

Determinants of Exclusive Breastfeeding in the Second Month after Birth in Turkey: The Role of Prenatal Breastfeeding Self-Efficacy

Esin Uzar Akça¹, Hale Uyar Hazar^{2*}

Abstract

Background: The decline in breastfeeding rates with exclusive breast milk in the second month postpartum is an important situation we have encountered. This requires consideration of the relationship with prenatal breastfeeding self-efficacy.

Objective: The aim of the study was to determine the role of prenatal breastfeeding self-efficacy in exclusive breastfeeding in the second -month postpartum in Turkey.

Methods: This is an analytical, cross-sectional study. The study sample comprised 312 women, who met the inclusion criteria of the study. The Descriptive Characteristics Form, Prenatal Breastfeeding Self-Efficacy Scale, and the Postnatal Interview Form were used. Data analysis was performed using descriptive statistics, Mann-Whitney U test, Kruskal-Wallis test, Chi-square test, and Bonferroni test for multiple comparisons ($p < 0.05$).

Results: The mean Prenatal Breastfeeding Self-Efficacy Scale total score of the women was $74,11 \pm 12,39$ (minimum-maximum: 19,00-95,00). Among the subscale scores of the Prenatal Breastfeeding Self-Efficacy Scale, the highest was the "desire" subscale score, which was $39,05 \pm 5,85$. In the 2nd month after birth, the rate of mothers who were exclusively breastfeeding their babies was 87.5% ($n=273$). There was no significant difference in terms of mean Prenatal Breastfeeding Self-Efficacy Scale scores between women who exclusive breastfeeding their babies in the second month and women who did non-exclusive breastfeeding ($p=0,14$). The mean Prenatal Breastfeeding Self-Efficacy Scale score of women who exclusively breastfeed their babies in the second month was $71,00 \pm 11,63$. The mean Prenatal Breastfeeding Self-Efficacy Scale scores of women who had previous breastfeeding experience ($p=0.003$) were significantly higher. Statistically significant differences were found in a type of infant nutrition between the age ($p=0.023$) and income ($p=0.036$) of women.

Conclusion: The study showed that prenatal breastfeeding self-efficacy was not a decisive factor for exclusive breastfeeding in the second month after birth. Women who did not exclusively breastfeed their babies in the 2nd month postpartum had lower PBSS scores. In addition, , women who already have experience with breastfeeding have higher breastfeeding self-efficacy. Therefore, midwives and nurses should encourage and support women to breastfeed. Further studies are needed to determine whether prenatal breastfeeding self-efficacy is related to breastfeeding behavior. [*Ethiop. J. Health Dev.* 2024; 38(3): 00-00]

Keywords: Breastfeeding, mother's milk, postpartum period, self-efficacy

Introduction

Mother's milk is a special food that proved to be superior to other foods, suitable for infants' needs, easily digestible, able to maintain the growth and development of infants at the appropriate rate, and has high bioavailability (1, 2). It provides infants with all the nutrients they need and supports their normal development. The healthiest way to give mother's milk to infants is breastfeeding (3). Therefore, the World Health Organization (WHO) recommends that infants should only be fed with their mother's milk for the first six months of their lives without water, any other fluids, or food and that breastfeeding should be maintained until the age of two years or older together with additional food (4).

One of the factors effective in the initiation and maintenance of breastfeeding is perceived breastfeeding-related self-efficacy(5). This perception shows whether a mother will breastfeed her baby, her opinions about breastfeeding, and her skills to cope with emotional problems she will face during breastfeeding (6). It has been reported in the literature that maintenance of effective breastfeeding from the first postpartum week till the fourth postpartum week

(7, 8, 9), the eighth postpartum week (10), the twelfth postpartum week (11), and the sixth postpartum month (12, 13) is related to breastfeeding self-efficacy.

According to data from Turkey Demographic and Health Survey (TDHS) in 2018, 59,0% of infants have exclusive breastfeeding (EBF) in the 1st month of their lives, and 45,0% and 14,0% of infants continue to have EBF in the 2nd-3rd and 4th-5th months of their lives respectively (14). The rate of EBF in Turkey gradually decreases two months after birth. It is striking that the rate of breastfeeding decreases in infants aged 2-3 months compared to those aged one month old. This situation appears to be similar in other countries (15, 16, 17, 18, 19, 20, 21). However, no research similar to this subject has been found.

Therefore, the present study aimed to determine the role of prenatal breastfeeding self-efficacy in exclusive breastfeeding in the second -month postpartum in Turkey.

¹ Neonatal Intensive Care Unit, Pamukkale University Hospitals, 20000 Denizli, TURKEY

² Midwifery Department, Faculty of Health Sciences, Bitlis Eren University, Bitlis, TURKEY

*Corresponding Author E-mail: hazarhale@gmail.com

Material and methods***Study design and settings***

This research is an analytical, cross-sectional type that was conducted in Denizli State Hospital and Pamukkale University Health Research and Practice Center in the city of Denizli, Turkey.

The study population comprised 2295 pregnant women. Using G-power version 3.1.9.7 (22), the sample size was determined based on a t-test. When the standard error was considered as (α) 0.05 and the confidence interval as 80% in the power analysis for the study sample (23), the sample size calculated was 270. However, considering that 30% of the sample could be lost, the total sample size was calculated as 351. Of the 351 participants, 39 were excluded due to incomplete and/or duplicate responses. Therefore, the study consisted of 312 participants. This sample size was achieved by using the convenience sampling method. The inclusion criteria were to be a primary school graduate at least and experience the last trimester of pregnancy (minimum 29th gestational week) (the ideal period for pregnant women to consider breastfeeding their babies is the last trimester), and the exclusion criterion was the diagnosis of a mental disease.

The study data were collected with the Descriptive Characteristics Form, Prenatal Breastfeeding Self-Efficacy Scale (PBSS), and Postnatal Interview Form. The Descriptive Characteristics Form was used in the study and developed by the researchers based on the literature, comprising 23 questions (23, 24, 25, 26, 27). The questions were about the socio-demographic, obstetric, and breastfeeding characteristics of the women. PBSS was developed by Wells et al. (28), and its Cronbach's alpha was reported to be 0,62 (28). The validity and reliability of PBSS for the Turkish population were tested by Uyar Hazar and Uzar Akça (29). PBSS is a self-report scale composed of 19 items about receiving knowledge and support for breastfeeding, coping with concerns about planning to breastfeed, expressing milk so that others can feed her baby, breastfeeding in front of others, discussing breastfeeding with others and deciding to breastfeed even when others do not approve of it (28). It is a five-point Likert scale (1: never sure, 2: somewhat sure, 3: fairly sure, 4: very sure, and 5: completely sure). The total score on the scale ranges from 19 to 95 (19: the lowest efficacy and 95: the highest efficacy). PBSS has four subscales: desire for breastfeeding (9 items: 5, 6, 7, 8, 13, 16, 17, 18, and 19), information collection about how to breastfeed (4 items: 1, 2, 3, and 4), breastfeeding in the presence of other people and the feeling of embarrassment about breastfeeding (3 items: 12, 14 and 15) and breastfeeding skills (3 items: 9, 10 and 11). Its Cronbach's alpha was reported to be 0,86 (29). The Postnatal Interview form was prepared by the researcher based on the literature, comprising 13 questions about the type of breastfeeding in the second postnatal month (24, 26). Infants must be at least two-months old to use this form. Pilot study was done for descriptive characteristics form on 10 pregnant women face-to-face in the outpatient clinics of Denizli State Hospital and Pamukkale University Health Research

and Practice Center in the city of Denizli, Turkey, and did not require any changes in the form. These pregnant women were not included in the study.

Data collection

The women presenting to the outpatient clinics and fulfilling the inclusion criteria were informed about the aim and process of the study, and those who gave verbal or written informed consent were included in the study. Data were collected by interviewing in a private room in the hospital. After obtaining informed consent, the researcher read the questions in the descriptive characteristics form and marked the women's answers. It took 5-6 minutes to complete the form. Then the pregnant women were given information about PBSS and were asked to fill in the form. It took 20-25 minutes for the women to complete the scale. The women were informed that they would be phoned for an interview about the study at least two months after birth. The confidentiality of personal data was ensured by having women sign an 'Informed Volunteer Consent Form'. At this interview, the postnatal interview form, created to reveal the type of infant feeding, was filled in. The researcher read the questions and asked the women for their responses on the phone. It lasted 5-6 minutes to complete the form. Data collection was performed between January 1, 2015, and December 30, 2015.

Statistical analysis

Research data was analyzed by using the Statistical Package Program for Social Sciences version 18.0 (PASW Inc., Chicago IL. USA) and Windows XP. Descriptive statistics (minimum, maximum, mean, and standard deviation) were utilized to analyze PBSS and Its Subscales. Mann-Whitney U test was used for abnormally distributed data to determine the significance of the difference between the two groups. To compare more than two groups, the Kruskal-Wallis test was used for unevenly distributed data. Chi-square analysis was used to compare categorical variables. Bonferroni multiple comparisons test was used to determine which group caused the significance. The statistical significance was set at $p < 0.05$.

Ethical considerations

In order to use it in the study, permission was obtained from Uyar Hazar and Uzar Akça (29), who adapted the scale to Turkish. Local Ethics Committee approval (Ethical approval code: 2014/445-6) was obtained from Non-Interventional Research at Aydın Adnan Menderes University Medical School for the study. The study was performed per the ethical standards specified in the 1964 Declaration of Helsinki and its later amendments (30). All pregnant women recruited to the study were informed of the purpose and content of the study and their right to refuse at any time. . Willing women obtained verbal or written informed consent. Interviews were conducted in a separate room in the hospital that protected their privacy.

Results

The research started with 351 participants, and due to 39 incomplete and/or duplicate responses, the data from 312 participants were used to analyze in the

study. The mean age of pregnant women is 27.14 ± 5.48 years, and 85.9% of them are in the 20-35 age group. 32.1% of the women in the study are secondary school graduates, 84.0% have a moderate level of financial status, 75.6% are housewives, and 89.1% have social security. The average number of pregnancies of the women was 2.14 ± 1.17 , the average number of births was 0.90 ± 0.94 (primiparous %60.2, multiparous (max=5) %39.8), the average number of living children was 0.87 ± 0.92 . A ratio of 84.3% of women had a planned pregnancy, and 87.8% had a wanted pregnancy.

In the 2nd month after birth, while 87.5% of mothers were feeding their babies exclusively with breast milk, 7.4% were breastfeeding with complementary foods (formula, water, rice flour, etc.), and 5.1% stated that they fed them with formula. The mean PBSS total score of the women was $74,11 \pm 12,39$ (minimum-maximum: 19,00-95,00). The score of "desires" for the

breastfeeding subscale, which was the highest score of all scores of subscales of PBSS, was $39,05 \pm 5,85$. In the 2nd month after birth, the PBSS scores of women who did EBF their babies were $71,00 \pm 11,63$ and were higher than those who were non-EBF. There was no significant difference in terms of mean PBSS scores between women who EBF their babies in the second month and women who did non-EBF ($p=0,14$) (Table 1). A significant difference was found in the PBSS score between those who had previous breastfeeding experience and those who did not ($p=0,003$) (Table 2). Statistically significant differences were found in a type of infant nutrition between the age ($p=0,023$) and income ($p=0,036$) of women. In further analysis, it was determined that the difference between age groups was caused by women in the 20-35 group and women who perceived the difference in income status as medium ($p<0,05$) (Table 3).

Table 1. Women's breastfeeding status in the 2nd month after birth and PBSS scores

Breastfeeding status		
	N	%
EBF	273	87,5
Breastfeeding and supplementary food together (Formula, water, rice flour, etc..)	23	7,4
Non-breastfeeding (Formula)	16	5,1
PBSS and Its Subscales Scores		
	Mean \pm SD	Minimum-Maximum
Total	74,11 \pm 12,39	19,00-95,00
Desires	39,05 \pm 5,85	9,00-45,00
Information collection	14,80 \pm 3,73	4,00-20,00
Breastfeeding in the presence of other people	10,30 \pm 3,49	3,00-15,00
Skills	9,94 \pm 3,38	3,00-15,00
The relationship between women's PBSS scores and the baby's feeding style in the 2nd month after birth		
Breastfeeding status	PBSS scores	Z / P
EBF	71,00 \pm 11,63	
Non- EBF	68,00 \pm 13,46	-1,466 / 0,14

PBSS – Prenatal Breastfeeding Self-Efficacy Scale, EBF – Exclusive Breastfeeding, SD – Standard Deviation, Z – Mann Whitney-U

Table 2. The comparison of sociodemographic characteristics and features of breastfeeding after the current birth with the scores on PBSS (n=312)

Sociodemographic characteristics	PBSS score (Mean \pm SD)	X ² /Z	P
Age (years)*			
16-19	71,16 \pm 13,24		
20-35	74,18 \pm 12,32	1,147	0,56
36-42	75,42 \pm 12,72		
Education*			
Primary school	72,62 \pm 12,76		
Secondary school	73,36 \pm 11,42		
High school	73,55 \pm 13,17	15,950	0,001
University	81,27 \pm 9,97		
Income*			
Low	74,28 \pm 11,56		
Moderate	73,96 \pm 12,54	1,499	0,47
High	81,75 \pm 11,95		
Employment status**			
Unemployed (Housewife)	72,99 \pm 12,49		
Employed	77,57 \pm 11,46	-2,876	0,004

Health insurance**			
No	69,29±12,12	-2,287	0,022
Yes	74,70±12,32		
Breastfeeding characteristics	PBSS score (Mean±SD)	X ² /Z	P
Prior breastfeeding experience**			
No (n=182)	71,75±12,38	-3,014	0,003
Yes (n=130)	75,79±12,15		
Time of first breastfeeding (hours)*			
1 st (n=28)	71,00±10,61	-0,867	0,386
Other (2 nd , 3 rd -12 th , 24 th , 48 th or 72 nd) (n=284)	71,00±12,03		
Giving food other than mother's milk on the first three days after birth**			
No (n=208)	75,12±11,85	-1,832	0,06
Yes (n=104)	72,08±13,22		

PBSS – Prenatal Breastfeeding Self-Efficacy Scale, SD – standard deviation, *X² – Kruskal Wallis-H, **Z – Mann Whitney-U, Note – Bold indicates statistical significance at p<0.05.

Table 3. Comparison of sociodemographic and obstetric characteristics according to EBF and non-EBF status

Socio-demographic and obstetric features	Type of infant nutrition Baby's feeding style in the 2nd month after birth				X ²	P
	EBF (n=273)		Non- EBF (n=39)			
	n	%	n	%		
Age (years)						
16-19	12	66,7	6	33,3		
20-35	238	88,8	30	11,2	7,58	0,023
36-42	23	88,5	3	11,5		
Educational status						
Primary school	82	90,1	9	9,9		
Secondary school	88	88,0	12	12,0	1,87	0,59
High school	71	83,5	14	16,5		
University	32	88,9	4	11,1		
Income [†]						
Low	38	82,6	8	17,4		
Moderate	233	88,9	29	11,1	6,64	0,036
High	2	50,0	2	50,0		
Employment status						
Unemployed (Housewife)	205	86,9	31	13,1	0,35	0,55
Employed	68	89,5	8	10,5		
Health insurance						
No	243	87,4	35	12,6	0,01	1,00
Yes	30	88,2	4	11,8		
Having prior experience						
No	109	83,8	21	16,2	2,72	0,09
Yes	164	90,1	18	9,9		
Number of live children						
1	102	91,9	9	8,1		
2-3	62	86,1	10	13,9	1,81	0,40
4-5	2	100,0	0	0,0		
Wanted pregnancy						
No	36	94,7	2	5,3	2,07	0,19
Yes	237	86,5	37	13,5		

EBF – Exclusive Breastfeeding, X² – Chi-square analysis

Discussion

The present study investigated the role of prenatal breastfeeding self-efficacy in EBF in the second - month postpartum and revealed important data in terms of forming possible midwifery and nursing interventions. As a result of the analysis, it was determined that the majority of the mothers participating in the study fed their babies EBF in the second month after birth, and almost all of them were

breastfed. As a result, it is reported that EBF rates decrease in the second month after birth. The decrease in EBF rates seen in the 2nd month after birth in Turkey is also seen in other countries. (14, 15, 16, 17, 18, 19, 20, 21). It is thought that it is not a coincidence that the results of the studies were similar. In this study, we examined whether the PBSS score was related to the decrease in EBF rates in the second month after birth. The PBSS scores of women who did

EBF their babies in the 2nd month after birth were higher than those who had non-EBF babies. Moreover, we found no difference between breastfeeding self-efficacy and EBF in the second postpartum month. We thought this might be due to the low sample size. However, we continue to ask, "What is the underlying reason for the decrease in EBF rates two months after birth?"

The mean PBSS total score of the women was found to be high. This value was 72.32 ± 13.36 in the study of Piñero-Albero et al. (23) and 75.35 ± 19.51 in the study of Wells et al. (28). The data obtained in Turkey are similar to the results of the studies in Spain (23) and Atlanta-USA (28). This is an important result in terms of revealing the similarity of self-efficacy in breastfeeding, regardless of socio-cultural differences. The "skills" subscale, which has the lowest mean score in the study, realistically reminds women of the responsibilities of midwives and nurses in providing breastfeeding support.

In the present study, it is observed that the PBSS score of women who are university-educated, employed, and have health insurance increases significantly, and this is considered a desired positive result. On the other hand, women with previous breastfeeding experience have higher PBSS scores than those without breastfeeding experience. Similarly, Wells et al. (28) reported that women experienced in breastfeeding received higher scores on PBSS. However, Piñero-Albero et al. (23) discovered no difference in PBSS scores between women with breastfeeding experience and those without breastfeeding experience. According to the social cognitive theory, as a particular behavior is practiced, self-efficacy related to that behavior increases. This theory emphasizes outcomes of practiced behavior, i.e., improvement of breastfeeding-related self-efficacy as a result of breastfeeding experiences.

The WHO recommends that babies be exclusively breastfed for the first 6 months (31). In this study, it was seen that maternal age had an impact on the type of nutrition of babies (EBF or Non-EBF). It is remarkable and significant that this result is not supported by the literature (32, 33, 34, 35, 36). Because the baby's type of nutrition should not be affected by the mother's age, the correct thing is that the baby should be fed only breast milk for the first six months, whether the mother is 20 or 40. Therefore, this result is an undesirable and not positive outcome.

On the other hand, the number of people breastfeeding in the first hour after birth was found to be quite low. However, there was no difference between the PBSS scores of those who breastfed at the 1st hour and those who breastfed at other hours. It was thought that "Is it because they could not start breastfeeding early? Breastfeeding rates were decreasing in the second month after birth." Additionally, the number of people breastfeeding in the first hour after birth was quite low, and the number of people giving food other than breast milk in the first three days was quite high. WHO recommends that babies be breastfed and not given any

nutrients, including water, other than breast milk within the first hour after birth (31). However, there was no difference between the PBSS scores of those who breastfed at the first hour and those who breastfed at other hours and between those who gave nutrients other than breast milk and those who did not in the first three days after birth. It was thought, "Is it because they could not start breastfeeding early and gave nutrients other than breast milk? Breastfeeding rates decreased in the second month after birth."

It was observed that the mother's income level also had an impact on the type of infants' nutrition (EBF or Non-EBF). This result is an undesirable finding, as is the case with the age variable, and is not supported by the literature too (32, 33, 34, 35, 36, 37). In other words, regardless of the mother's income level, she should feed her baby only with breast milk for the first six months. On the other hand, the fact that the mother's education level, employment status, health insurance, previous experience, number of living children, and desired pregnancy status do not affect the type of infants' nutrition (EBF or Non-EBF) is a desired positive result and is supported by the literature too (32, 33, 34, 35, 36, 37, 38, 39). In addition, there were both young (16-19 years old) mothers in the sample, and more than half of the mothers were primiparous. Most of them did not breastfeed after the second month, perhaps because it was their first child.

When examined through the data set, after the age of 35 and as education and income levels increase, the number of women who EBF their babies' decreases. However, as the number of women who do not work (housewives), and lack health insurance, the number of women who EBF their babies increases. Even if it is a requirement of economic policy, it is a positive result that they are required to implement the type of infant nutrition correctly.

Strengths and limitations

Part of the data was collected using the PBSS, a self-report instrument. Therefore, the reliability of the data is limited by the information provided by the participants. However, the women were willing to provide information about their EBF and the researcher was extremely careful in collecting the data. This can be seen as a strength of the present study. This study can only be generalized to the sample of patients for whom data were collected at the specified week of gestational.

Conclusion

This study aimed to explain whether breastfeeding self-efficacy during pregnancy is a determinant of the baby's EBF in the second month after birth. The present study reports that prenatal breastfeeding self-efficacy has no relation with EBF in the second postpartum month. In addition, women who have prior breastfeeding experience have higher breastfeeding self-efficacy. In order for women to have higher breastfeeding self-efficacy, midwives and nurses should increase their education and support to women about breastfeeding. Since prior breastfeeding

experiences enhance breastfeeding self-efficacy, midwives and nurses should encourage women to breastfeed, give them consultancy for breastfeeding, and teach them how to cope with breastfeeding-related problems to increase their potential for successful breastfeeding. Further studies are needed to determine whether prenatal breastfeeding self-efficacy is related to breastfeeding behavior.

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¹ Neonatal Intensive Care Unit, Pamukkale University Hospitals, 20000 Denizli, TURKEY

² Midwifery Department, Faculty of Health Sciences, Bitlis Eren University, Bitlis, TURKEY

***Corresponding Author E-mail:** hazarhale@gmail.com