

Postcesarean Difficulties and their Association with Breastfeeding Success in Postpartum Women

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ABSTRACT

Background: The rate of cesarean section (CS) has been gradually increasing throughout the world. The impact of CS on the issue of breastfeeding success therefore merits attention. **Aim:** This study investigates postcesarean difficulties and their association with breastfeeding success. **Patients and Methods:** This study is a cross-sectional study involving the participation of 220 mothers who were receiving care at the Women's Health Training and Research Hospital in Ankara, Turkey between the dates of February 10 and August 10 of 2016. Data were collected using the Socio-demographic and Obstetric Characteristics Form and the LATCH Breastfeeding Assessment Tool (LBAT). **Results:** Women who had breastfeeding problems both previously (OR = 0.59; 95% CI: 0.18–1.76; $P = 0.004$) and currently (OR = 0.29; 95% CI: 0.14–1.30; $P < 0.001$) were more likely to have low breastfeeding success scores. There was no statistically significant relationship found between LBAT mean scores and other post-CS difficulties. Women aged 35 and older were more likely to have breastfeeding success compared to that of women of ≤ 19 years of age (OR = 4.33; 95% CI: 3.50–4.45; $P = 0.051$). Furthermore, women who had breastfeeding experience were more likely (OR = 1.86; 95% CI: 1.40–2.67; $P = 0.010$) to have a high breastfeeding success score. **Conclusions:** This study has revealed that breastfeeding success was associated more with breastfeeding problems than with other difficulties experienced after a CS. To prevent breastfeeding problems before they occur, newborns who are without complications should be kept in skin-to-skin contact (SSC) with their mothers immediately after the CS, breastfed within the first 1 hour after birth, and remain in SSC until the end of the first breastfeeding. Most importantly, to increase breastfeeding success after CS, creative staffing solutions need to be employed.

KEYWORDS: Breastfeeding, cesarean section, nurses, nursing care, postpartum period

INTRODUCTION

The World Health Organization (WHO) recommends that breastfeeding should be initiated within 1 hour of delivery, newborns should be exclusively fed on breast milk for the first 6 months after birth, and breast milk should be supplemented with other appropriate foods up to 2 years of age.^[1,2] In 2012, the World Health Assembly (WHA) endorsed a plan to increase the rate of exclusive breastfeeding (EBF) during the 6 months after delivery to $\geq 50\%$ by 2025.^[3] Data from the Turkey

Demographic and Health Survey (TDHS) (2018) show that 71.3% of babies are breastfed within the first hour of delivery and that 41.7% of newborns are given prelacteal feeds.^[4] The data further revealed the rate of EBF during the 6 months after delivery to be 41% and

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the mean duration of breastfeeding to be approximately 16.7 months.^[4] Based on these results, it can be seen that although breastfeeding behavior is common in Turkey, the rate of breastfeeding within the first hour of life and EBF up to 6 months is not at the desired level.

Cesarean section (CS) rates are gradually increasing in Turkey as well as in the rest of the world. Research conducted by WHO has shown that increases in countries' CS rates that are beyond 10% are not associated with reductions in maternal and newborn mortality rates.^[5] According to TDHS data, in Turkey, the rate of CS is 52%.^[4] In looking at some of the other countries in the world, this rate is 41.3% in Brazil, 37.4% in Italy, and 30.2% in the USA.^[6] Compared to other countries in the world, the CS prevalence rate of 52% remains relatively high in Turkey. Therefore, the issue concerning breastfeeding success after CS in Turkey merits attention.

While delay in regaining consciousness after anesthesia, fatigue related to surgery and delayed oral feeding, and limited movement due to the urinary catheter have been shown to be among the general difficulties experienced after CS procedures, problems with positioning and latching, breast engorgement, cracked and sore nipple, and insufficient milk supply have been reported to be among the difficulties specifically related to breastfeeding after CS procedures.^[7-10] Previous studies have reported that postoperative care routines after CS interrupt bonding, delay the time mothers get to first hold their infants, and reduce early breastfeeding, all of which are mechanisms that potentially compromise breastfeeding.^[11] Furthermore, study results have also shown that pain at the incision site and restlessness can suppress both prolactin secretion and breast milk secretion, as pain can stimulate neurotransmitter catecholamine release.^[12,13] Although there are many studies indicating that cesarean delivery affects breastfeeding negatively, only a limited number of studies have examined breastfeeding success in terms of the difficulties caused by the CS operation itself and the difficulties specifically experienced in breastfeeding as a result of the CS operation. Greater understanding of the associations between post-CS difficulties and breastfeeding success will contribute to the increase of breastfeeding success after CS by allowing focus to be directed to the modifiable variables that affect breastfeeding success. Therefore, the purpose of this study was to investigate post-cesarean difficulties and their association with breastfeeding success.

PATIENTS AND METHODS

Design and setting of the study

This cross-sectional study was carried out with mothers who gave birth by CS in the postnatal

clinic of the Women's Health Training and Research Hospital in Ankara, Turkey between the dates of February 10 and August 10 of 2016. This hospital was chosen because it provides service to patients who are from other cities of Turkey and who have different socioeconomic backgrounds and cultural characteristics, with the majority of patients having a low socioeconomic status. The postnatal clinic where the study was conducted has a 34-bed capacity and employs four nurses who work the day shift and two who work on the night shift.

Mothers are encouraged to breastfeed in the recovery room within 1 hour after giving birth. The standard care practices applied in the study hospital, however, hindered opportunities for both skin-to-skin contact (SSC) and breastfeeding in the first 1 hour after cesarean birth. The mother and newborn share the same room in the hospital, and the nurses hold the major responsibility for postoperative care practices after CS and for breastfeeding support. However, due to the small number of nurses, early hospital discharge, and high staff workload, breast-feeding training is performed by the nurses in the postpartum ward in the form of group training. If the baby's blood sugar level is over 50 mg/dl 30 minutes after being breastfed by the mother, formula is not prescribed, and breastfeeding is exclusively performed.

Study sample

The study population consisted of 4000 mothers who have given birth via CS at the hospital within the previous year. Sample size was calculated based on the study by Karakaş and Küçükoğlu^[14] using PASS 2008 software, where the α value was (α) = 0.05, expected deviation was 5%, and power was $(1 - b) = 0.80$. Based on these values, the sample size was determined to be 220 mothers. Fourteen mothers refused to participate in the study due to extensive pain and fatigue. Mothers who did not have any complications during their pregnancy and delivery, who underwent CS, who were planning to breastfeed after birth, who gave a full term birth, and whose babies' birthweights were within the normal range (2500 g–4000 g) were recruited for the study.

Data collection

Data were collected using the Socio-demographic and Obstetric Characteristics Form and the LATCH Breastfeeding Assessment Tool (LBAT). The Socio-demographic and Obstetric Characteristics Form was filled out by the mothers, while the LBAT was filled out by the researcher. Both the forms took approximately 15 to 20 minutes to complete. Data were collected before the mothers were discharged from the hospital.

Measurements

Socio-demographic and Obstetric Characteristics Form

This form consists of 32 multiple choice and open-ended questions aimed at identifying the mothers' sociodemographic and obstetric characteristics. Questions related to the socio-demographic characteristics of the mothers addressed their age, education, employment, etc., while the questions related to their obstetric characteristics addressed their previous mode of delivery, previous breastfeeding experience, previous breastfeeding duration, previous problems with breastfeeding, current problems with breastfeeding, recent pregnancy planning, whether or not they had received information about breastfeeding, and breastfeeding initiation time. The questionnaire also included open-ended questions regarding post-cesarean difficulties, such as *"What were the reasons for not breastfeeding within the first hour? What were the reasons for breastfeeding problems ? "*

To ensure the validity of the questionnaire, an advisory group was formed which included two nurses responsible for in-service training at the hospital, maternity nurse practitioners, a pediatric registered nurse, and university faculty. All members of the advisory group agreed on the questionnaire items, and a pilot study of the instrument was conducted with 15 mothers to further confirm the validity of the questionnaire. The findings from this pilot study were not included in the final analysis. To ensure the reliability of the instrument, the same advisory group examined the coding process of the answers given by the mothers for the open-ended question. All members of the advisory group agreed on the coding.

LATCH Breastfeeding Assessment Tool

The LBAT consists of five criteria: "L: Latch on breast," "A: Audible swallowing," "T: Type of nipple," "C: Comfort of breast/nipple," and "H: Hold."^[15] Each criterion is evaluated based on 0–2 points, with the total score being 10. According to this measurement tool, the mother's success with breastfeeding increases the closer the mother's score to 10 points. The reliability study for this tool was carried out by Yenil and Okumus (2003), and the reported Cronbach's α value of the Turkish version version was 0.95, while for the original version, this value was determined to be 0.93.^[16]

Data analysis

The dependent variables of this study are presented as mean and standard deviation while the independent variables are presented as frequencies and percentages. To evaluate the relationship between the breastfeeding success mean score and obstetric characteristics or

reasons in terms of both delayed breastfeeding and breastfeeding problems, the independent samples *t*-test was applied.

A logistic regression analysis was performed to evaluate predictors for breastfeeding success. The dependent variable was breastfeeding success (mean LBAT score), and the independent variables could be characterized as age, education, employment, previous breastfeeding experience, previous breastfeeding duration, and previous and current breastfeeding problems. Because of the first three variables that had been shown in previous studies to be important determinants^[7,11,13,17,18] for breastfeeding success after CS, they were included in the full model used to evaluate predictors. On the other hand, in this study, analysis using the T test revealed a significant relationship between breastfeeding problems and LATCH scores, rather than other difficulties after CS. In line with this result, previous breastfeeding experience, previous breastfeeding duration, and previous and current breastfeeding problems were also included in the full model, which are used to evaluate predictors for breastfeeding success. In the statistical analysis, $P < 0.05$ was considered significant.

Ethics

Required approvals to perform the research were received from the hospital at which the study was performed and from the ethics committee (IRB approval date 21.01.2016; IRB approval number 13). The scales' owners granted permission to use their scales in the study. Prior to the collection of the data, the study's purpose was explained to the mothers and those who agreed to participate in the study confirmed their participation through written consent forms.

RESULTS

As can be seen in Table 1, 35% of the mothers were in the 20–25 age group, while 13.6% were 35 years or older and 80.5% were unemployed. Although not included in the tables, of the working mothers, 45.2% planned to go back to work within 0–6 months after giving birth. Moreover, 23.8% of the mothers planned to feed their babies with only formula after going back to work. Around 71.2% of the mothers had breastfeeding experience and 36.4% of these mothers had breastfed their babies for 2 years or more. Also not included in the tables but important to note, 39.6% of the mothers had fed their babies exclusively with breast milk for 4 to 6 months. Of those with breastfeeding experience, 44.6% had previous breastfeeding difficulties [Table 1], with the most frequently experienced previous problems being inexperience (15.4%), cracked and sore nipple (12.7%), and pain at the incision site (10.0%).

Table 1: Results of the logistic regression predicting breastfeeding success (n=220)

Variables	Number (%)	Mean LBAT Score ¹	β	SE	<i>P</i>	OR	95% CI	
Age								
19 and younger	11 (5.0)	7.63±1.96	0.105	1.213	0.051	1.11	0.63-1.75	
20-25	77 (35.0)	8.16±1.78	0.995	0.847		2.70	1.50-2.87	
26-30	62 (28.2)	8.66±1.52	0.477	0.799		1.61	1.03-2.57	
31-34	40 (18.2)	8.37±1.62	1.466	1.182		4.33	3.50-4.45	
35 and older	30 (13.6)	7.63±1.71						
Education								
Primary school	45 (20.5)	8.33±1.63	−.223	1.022	0.076	0.80	0.55-1.56	
Secondary School	53 (24.1)	8.56±1.59	−.467	0.935		0.63	0.13-1.72	
High School	69 (31.4)	7.72±1.86	−.734	0.858		0.48	0.29-0.99	
College - University	53 (24.0)	8.40±1.62						
Employment								
Employed	43 (19.5)	8.34±1.74	0.211	0.794	0.659	1.24	0.77-2.01	
Unemployed	177 (80.5)	8.22±1.69						
Previous BF experience								
Yes	153 (71.2)	8.50±1.50	0.622	0.606	0.01	1.86	1.40-2.67	
No	62 (28.8)	7.62±2.01						
Previous BF duration								
0 - 6 months	23 (14.9)	8.47±1.67	−1.656	2.061	1.251	0.050	0.19	0.02-1.24
7 months - 11 months	24 (15.6)	7.75±1.91	−.095	1.183		0.13	0.03-1.15	
12 months - 23 months	51 (33.1)	8.78±1.34		1.428		0.91	0.01-1.43	
24 months or more	56 (36.4)	8.55±1.33						
Previous BF problems ²								
Yes	70 (44.6)	8.11±1.60	−.529	0.781	0.004	0.59	0.18-1.76	
No	87 (55.4)	8.80±1.37						
Current BF problems ²								
Yes	105 (47.9)	7.51±1.77	−1.254	0.681	0.000	0.29	0.14-1.30	
No	114 (52.1)	8.91±1.34						

¹LBAT (Breastfeeding Assessment Tool) ²cracked and sore nipple problem, problems with positioning, insufficient breast milk, inverted or flat nipples, and problems with latching

Table 2 shows that the mean LBAT score of those who could not breastfeed within the first hour (8.04 ± 1.83) was low ($P < 0.05$). Interestingly, there was no statistically significant relationship between mean LBAT score and the reasons for the inability of mothers to breastfeed within the first hour of delivery, such as delay in regaining consciousness due to anesthesia ($P > 0.05$), pain at the incision site ($P > 0.05$), fatigue related to surgery ($P > 0.05$), discomfort due to the urinary catheter ($P > 0.05$), and fatigue due to delayed oral feeding ($P > 0.05$) [Table 3]. The LBAT mean score was low for those who could not breastfeed within 1 hour after birth due to no breastmilk (7.53 ± 2.16) ($P < 0.05$) and for those with inverted or flat nipples (6.31 ± 2.79) ($P < 0.05$). The LBAT mean score was also low in mothers who experienced breastfeeding problems related to insufficient milk supply (7.42 ± 1.96) ($P < 0.05$), lack of experience (7.09 ± 2.05) ($P < 0.05$),

latching difficulties (6.54 ± 1.96) ($P < 0.05$), no breastmilk (7.17 ± 1.98) ($P < 0.05$), positioning problems (7.40 ± 2.04) ($P < 0.05$), and inverted or flat nipples (6.15 ± 2.56) ($P < 0.05$) [Table 3].

The mean LBAT score was the lowest in the age group of 19 and under (7.63 ± 1.96) and 35 and above (7.63 ± 1.71), while it was highest in the 26–30 age group (8.66 ± 1.52). The women who were 35 and older (OR = 4.33; 95% CI: 3.50–4.45; $P = 0.051$) as well as those who were between 26 and 30 years of age (OR = 2.70; 95% CI: 1.50–2.87; $P = 0.051$) were at increased odds of breastfeeding success compared to those of the women of ≤ 19 years of age. Age had a borderline significant association with breastfeeding success [Table 1].

Primary school graduates (OR = 0.80; 95% CI: 0.55–1.56; $P = 0.076$), secondary school graduates (OR = 0.62; 95% CI: 0.13–1.72; $P = 0.076$),

Table 2: Mothers' Obstetric Characteristics and Mean Breastfeeding Success Scores (n=220)

Obstetric characteristics	Number (%)	Mean LBAT Score ¹	t value	P	Mean diff.	95% CI
Previous mode of delivery						
Cesarean Section	115 (73.7)	8.45±1.53	-0.570	0.570	-0.157	-0.70; 0.38
Vaginal Birth	41 (26.3)	8.60±1.48				
Recent pregnancy planning			t = -2.190	0.030	-0.647	-1.22; -0.06
Planned	180 (81.8)	8.12±1.75				
Unplanned	40 (18.2)	8.77±1.34				
Receiving information about breastfeeding						
Received	151 (69.3)	8.35±1.53	1.547	0.123	0.387	-0.10; 0.88
Not received	67 (30.79)	7.97±2.04				
Breastfeeding initiation time						
Within the first hour	92 (41.8)	8.52±1.47	2.052	0.041	0.474	0.01; 0.93
After the first hour	128 (58.2)	8.04±1.83				

Table 3: Mean LBAT scores according to the reason for not breastfeeding within the first hour

The reason for not breastfeeding within the first hour	Number (%)	Mean LBAT Score ¹	t value	P	Mean diff.	95% CI
Delayed regaining of consciousness due to anesthesia	44 (19.9)	8.04±1.96	-0.869	0.386	-0.250	-0.81; 0.31
No breastmilk	41 (18.6)	7.53±2.16	-2.435	0.019	-0.871	-1.59; -1.15
Pain at the incision site	32 (14.5)	8.03±2.11	-0.768	0.443	-0.250	-0.89; 0.39
Fatigue related to surgery	28 (12.7)	8.32±1.36	0.252	0.801	0.087	-0.59; 0.76
Problems with positioning	20 (9)	7.80±2.44	-1.227	0.221	-0.490	-1.27; 0.29
Discomfort due to the urinary catheter	16 (7.2)	8.93±0.99	1.693	0.101	0.746	0.17; 1.32
Inverted or flat nipples	16 (7.2)	6.31±2.79	-2.947	0.010	-2.084	-3.58; -0.58
Fatigue due to delayed oral feeding	12 (5.4)	8.25±1.91	0.009	0.992	0.004	-0.99; 1.00
Late transfer to the postpartum clinic after birth	8 (3.6)	8.37±1.50	0.218	0.827	0.134	-1.07; 1.34
Reasons for Breastfeeding problems						
Insufficient milk supply	42 (19)	7.42±1.96	-3.541	0.010	-1.009	-1.57; -0.44
Pain at the incision site	33 (14.9)	7.75±1.95	-1.792	0.075	-0.573	-1.20; 0.05
Not having experience	31 (14)	7.09±2.05	-4.197	0.010	-1.337	-1.96; -0.70
Latching difficulties	31 (14)	6.54±1.96	-6.521	0.010	-1.975	-2.57; -1.37
No breastmilk	29 (13.1)	7.17±1.98	-3.744	0.010	-1.235	-1.88; -0.58
Problems with positioning	25 (11.3)	7.40±2.04	-2.670	0.008	-0.953	-1.65; -0.24
Inverted or flat nipples	20 (9)	6.15±2.56	-3.978	0.010	-2.400	-3.66; -1.13
Delayed regaining of consciousness due to anesthesia	12 (5.4)	8.33±1.23	0.183	0.855	0.092	-0.90; 1.09
Fatigue related to surgery	12 (5.4)	8.41±1.16	0.357	0.721	0.181	-0.81; 1.18
Discomfort due to the urinary catheter	10 (4.5)	7.90±1.19	-0.655	0.513	-0.361	-1.45; 0.72
Fatigue due to delayed oral feeding	10 (4.5)	8.00±1.49	-0.465	0.642	-0.257	-1.34; 0.83

¹LBAT (Breastfeeding Assessment Tool)

and high school graduates (OR = 0.48; 95% CI: 0.29–0.99; *P* = 0.076) were at decreased odds of breastfeeding success compared to those of women who were college-university graduates. As the education level decreased, breastfeeding success scores decreased [Table 1].

The mean LBAT score of the employed mothers (8.34 ± 1.74) was higher than that of the unemployed mothers (8.22 ± 1.69). Otherwise stated,

the employed mothers (OR = 1.23; 95% CI: 0.77–2.01; *P* = 0.659) were had greater likelihood of breastfeeding success compared to that of the unemployed mothers [Table 1].

The women who had breastfeeding experience were more likely (OR = 1.86; 95% CI: 1.40–2.67; *P* = 0.01) to have a high breastfeeding success score [Table 1]. The mean LBAT score of the mothers who had breastfed for 12–23 months (8.78 ± 1.34) previously

were found to have the highest LBAT scores [Table 1]. Women who breastfed 7–11 months (OR = 0.19; 95% CI: 0.02–1.24; $P = 0.05$) and those who breastfed 12–23 months (OR = 0.12; 95% CI: 0.03–1.15; $P = 0.05$) were less likely to have breastfeeding success compared to that of the women who breastfed 0–6 months previously.

Finally, the women who had breastfeeding problems both previously (OR = 0.58; 95% CI: 0.18–1.76; $P = 0.004$) and currently (OR = 0.28; 95% CI: 0.14–1.30; $P < 0.001$) were more likely to have a low breastfeeding success score [Table 1].

DISCUSSION

The results from this study investigating the relationship between post-cesarean difficulties and breastfeeding success will serve to identify modifiable variables that can contribute to increased breastfeeding success after CS.

In this study, one of the key findings was that women who had previous and current breastfeeding problems, such as sore and cracked nipple, inverted nipples, insufficient milk supply, and latching and positioning difficulties were more likely to have low breastfeeding success score ($P < 0.05$). Similarly, results from other studies on this subject have shown that in cases of breastfeeding problems, the mean breastfeeding success scores decrease.^[19–21] Furthermore, Alabi *et al.* (2020)^[9] stated that feeding with other foods, thinking that the milk is not enough after CS, may cause the baby to refuse to breast. They also emphasized that nursing mothers who have lactation problems must be encouraged to seek medical attention rather than quit EBF. On the other hand, Knudsen *et al.* (2020)^[22] demonstrated that prior problems with breastfeeding affected mothers' attitude toward early discharge because they needed experiences of successful breastfeeding before feeling ready to go home. A systematic review by McFadden *et al.* (2019)^[20] demonstrated that breastfeeding counselling and the provision of support to mothers on how to latch the baby onto the breast were effective interventions for increasing rates of breastfeeding, including EBF. In the present study, interestingly, there was no a statistically significant relationship between mean LBAT score and the difficulties related to CS, such as delay in regaining consciousness due to anesthesia, pain at the incision site, fatigue related to surgery, discomfort due to the urinary catheter, and fatigue due to delayed oral feeding ($P > 0.05$). Similarly, Fata and Atan (2018) reported that there are to be no statistically significant correlations between breastfeeding self-efficacy and fatigue.^[23] Conversely, in one study, it

was found that women who had a CS were 3.3 times more likely to have pain that affects breastfeeding than that of those who had a vaginal delivery.^[17] Moreover, Johar *et al.* (2021)'s^[24] study revealed that it was difficult for mothers to attach their infant to the breast and to place their infant at the proper position for breastfeeding because of the pain after the surgery and the difficulty moving. Findings from the present study regarding whether there was a significant relationship between breastfeeding problems, as opposed to problems related to the cesarean operation itself, were significant in that they showed the necessity of supporting breastfeeding after CS. As a core element of the Enhanced Recovery After Cesarean (ERAC), SSC should be started in the operation room instead of in the recovery room.^[25,26]

Another key finding from the study was that the mean LBAT score was low in the mothers who could not breastfeed within 1 hour after birth ($P < 0.05$) [Table 2]. In the present study, the initiation of breastfeeding was delayed after CS due to reasons such as problems with positioning, problems with latching, no breastmilk or insufficient milk supply, nipple problems, and mother–infant separation. Researchers have emphasized that mother–infant separation during the first 2 hours after birth is associated with less infant self-regulation and decreased maternal sensitivity and attachment, neither of which are able to be adequately compensated for by rooming-in.^[27,28] In a study conducted in Turkey, Paksoy and Erbaydar (2020) also stressed the importance of implementing strategies to prevent unnecessary CSs.^[29] When CS is unavoidable, it is necessary to explore new care routines to avoid separation or to at least shorten the time of separation. Research results show that if breastfeeding is initiated, the likelihood that a woman would still be breastfeeding at 6 months is unaffected by mode of delivery.^[11,18,30] Researchers have reported that the main challenges to ensuring the initiation of breastfeeding include lack of staffing, particularly nurse staffing, to supervise the safe positioning of mother and newborn in the OR.^[31,32] However, at the study hospital, due to a lack of staff, lack of time, and heavy workload, it takes about 1 to 2 hours before a mother gets to the recovery room after a CS and has the opportunity to engage in SSC with her newborn. This extended period of time in the operating room is largely due to newborn care processes, standard care routines, and monitoring of the mother for signs of complications. Researchers emphasized that supporting SSC requires creative staffing solutions and the allocation of additional nursing support in the operating room.^[18,33,34]

In the present study, a third key finding was that the women who had breastfeeding experience were 1.8 times

more likely to have breastfeeding success compared to that of the women with no experience ($P < 0.05$). It is important for nurses to encourage the mothers, especially those who are inexperienced, to breastfeed after delivery by CS. Realistic expectations should be given considering the additional challenges, like pain and discomfort, to breastfeeding after a caesarean. Hu *et al.* (2020)^[35] determined that Health Belief Model based interventions which focus mainly on the potential challenges of breastfeeding after cesarean delivery can improve breastfeeding behavior. Researchers have recommended that routine care in birthing environments should include the support of early mother–infant SSC immediately after birth and lasting until at least after the first breastfeeding.^[8,30]

Finally, in this study, the association between breastfeeding success and other basic variables that affect breastfeeding behavior, such as age, education, and employment, were evaluated. The results from this evaluation showed that while women 35 and older were four times more likely to have breastfeeding success compared to that of women of ≤ 19 years of age, women between the ages of 26 and 30 years were two times more likely of breastfeeding success compared to that of women of ≤ 19 years of age ($P = 0.051$). In effect, age was found to have a borderline significant association with breastfeeding success. Similar to the results of this study, results from most of the studies conducted on this subject have demonstrated that adolescent mothers had lower rates of breastfeeding success and more difficulties in continuing to breastfeed.^[27,36] A systematic review by Sipsma *et al.* (2015)^[27] emphasized that interventions should be less resource intensive and more theoretically driven to successfully promote breastfeeding among adolescent mothers. According to the study results, it is recommended that adolescent mothers should be provided breastfeeding support that is tailored to their age and requirements.

The present study also found that the employed mothers were 1.2 times more likely to have breastfeeding success compared to that of the women who were unemployed ($P > 0.05$). These results suggest that in order to maintain the success achieved in breastfeeding in the hospital setting, work environments should facilitate opportunities for breastfeeding. In a study conducted by Rivera-Pasquel *et al.* (2015),^[37] maternal employment was negatively associated with breastfeeding in Mexican mothers of 1-year-old infants. This is why better working conditions and maternity leaves, kindergartens that are close to work, and workplace environments equipped with designated areas where mothers can pump breast

milk and store it under appropriate conditions are of the utmost importance.^[8]

The findings from this study have important implications for hospital policies on nursing staff. The appropriate nurse-to-patient ratio is key to ensuring patient safety and quality care. If there are appropriate numbers of staff for patients, this will have a significant impact on supporting mothers in breastfeeding. Major clinical changes would have to take place to institute more effective implementation of SSC immediately after cesarean, greater support of breastfeeding within the first hour after birth, and the continuance of the SSC until the end of the first breastfeeding in a busy delivery ward environment.

This study did have one limitation that deserves mention. Since the cesarean rate was high in the study population, only the association between postcaesarean difficulties and breastfeeding success was investigated, rather than the relation between delivery methods and breastfeeding problems. However, despite this limitation, this is the only study from Turkey to examine this subject, and therefore, it is hoped that the findings from this study will aid in improving awareness on post-caesarean difficulties and breastfeeding success.

In line with the findings of this study, it can be recommended that a study should be conducted examining the effect of an intervention program designed to support breastfeeding after CS on the duration of EBF in the first 6 months, using a prospective study design.

CONCLUSION AND SUGGESTIONS

This study has revealed that breastfeeding success was more associated with breastfeeding problems than with other difficulties experienced after a CS. Therefore, breastfeeding problems should be prevented before they occur, and the first steps in doing this should start with ensuring SSC immediately after cesarean, supporting breastfeeding within the first hour after birth, and continuing the SSC until the end of the first breastfeeding. Additionally, it would be highly beneficial for the mother to receive practical training on how to get the baby to latch on correctly during breastfeeding and to have a nurse monitor at least one breastfeeding experience until the end to ensure that the mother is doing it properly. Finally, and most importantly, to increase breastfeeding success after CS, creative staffing solutions need to be employed.

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Conflicts of interest

There are no conflicts of interest.

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