-60	86	32.3
<b>Reasons for weaning<sup>d</sup></b>		
The baby was old enough to be weaned	75	28.2
I became pregnant, wanted to become pregnant and thought I was pregnant <sup>e</sup>	57	21.4
The baby stopped breastfeeding	45	16.9
The mother's milk was insufficient	40	15.0
The mother had a health problem (illness, receiving medications, weakness and fatigue)	19	7.1
A health professional recommended weaning	14	5.2
The baby had a health problem (illness and surgery etc.)	14	5.2
The baby did not eat and gain weight	11	4.1
The mother returned to work	9	3.3
The mother had a problem with her breasts/nipples	9	3.3
The mother wanted to stop breastfeeding	8	3.0
The baby was given formula at hospital	6	2.2
The baby wanted to be breastfed frequently	6	2.2
Social/religious factors	5	1.8
The mother thought her milk changed and became useless	3	1.1
The mother gave birth	1	0.3

Findings presented in this table reflect responses of the mothers with more than one live child.

<sup>a</sup>The mean age of the prior baby was  $\bar{x}$ =57.72±38.39 months. <sup>b</sup>The mean duration of exclusive breastfeeding for the prior baby was 127.43±73.47 days. <sup>c</sup>The mean duration of breastfeeding for the prior baby was 17.14±9.23 months. <sup>d</sup>Some of the mothers mentioned more than one reason and the percentages are based on the total number of the responses. <sup>e</sup>The answers "I became pregnant" (n=53), "I wanted to become pregnant" (n=2) and "I thought I was pregnant" (n=2) were included

**Table 3.** Opinions of the mothers about maintenance of breastfeeding during pregnancy (n=358)

Opinions of the mothers	n	%
<b>Do you think a woman becoming pregnant during lactation can continue to breastfeed their babies?</b>		
No	267	74.6
Yes	91	25.4
<b>How long do you think breastfeeding can be maintained during pregnancy? (n=91)</b>		
For some time after learning about pregnancy (minimum: 1 month; maximum: 8 months)	33	36.3
Until the baby is six months old	16	17.5
Until delivery of the baby	15	16.5
Until a health professional recommends stopping breastfeeding	9	9.9
Until the baby stops breastfeeding	7	7.7
Other <sup>a</sup>	3	3.3
Until the baby is 4-5, 12 or 24 months <sup>b</sup>	8	8.8
<b>Do you think maintenance of breastfeeding harms the mother, fetus and the baby breastfed?</b>		
No	62	17.3
Yes	296	82.6
<b>Does breastfeeding during pregnancy harm the mother? (n=296)<sup>†</sup></b>		
No	216	73.0
Yes	80	27.0
<b>What are the harms of breastfeeding during pregnancy in the mother? (n=80)</b>		
The mother's health is affected	63	78.8
Abortion/preterm delivery occurs	11	13.8
Religious reasons	1	1.3
Other <sup>§</sup>	5	6.3
<b>Does breastfeeding during pregnancy harm the fetus? (n=296)<sup>†</sup></b>		
No	131	44.3
Yes	165	55.7
<b>What are the harms of breastfeeding during pregnancy in the fetus? (n=165)</b>		
The fetus' health is affected	137	83.0
Abortion/preterm delivery	13	7.9
Religious reasons	7	4.2
Other	8	4.8
<b>Does breastfeeding during pregnancy harm the baby breastfed? (n=296)<sup>†</sup></b>		
No	49	16.6
Yes	247	83.4
<b>What are the harms of breastfeeding during pregnancy in the baby breastfed? (n=247)</b>		
The baby's health is affected	134	54.3
The content of the mother's milk is affected. The mother's milk is not beneficial	91	36.8
Religious reasons	15	6.1
Other <sup>c</sup>	7	2.8
<b>Do you think a mother can breastfeed both their newborn and the prior baby?</b>		
No	282	78.8
Yes	76	21.2
<b>If you become pregnant during lactation, do you want to continue breastfeeding your baby?</b>		
Yes	123	34.4
No	235	65.6
<b>Do you continue to breastfeed your baby you have breastfed during your pregnancy together with your newborn? (n=90)<sup>d</sup></b>		
Yes	5	5.6
No	85	94.4

<sup>a</sup>The answers "Until the mother feel uncomfortable" (n=1), "as long as the mother can hold her baby" (n=1) and "until the content of mother's milk changes" (n=1) were included. <sup>b</sup>The mothers reporting that breastfeeding can be breastfed until the baby is 4-5 months old (n=3), 12 months old (n=3) and 24 months old (n=2) were included in this group. <sup>c</sup>The answers "I don't know why but I think it will give harm" (n=1), "I've heard from the gynecologist that the baby can have diarrhea" (n=1), "If the baby is not weaned earlier, he/she mu become jealous of the newborn" (n=1), "The medications used by the mother can be transmitted to the baby through the mother's milk and can harm it" (n=1), "Hormonal changes give harm" (n=1), "The doctor said the baby will become ill" (n=1) and "There won't be sufficient milk left for the newborn" (n=1) were included in this group. <sup>d</sup>The answers given to this question by 90 mothers recently becoming pregnant during lactation were included

professionals told the woman to stop it, until the baby quited it or reaches a certain age, until the woman gives birth or after giving birth. Concerning the reasons for maintenance of breastfeeding, the mothers noted that the baby was too young for weaning, had the right to receive mother's milk and needed to grow up and develop.

Two-hundred and six mothers (82.6%), reported that maintenance of breastfeeding during pregnancy would definitely harm the mother, the fetus or the baby breastfed. Ninety-one mothers said (36.8%) that the amount, composition, content and taste of mother's milk would change, and that mother's milk would be less beneficial for the baby, would even be harmful or poison the baby. Seventy-eight-point-eight percent of the mothers reported that tandem breastfeeding was not right (breastfeeding the newborn and the prior baby together), which would cause mother's milk to be insufficient, would be difficult for both the mother and her babies, and that the newborn would need mother's milk more. They also said that the baby already weaned during pregnancy would not want mother's milk and that the difference between the ages of the babies would create problems. Seventy-six mothers (21.2%) in favor of tandem breastfeeding reported that if mother's milk was sufficient, the babies could be breastfed together since they were siblings and so that they should not become jealous of each other.

More than half of the mothers (65.6%) reported that they would not continue to breastfeed their prior baby if they became pregnant since their milk would poison their baby, become harmful to it, change and become useless. They also said that maintenance of breastfeeding would affect their pregnancy and the fetal growth and was not right in terms of their religious beliefs (Table 3). Only education had a significant effect on the opinions of the mothers about whether a woman becoming pregnant during lactation should continue breastfeeding

( $p < 0.00$   $\chi^2 = 20,719$ ). A significantly higher rate of the university graduates noted that women becoming pregnant during lactation (64.1%) should maintain breastfeeding compared to the literate/illiterate mothers (35.9%) ( $p < 0.00$   $\chi^2 = 15.893$ ), primary school graduates (56.1%) ( $p < 0.01$   $\chi^2 = 11,470$ ) and secondary school graduates (47.9%) ( $p < 0.02$   $\chi^2 = 9,930$ ). Similarly, education significantly affected the opinions of the mothers about whether they themselves would maintain breastfeeding if they became pregnant ( $p < 0.00$   $\chi^2 = 20,975$ ). A significantly higher rate of the university graduates (61.8%) were willing to breastfeed their prior baby if they became pregnant compared to the literate/illiterate mothers (38.2%) ( $p < 0.01$   $\chi^2 = 10,592$ ), primary school graduates (48.8%) ( $p < 0.00$   $\chi^2 = 15,089$ ) and secondary school graduates (41.7%) ( $p < 0.01$   $\chi^2 = 11,997$ ).

Thirty-two percent of the mothers having a history of multiparity (n=90) reported that they became pregnant while breastfeeding their current or prior babies. They noted that their babies were aged 2-24 months when they learned about their pregnancy. The highest rate of them (45.6%) became pregnant when their babies were aged 13-24 months (min= 2 max= 24). More than half of the mothers becoming pregnant during lactation (53.3%) said that they learned about their pregnancy in the sixth gestational week or later (min=5; max=35) (Table 4).

Sixty mothers (66.7%) did not observe any changes in their babies until they learned about their pregnancy. However, 30 mothers (33.3%) said that their babies did not want mother's milk, lost weight and became ill (vomiting, diarrhea and high temperature). After learning about their pregnancy, 64 mothers (71.1%) did not recognize any changes in their milk or babies, but 26 mothers said (28.9%) that their milk changed in terms of its color, quantity and viscosity and their baby became ill (vomiting and diarrhea) (Table 4).

**Table 4.** The mothers' behaviors concerning maintenance of breastfeeding during pregnancy (n=281)

The mothers' behaviors	n	%
<b>Have you ever become pregnant during lactation?</b>		
Yes	90	32.0
No	191	68.0
<b>How old was the baby you breastfed when you learned about your pregnancy? (n=90)</b>		
≤6 months	17	18.9
7-12 months	32	35.5
13-24 months	41	45.6
Median: 12		
<b>What was the gestational week when you learned about your pregnancy? (n=90)</b>		
≤6 weeks	48	53.3
≥7 weeks <sup>a</sup>	42	46.7
Median:6		
<b>Did you notice any changes in the baby you breastfed before you learned about your pregnancy? (n=90)</b>		
Yes	30	33.3
No	60	66.7

Table 4. Continued

The mothers' behaviors	n	%
<b>Did you notice any changes in your milk before you learned about your pregnancy? (n=90)</b>		
Yes <sup>b</sup>	16	17.8
No	74	82.2
<b>Did you notice any changes in your milk or baby after you learned about your pregnancy? (n=90)</b>		
Yes <sup>c</sup>	26	28.9
No	64	71.1
<b>Did you ask someone about maintenance of breastfeeding during your pregnancy? (n=90)</b>		
Yes	62	68.9
No	28	31.1
<b>Who did you ask about maintenance of breastfeeding during your pregnancy? (n=62)</b>		
Nurse	5	8.1
Midwife	2	3.2
Doctor	26	41.9
Relative <sup>d</sup>	29	46.8
<b>What did the health professional/relative recommend about maintenance of breastfeeding during your pregnancy? (n=62)</b>		
He/she recommended stopping breastfeeding.	48	77.4
He/she recommended continuing to breastfeed.	14	22.6
<b>Who recommended stopping breastfeeding? (n=48)</b>		
Health professional	24	50.0
Relative	24	50.0
<b>Did you continue to breastfeed your baby after you learned about your pregnancy? (n=90)</b>		
Yes	46	51.1
No	44	48.9
<b>At what gestational week did you stopped breastfeeding your baby? (n=46)</b>		
7-14	25	54.3
15-22	16	34.8
23-36	5	10.9
<b>How old was your baby when you weaned it? (n=90)</b>		
<6 months	9	10.0
6 months	6	6.7
7-12 months	25	27.8
13-23 months	47	52.2
24≥ months	3	3.3
<b>How did people react when you continued to breastfeed your baby during your pregnancy? (n=90)</b>		
Positive	16	17.8
Indecisive/unresponsive	20	22.2
Negative	54	60.0
<b>How did the health professionals react when you continued to breastfeed your baby during your pregnancy? (n=90)</b>		
Positive	19	21.1
Indecisive/unresponsive <sup>e</sup>	47	52.2
Negative	24	26.7

Findings presented in this table reflect responses of the mothers giving birth at least once. <sup>a</sup>Thirty-nine mothers learned their pregnancy in the 7<sup>th</sup>-12<sup>th</sup> gestational week, one mother in the 16<sup>th</sup> gestational week, one mother in the 22<sup>nd</sup> week and one mother in the 35<sup>th</sup> gestational week. <sup>b</sup>The mothers reported that the mother's milk was yellowish, dark in color or water and changed in its taste (n=16). <sup>c</sup>The mothers reported that the mother's milk changed in color, amount and viscosity and that the bay become ill (vomiting, diarrhea) (n=26). <sup>d</sup>The first-degree relatives like mother, mother-in-law, sister-in-law (n=29) were included in this group. <sup>e</sup>The answers "I didn't ask about maintenance of breastfeeding" (n=7), "indecisive/unresponsive" (n=38), "The gynecologist told me to breastfeed my baby, but the family physician told me not to breastfeed" (n=1) and "The nurse said that it is not harmful but that I mustn't breastfeed" (n=1) were included

Out of 90 mothers (32%) becoming pregnant during lactation, 62 asked (68.9%) someone for advice about maintenance of breastfeeding and 77.4% of them said that the people they requested advice from (health professionals and relatives) told them not to breastfeed or stop breastfeeding after the third month of their pregnancy. Some mothers said that they asked health professionals for advice and that while half of the health professional advised them to quit breastfeeding, the others recommended maintaining breastfeeding (Table 4).

Of 90 mothers (32%) becoming pregnant during lactation, 46 reported (51.1%) continuing to breastfeed after learning about their pregnancy and more than half of them (54.3%) noted that they maintained breastfeeding until the 7<sup>th</sup>-14<sup>th</sup> weeks of their pregnancy (min= 7; max= 36). A Syrian, primary school graduate mother breastfeeding until the 36<sup>th</sup> week of her pregnancy noted that she asked her gynecologist about breastfeeding during pregnancy since she thought it would not be harmful and her baby would need it. She added that she maintained breastfeeding her baby during her pregnancy since her doctor recommended continuing to breastfeed as long as she took vitamins. Sixty percent of the mothers reported people around them did not approve of their breastfeeding throughout their pregnancy. Fifty-two-point-two percent of the mothers said that health professionals did not display a negative or a positive reaction to their breastfeeding (Table 4). Only family type significantly affected the behavior of maintenance of breastfeeding in the mothers becoming pregnant during lactation ( $p < 0.033$   $\chi^2 = 4,535$ ). A higher rate of the mothers having a nuclear family maintained breastfeeding after becoming pregnant than those having an extended family.

## Discussion

The present study was performed to seek an answer to the question "What are the opinions and behaviors of the mothers about maintenance of breastfeeding during lactation". The study included 358 early postpartum mothers. It was shown that three of every four survey takers believed that mothers should stop breastfeeding after becoming pregnant. Besides, most of the mothers becoming pregnant in the past were found to cease breastfeeding short time after they learned about their pregnancy. However, most of the mothers knew how long a baby should receive exclusive breastfeeding or should be breastfed. It can be suggested that cultural and environmental factors rather than knowledge of the mothers are effective in their opinions and behaviors regarding continuation of breastfeeding during lactation.

About one third of the mothers were either high school graduates or had a higher level of education. More than half of the mothers spent their childhood in a big city like Istanbul, where they could easily access education, healthcare and socio-cultural activities. One of every four mothers became a mother for the first time. Eight of every ten mothers were aware that babies should be exclusively breastfed for six months and seven of every ten mothers knew that they should breastfeed their babies for at least 24 months. Most of the mothers having above mentioned features said that women becoming pregnant during lactation

should discontinue breastfeeding and that they would stop breastfeeding their prior baby if became pregnant. This finding was important since it showed that knowledge of the mothers did not have an influence on their opinions. The main factors affecting the mothers' opinions was social and cultural beliefs. There have not been any studies on opinions of women about maintenance of breastfeeding during pregnancy. Consistent with the finding of the present study, several studies on the reasons for weaning the baby showed that pregnancy was a cause of weaning (7,8,12,13).

## Opinions of Mothers about Maintenance of Breastfeeding during Pregnancy

The mothers in favor of maintenance of breastfeeding during pregnancy differed in their opinions about the duration of breastfeeding. A group of the mothers maintained that breastfeeding could be continued for 1-8 months depending on the fetus, mother/baby health status and pregnancy. Although they had accurate knowledge of infant feeding, they held the view that breastfeeding maintenance did not rely on the need for exclusive breastfeeding and duration of breastfeeding but relied on the fetus, infant, mother or the course of pregnancy. This view might have resulted from their cultural background and social environment. Health status of the pregnant mothers, their fetuses and babies, tiredness and workload of the pregnant mothers, social pressure, any harm to the mothers, their babies and their fetuses according to the mothers' opinions and other personal reasons seem to be the frequent factors affecting their views. However, it was shown in the literature that breastfeeding maintenance did not have a negative effect on mothers continuing to breastfeed, their babies, fetal growth/development or pregnancy (14-16). Besides, the finding that the mothers learning about their pregnancy in the 35<sup>th</sup> gestational week and continuing to breastfeed until then and their babies were healthy shows that breastfeeding can be maintained during pregnancy. The mothers' worries can be due to their insufficient information about the issue.

The other group of the mothers noted that the age of the baby was important for breastfeeding maintenance by taking account of young age of the baby for weaning, its right to receive mother's milk and its growth and development. Most of the mothers were aware of the accurate information about duration of breastfeeding. In addition, the university graduates mainly supported the idea that breastfeeding should be maintained if they or other women became pregnant during lactation. This finding showed that knowledge of the mothers had an influence on their opinions and behaviors as their education level increased. Consistent with this finding, several studies have revealed that mothers' education level affects their opinions about their health, breastfeeding behavior and attitudes and their children's health (17-19).

In the present study, eight of every ten mothers had the opinion that maintenance of breastfeeding during pregnancy would harm the mother, the fetus and the baby breastfed. It has been shown in the literature that continuation of breastfeeding during pregnancy does not create a risk regarding maternal health, pregnancy, abortion, pregnancy complications (intrauterine

death, intrauterine growth retardation and missed abortion) and preterm labor (14-16, 20-23). In a case report about two mothers becoming pregnant during lactation and breastfeeding their babies during their pregnancy, Devocioğlu et al. (24) stated that the mothers took vitamin and iron supplements and continued to breastfeed their babies throughout their pregnancy without any complications. However, Ayrim et al. (25) showed in their study that maintenance of breastfeeding during pregnancy significantly decreased weight gain and increased the risk of anemia in the mothers during pregnancy. They recommended that the mothers should be followed in terms of nutrition and anemia and provided with education about them. There have not been any other studies justifying worries of the mothers regarding breastfeeding during pregnancy except for the study by Ayrim et al. (25).

The mothers included in the present study had the opinion that the taste and content of the mother's milk changed during pregnancy and made the breastfed baby ill or poison it. They also thought that the fetus had the right for breastfeeding and that breastfeeding during pregnancy was against the principles of Islam, which was consistent with several studies in the literature (13,24,26,27). It is stated in a review that the mother's milk can decrease in quantity, change in terms of color and content during pregnancy and turn into colostrum towards the end of pregnancy (28). However, it is reported in the literature that these changes in the mother's milk do not have a negative impact on the health of the baby breastfed during pregnancy (23,29). Several studies about mothers' worries that maintenance of breastfeeding during pregnancy may have harmful effects have shown that birth weight and Apgar score of the newborn are not affected (14,25,30). It is known that some women becoming pregnant during lactation continue breastfeeding their baby during pregnancy and even both their baby and the newborn after giving birth (23,26,31). This is called tandem breastfeeding in the literature (31,32). Three fourth of the mothers in the present study had worries about tandem breastfeeding and noted that it should not be performed. In two case reports, it was stated that the mothers became pregnant during lactation, continued breastfeeding during their pregnancy and performed tandem breastfeeding after giving birth. The mothers were reported to believe that tandem breastfeeding was indicator of respect for the babies (31) and prevented siblings' becoming jealous of each other (24,31). Congruent with the literature, few mothers in the current study were in favor of tandem breastfeeding.

### **Behaviors of Mothers about Maintenance of Breastfeeding during Pregnancy**

In this study, 21.4% of the mothers were found to wean their babies since they became pregnant, wanted to become pregnant or thought they became pregnant. This showed that the mothers were not offered sufficient support for contraception in the postpartum period. It is stated in the literature that becoming pregnant during lactation has a considerable effect on early weaning of babies (1.3-55.7%) (7,8,12). Compatible with the literature, the present study also revealed that becoming pregnant while lactating played an important role in early weaning of the babies.

In the current study, of all the multiparous mothers, 32% became pregnant during lactation currently or previously and about half of them stopped breastfeeding soon after they learned about their pregnancy and the rest did so in a few weeks after learning about their pregnancy. However, few mothers maintained breastfeeding until the third trimester. In Ayrim et al.'s (25) study, 27.2% of the mothers were found to become pregnant during their lactation period and in Şengül et al.'s (16) study, 63.9% of the mothers were found to become pregnant while lactating. These findings indicated that a considerable rate of the mothers became pregnant during lactation.

Most of the mothers included in the present study and becoming pregnant during lactation said that they learned about their pregnancy in the sixth gestational week on average. In Devocioğlu et al.'s (24) report of two cases, one mother learned about her pregnancy in the 12<sup>th</sup> gestational week and the other mother learned about it in the fifth gestational week. It could be suggested that mothers usually learned about their pregnancy in the first trimester. In the present study, one third of the mothers becoming pregnant during lactation reported that their breastfed babies became ill and had some symptoms like nausea, vomiting, diarrhea and high temperature until they learned about their pregnancy. They also said that they observed changes in color, quantity and viscosity in the mother's milk and that even their babies rejected mother's milk since its taste changed. Besides, they mentioned that similar changes appeared in the mother's milk after they learned about their pregnancy. These findings from the present study are consistent with the evidence from the literature.

Moscone and Moore (23) also reported that 49% of the mothers becoming pregnant during lactation experienced changes in the amount of the mother's milk and the frequency of breastfeeding. In a study by Shaaban and Glasier (29), 66.3% of the mothers had changes in the quantity of the mother's milk and the frequency of breastfeeding and only 29.6% of the mothers observed diarrhea, pulmonary infections and slow growth in the breastfed babies. Although it has been reported in the literature that the production and color of the mother's milk can change during pregnancy (33), there is not reliable evidence that the mother's milk produced during pregnancy can be harmful (23,29).

In the present study, more than two thirds of the mothers becoming pregnant during lactation asked health professionals (midwives, nurses or doctors) and/or their first degree relatives about continuation of breastfeeding. They were frequently recommended to stop breastfeeding. Some of the mothers noted that they asked two different health professionals about maintenance of breastfeeding (nurse, midwife, family physician, gynecologist and pediatrician) and that one recommended continuation of breastfeeding while the other recommended quitting it. In Moscone and Moore's (23) study, the women becoming pregnant during lactation also consulted their spouses, relatives and health professionals about breastfeeding during their pregnancy. It was reported by Moscone and Moore (23) that while midwives and the women's spouses were supportive, other health professionals and the women's relatives suggested



weaning. Besides, some of the women (39%) were reported to conceal their pregnancy from health professionals in order not to receive a negative response to their maintenance of breastfeeding (23). In a report of two cases, Devocioğlu et al. (24) revealed that the mothers becoming pregnant during lactation requested information from gynecologists and that one of them was recommended to maintain it whereas the other was recommended to wean her baby. Pareja et al. (30) showed that 20% of the mothers becoming pregnant during lactation received advice from their friends, relatives or health professionals and that those receiving recommendation from their relatives continued to breastfeed till the end of their pregnancy. It can be suggested that the present study is consistent with the literature. Although health professionals, relatives and mothers seem to disagree about continuation of breastfeeding, they mostly recommend weaning the baby. In the current study, 51.1% of the mothers becoming pregnant during lactation continued to breastfeed their babies for some time after learning about their pregnancy. It is striking that some of these mothers decided to breastfeed depending on the age of the baby or the gestational week. Only one mother was found to continue to breastfeeding her baby until it was two years old (until the 36<sup>th</sup> gestational week) since she thought her baby needed it and since her gynecologist told her to continue breastfeeding with taking a vitamin supplement. Several other studies also showed that mothers becoming pregnant during lactation maintained breastfeeding for some time during pregnancy (15,21,26). Devocioğlu et al. (24) stated in their case report that the mothers becoming pregnant during lactation breastfed their babies during their pregnancies with taking vitamin and iron supplements and did not experience any health problems. Duration of breastfeeding during pregnancy determined in the present study was similar to that reported in the literature. The breastfeeding behavior of most of the mothers during their pregnancy was not approved by their friends and relatives and many people around them. Half of the mothers asking for advice from health professionals reported receiving a negative response and some of the mothers noted that health professionals were indecisive about or unresponsive to their request for advice. Some women did not ask health professionals about maintenance of breastfeeding in case they told them not to breastfeed their babies. Consistent with the present study, several studies showed that some health professionals and people around women becoming pregnant during lactation advised the women to wean their babies (8,24). However, the health professionals play an active role in the decision of continuing breastfeeding while breastfeeding during pregnancy. For this reason, the pregnant woman should be listened to with interest and her questions should be answered carefully. A supportive and reassuring relationship should be established with the mother, and she should be explained that there is no need to wean her baby if she becomes pregnant while breastfeeding, and that she can continue breastfeeding and that she can breastfeed in tandem after delivery (34,35). Maintenance and duration of breastfeeding during pregnancy can be affected by the type of family bringing up women, society, education, religious values and beliefs of the women about breastfeeding.

## Study Limitations

In this survey, mothers were asked about their opinions, past experiences and behaviors regarding continuing breastfeeding during pregnancy. These opinions and behaviors may not be representative of all other mothers, and they may be affected by the time the survey was taken. Therefore, the results cannot be generalized.

## Conclusion

In this study, most of the mothers believed that they had to wean their baby if they become pregnant during lactation. However, a small number of the women believed that they could continue to breastfeed their baby if the course of pregnancy and/or the health status of the mother, fetus and the baby breastfed was good. University education was the most important factor affecting the mothers' opinion about maintenance of breastfeeding during pregnancy. Most of the mother also believed that the content of the mother's milk changed during pregnancy and that breastfeeding harmed the mother, the fetus and/or the baby. A considerable rate of the mothers had an experience of becoming pregnant during lactation and weaned their baby in the past. The mothers continuing to breastfeed were disapproved of their breastfeeding behavior. Having a nuclear family was another factor that supported maintenance of breastfeeding.

In conclusion, the main factor determining the mothers' opinions and behaviors regarding maintenance of breastfeeding during pregnancy is not their knowledge about breastfeeding but their worries about their own health or their babies' health, societal, cultural and religious beliefs, recommendations and reactions of health professionals, family and friends. Considering benefits of breastfeeding for the recommended period of time, women becoming pregnant during lactation should be encouraged to continue breastfeeding.

## Ethics

**Ethics Committee Approval:** The ethical review of study was approved by the University of Health Sciences Türkiye, Istanbul Training and Research Hospital Ethic Committees (number: E.4117, date: 25.12.2018).

**Informed Consent:** Informed consent was obtained from the mothers meeting the inclusion criteria and accepting to participate in the study.

## Footnotes

### Authorship Contributions

Concept: P.D.K., S.Ö., Design: P.D.K., S.Ö., Data Collection or Processing: P.D.K., Analysis or Interpretation: P.D.K., S.Ö., Literature Search: P.D.K., Writing: P.D.K., S.Ö.

**Conflict of Interest:** No conflict of interest was declared by the authors.

**Financial Disclosure:** The authors declared that this study received no financial support.

## References

- World Health Organization, UNICEF. Baby-Friendly Hospital Initiative Revised, Updated and Expanded for Integrated Care. Section 2, Strengthening and sustaining the baby-friendly hospital initiative: a course for decision-makers. Geneva, Switzerland: 2009.
- World Health Organization, UNICEF. Facts for Life (4). New York: 2010.
- World Health Organization, UNICEF. Global Breastfeeding Scorecard, 2018 Enabling Women to Breastfeed Through Better Policies and Programmes. Geneva, Switzerland: 2018.
- Hacettepe University Institute of Population Studies. Turkey Demographic and Health Survey 2018. Elma Teknik Basım Matbaacılık Ltd. Şti. Ankara, Turkey; 2018.
- Baranowska B, Malinowska M, Stanaszek E, Sys D, Bączek G, Doroszewska A, et al. Extended breastfeeding in Poland: knowledge of health care providers and attitudes on breastfeeding beyond infancy. *J Hum Lact.* 2019;35:371-80.
- Fang Z, Liu Y, Wang H, Tank K. The patterns and social determinants of breastfeeding in 12 selected regions in china: a population- based cross-sectional study. *J Hum Lact.* 2019;36:436-47.
- Ramiro González MD, Ortiz Marrón H, Arana Cañedo-Argüelles C, Esparza Olcina MJ, Cortés Rico O, Terol Claramonte M, et al. Prevalence of breastfeeding and factors associated with the start and duration of exclusive breastfeeding in the community of Madrid among participants in the ELOIN. *An Pediatr (Engl Ed).* 2018;89:32-43.
- Gürarlan Baş N, Karatay G, Arıkan D. Weaning practices of mothers in eastern Turkey. *J Pediatr (Rio J).* 2018;94:498-503.
- Holmgren T, Lee AHX, Hocaloski S, Hamilton LJ, Hellsing I, Elliott S, et al. The influence of spinal cord injury on breastfeeding ability and behavior. *J Hum Lact.* 2018;34:556-65.
- Magarey A, Kavian F, Scott JA, Markow K, Daniels L. Feeding mode infants in the first months of life. *J Hum Lact.* 2016;32:95-104.
- Mikami FCF, Francisco RPV, Rodrigues A, Hernandez WR, Zugaib M, de Lourdes Brizot M. Breastfeeding twins: factors related to weaning. *J Hum Lact.* 2018;34:749-59.
- Po E, Ec N, Cu N. Weaning practices among breastfeeding mothers local communities of Enugu State Nigeria. *Clinics Mother Child Health.* 2018;15:2-5.
- Samlı G, Kara B, Cöbek Ünalın P, Samlı B, Sarper N, Gökalp AS. Knowledge, beliefs and practices of mothers about breastfeeding and infant nutrition: a qualitative study. *Marmara Med J.* 2006;19:13-20.
- Albadran MM. Effect of breastfeeding during pregnancy on the occurrence of miscarriage and preterm labour. *Iraqi J Med Sci.* 2013;11:285-9.
- Onwudiegwu U. Is breastfeeding during pregnancy harmful? *J Obstet Gynaecol.* 2000;20:157.
- Şengül Ö, Sivaslıoğlu AA, Kokanali MK, Üstüner I, Aşar AF. The outcomes of the pregnancies of lactating women. *Turk J Med Sci.* 2013;43:251-4.
- Alfianrisa A, Salimo H, Poncorini E. Factors associated with exclusive breastfeeding: application of precede-proceed model and theory of planned behavior. *J Maternal and Child Health.* 2017;2:42-53.
- Tang K, Wang H, Tan SH, Xin T, Qu X, Tang T. Association between maternal education and breastfeeding practices in China: a population-based cross-sectional study. *BMJ Open.* 2019;9:e028485.
- Tsanidou E, Gougoula V, Tselebonis A, Kontogiorgis C, Constantinidis TC, Nena E. Socio-demographic factors affecting initiation and duration of breastfeeding in a culturally diverse area of North Eastern Greece. *Folia Med (Plovdiv).* 2019;61:566-71.
- Ishii H. Does breastfeeding induce spontaneous abortion? *J Obstet Gynaecol Res.* 2009;35:864-8.
- Madarshahian F, Hassanabadi M. A comparative study of breastfeeding during pregnancy: impact on maternal and newborn outcomes. *J Nurs Res.* 2012;20:74-80.
- Marquis GS, Penny ME, Diaz JM, Marín RM. Postpartum consequences of an overlap of breastfeeding and pregnancy: reduced breast milk intake and growth during early infancy. *Pediatrics.* 2002;109:e56.
- Moscone SR, Moore MJ. Breastfeeding during pregnancy. *J Hum Lact.* 1993;9:83-8.
- Devecioğlu E, Güneş Kürkçü D, Kural B, Eren T, Gökçay G. Breastfeeding during pregnancy and tandem nursing: case reports. *Ist Faculty Med.* 2014;77:60-3.
- Ayrim A, Gunduz S, Akcal B, Kafali H. Breastfeeding throughout pregnancy in Turkish women. *Breastfeed Med.* 2014;9:157-60.
- Böhler E, Ingstad B. The struggle of weaning: factors determining breastfeeding duration in east Bhutan. *Soc Sci Med.* 1996;43:1805-15.
- Ergenekon-Ozelci P, Elmaci N, Ertem M, Saka G. Breastfeeding beliefs and practices among migrant mothers in slums of Diyarbakir, Turkey, 2001. *Eur J Public Health.* 2006;16:143-8.
- López-Fernández G, Barrios M, Goberna-Tricas J, Gómez-Benito J. Breastfeeding during pregnancy: A systematic review. *Women Birth.* 2017;30:292-300.
- Shaaban OM, Glasier AF. Pregnancy during breastfeeding in rural Egypt. *Contraception.* 2008;77:350-4.
- Pareja RG, Marquis GS, Penny ME, Dixon PM. A case-control study to examine the association between breastfeeding during late pregnancy and risk of a small-for-gestational-age birth in Lima, Peru. *Matern Child Nutr.* 2015;11:190-201.
- O'Rourke MP, Spatz DL. Women's experiences with tandem breastfeeding. *MCN Am J Matern Child Nurs.* 2019;44:220-7.
- Serhatlıoğlu SG, Yılmaz E. What is tandem breastfeeding? *IGUSABDER.* 2020;12:433-42.
- Marquis GS, Penny ME, Zimmer JP, Díaz JM, Marín RM. An overlap of breastfeeding during late pregnancy is associated with subsequent changes in colostrum composition and morbidity rates among Peruvian infants and their mothers. *J Nutr.* 2003;133:2585-91.
- Çoşkun Erçelik H. Tandem ve gebelikte emzirmede hemşirelik yaklaşımı. *Hacettepe Üniversitesi Hemşirelik Fakültesi Dergisi.* 2022;9:95-9.
- Uysal B, Akdolun Balkaya N. Getting pregnant while breastfeeding: can i carry on breastfeeding? *EGEHF.* 2002;38:53-61.