ORIGINAL RESEARCH ARTICLE

The effects of breastfeeding education provided to family members supporting mothers on breastfeeding parameters

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Abstract

This randomized controlled experimental study was conducted between January 1, 2021, and April 30, 2022, at a state hospital in Konya, Turkey. The study sample comprised 133 family members who provided support to their mothers during the postpartum period They were divided into 67 participants in the experimental (Those who received breastfeeding education) group and 66 in the control (Those who did not receive breastfeeding education)group. These mothers received routine breastfeeding counseling at the hospital as part of standard care for both groups. Family members of the mothers in the experimental group received education on breastfeeding. The Bristol Breastfeeding Assessment Tool scores of mothers in the experimental group were significantly higher before discharge (p = .001). Post-discharge the Iowa Infant Feeding Attitude Scale of scores of mothers (p = .007) and family members (p = .0001) in the experimental group were significantly higher. The PBSES scores of mothers in the experimental group were higher than the control group (p = .001). (RTC number: NCT06119828). These findings indicate that breastfeeding education provided to family members during the postpartum period has a positive impact on maternal breastfeeding outcomes and attitudes, emphasizing the importance of involving the family in breastfeeding support interventions. *(Afr J Reprod Health 2025; 29 [5]: 103-119).*

Keywords: breastfeeding, family member, education, midwifery

Résumé

Cette étude expérimentale contrôlée et randomisée a été menée entre le 1er janvier 2021 et le 30 avril 2022 dans un hôpital public de Konya, en Turquie. L'échantillon de l'étude comprenait 133 membres de la famille qui ont apporté leur soutien à leur mère pendant la période postnatale. Elles ont été réparties en 67 participantes dans le groupe expérimental (celles qui ont reçu une éducation à l'allaitement) et 66 dans le groupe de contrôle (celles qui n'ont pas reçu d'éducation à l'allaitement). Ces mères ont reçu des conseils de routine en matière d'allaitement à l'hôpital dans le cadre des soins standard pour les deux groupes. Les membres de la famille des mères du groupe expérimental ont reçu une formation sur l'allaitement. Les scores du Bristol Breastfeeding Assessment Tool des mères du groupe expérimental étaient significativement plus élevés avant la sortie de l'hôpital (p = .001). Après la sortie de l'hôpital, les scores de l'Iowa Infant Feeding Attitude Scale des mères (p = 0,007) et des membres de la famille (p = 0,0001) du groupe expérimental étaient significativement plus élevés. Les scores PBSES des mères du groupe expérimental étaient plus élevés que ceux du groupe témoin (p = .001). (Numéro RTC : NCT06119828). Ces résultats indiquent que l'éducation à l'allaitement dispensée aux membres de la famille pendant la période postnatale a un impact positif sur les résultats et les attitudes des mères en matière d'allaitement, soulignant l'importance d'impliquer la famille dans les interventions de soutien à l'allaitement. *(Afr J Reprod Health 2025; 29 [5]: 103-119).*

Mots-clés: allaitement, membre de la famille, éducation, sage-femme

Introduction

Breastfeeding and breast milk are crucial for protecting children's health and ensuring their survival.[1,2] Breast milk is considered the ideal infant food.[3]

Therefore, the United Nations Children's Fund (UNICEF) and the World Health Organization (WHO) recommend exclusive breastfeeding for the first six months of life. They also advise continuing breastfeeding along with complementary foods up to two years of age and beyond.[1,2,4] Globally, between 2015 and 2021, the rate of initiating breastfeeding within the first hour after birth was 47%, the rate of exclusive breastfeeding for the first six months was 48%, the

rate of continued breastfeeding at one year was 70%, and the rate of continued breastfeeding at two years was 45%.[3] The prevalence of breastfeeding initiation varies across regions, with rates of 34% in the Middle East and North Africa, 64% in East and Southern Africa, and 70% in Eastern Europe and Central Asia.[5] Among infants aged 0-5 months, 26% in North America and 57% in South Asia are exclusively breastfed.[5] According to recent data from the Turkey Demographic and Health Survey [6], 71% of infants in Turkey are breastfed within the first hour after birth. However, the rates of exclusive breastfeeding decline significantly as infants age, with 59% at 0-1 months, 45% at 2-3 months, and just 14% at 4-5 months. Despite WHO and UNICEF's recommendations against the use of bottles, %58 of infants aged 0-23 months in Turkey are bottle-fed.[1,2,6]

Despite supportive breastfeeding programs worldwide and in Turkey, the rates of exclusive breastfeeding for the first six months remain below the desired levels. Factors such as mother and infant-specific characteristics, intersecting beliefs and perceptions, social support, and perceived breastfeeding competence influence the initiation and continuation of breastfeeding.[7-10]

Breastfeeding is an experience influenced by accumulated knowledge and observations that can be transmitted from mothers to daughters.[8] Family members who support their mothers during the postpartum period play a central role in fostering awareness and motivation for breastfeeding[8]. Karmacharya et al. reported that grandmothers believed that breastfeeding should begin within an hour of birth (71%) and that colostrum should be provided to the baby (83%).[8] Ferreira *et al*. (2018) showed that 40% of grandmothers believed breast milk was insufficient.[7] Wagner et al. (2019) found that mothers who received childcare advice from their own mothers had lower breastfeeding initiation rates, indicating that grandmothers' breastfeeding practices and advice negatively impacted their mothers' decisions.[9]

In Turkey, it is a common practice for family members to support mothers during the postpartum period. Various family members, particularly grandmothers, support the mother during puerperium. The cultural beliefs, knowledge, attitudes, opinions, and practices of family members supporting the mother during this period can significantly influence the initiation, continuation, and cessation of breastfeeding, thereby positively or negatively affecting the breastfeeding process.[9] This situation suggests that family members who support their mothers during the postpartum period should be included in breastfeeding education programs during pregnancy, childbirth, and the postpartum period.[9,11] A study by Lutfiani *et al*. (2020), which investigated the impact of education provided to family members on mothers' breastfeeding self-efficacy, determined that such education significantly enhances mothers' breastfeeding self-efficacy.[12] A literature review revealed a lack of studies specifically examining the effect of breastfeeding education given to family members supporting the mother on breastfeeding parameters. This study investigated the impact of educating family members who support their mothers during the postpartum period on various breastfeeding parameters. These parameters included the initiation and continuation of breastfeeding, breastfeeding skills, breastfeeding self-efficacy, and breastfeeding attitudes. The findings of this study are expected to contribute to addressing the challenges of initiating and sustaining breastfeeding, particularly in middle- and low-income countries.

Methods

Study design

This randomized controlled experimental study was conducted to determine the effect of breastfeeding education provided to family members to support mothers during the postpartum period on breastfeeding parameters.

Setting and sample

The research was conducted between January 1, 2021, and April 30, 2022, at the Women's and Children's Hospital under the Konya Provincial Health Directorate. The data collection process was prolonged because of the challenges posed by the COVID-19 pandemic. Institutional Review Board (IRB) approval was extended through necessary correspondence to accommodate the extended timeline. The study involved pregnant women and

their babies who visited the hospital's prenatal clinic and the family members who supported them during the postpartum period.

The inclusion criteria for the mothers were as follows: receiving support from a family member during the postpartum period, having an uncomplicated pregnancy and birth history, not having multiple pregnancies, not giving birth before the 37th week of pregnancy, no disease that would prevent breastfeeding during the postpartum period (for example, undergoing chemotherapy, having active tuberculosis, using medications that prevent breastfeeding), spending the pregnancy period and the first month postpartum in the study area, being literate, having no communication problems, and being either a primiparous or a multiparous mother with previous breastfeeding problems. Moreover, the baby needed to be free from any health problems that could prevent breastfeeding. For family members supporting the mother, the inclusion criteria were as follows: spending at least one hour a day with the mother at least five days a week during the postpartum period, being able to communicate in Turkish, being literate, and residing in the same city where the research data were collected. Mothers who, for any reason, no longer met the study criteria after inclusion (for example, experiencing an interventional birth or a baby requiring hospitalization in the neonatal intensive care unit) were excluded from the study.

The study population consisted of pregnant women who gave birth at the specified hospital between January 1, 2021, and April 30, 2022, who met the sampling criteria, along with the family members who would support them during the postpartum period. Power analysis was performed using the G-power (3.1.9.7) program to calculate the sample size. As no similar study was found in the literature, Cohen's ANOVA test was used for effect size classification.[13] According to Cohen, the power of a study is expressed as 1-β (β=probability of Type II error), and generally, studies should have a power of %80. Based on Cohen's effect size coefficients, it was assumed that evaluations between the two independent groups would have a medium effect size (d=0.5).[13] With α=0.05 and β=0.20, the calculation indicated that each group should have at least 64 participants. Considering the potential losses during the data collection process, the sample size was increased by 20%, and it was decided to include at least 77 participants in each group.

During the data collection period, 252 mothers were assessed for eligibility. A total of 90 mothers were excluded: 77 did not meet the inclusion criteria, 8 had babies admitted to the neonatal intensive care unit, and 5 mothers themselves declined to participate. In addition, 8 family members who did not agree to participate in the study were excluded. Consequently, 154 family members were randomized into two groups using computer-assisted randomization (https://www.random.org): 77 in the experimental group and 77 in the control group. However, 10 samples from the experimental group and 11 from the control group could not complete the data collection process and were excluded from the study. The final analysis was performed with all 133 participants, including 67 in the experimental (Those who received breastfeeding education) group and 66 in the control (Those who did not receive breastfeeding education) group, who provided postpartum support to the mothers. The CONSORT Flow Diagram was prepared following the CONSORT-SPI 2018 guidelines.[14]

Variables of the study

Independent variables: The status of breastfeeding education received by family members.

Dependent variables: Mothers' demographic and descriptive characteristics, mothers' rates of initiating breastfeeding, mothers' rates of exclusive breastfeeding within the first month, mothers' Bristol Breastfeeding Assessment Tool scores, mothers' and family members' Iowa Infant Feeding Attitude Scale scores, and mothers' Postpartum Breastfeeding Self-Efficacy Scale scores.

Hypotheses of the study

Breastfeeding education provided to family members will decrease the rate of giving food other than breast milk on the first postpartum day (H_1), increase the rate of exclusive breastfeeding at one month (H_2), increase BBAT scores (H_3), increase the scores mothers receive on the Iowa Infant Feeding Attitude Scale (H_4), increase the IIFAS

scores of family members (H_5), and increase the PBSES scores of mothers (H_6).

Data collection tools

Descriptive information form for mothers

This form, prepared by the researchers based on the literature[15-17], includes 20 questions covering mothers' sociodemographic characteristics (e.g., age, education level, occupation, health insurance, family type), their opinions on breastfeeding and supplementary feeding, and information about the mother and baby after childbirth. Expert opinion was obtained prior to administering the form. The form was administered in the delivery room to pregnant women admitted to the hospital to give birth and who wished to participate in the study.

Descriptive ınformation form for family members

This form was prepared by researchers based on the literatüre.[7,8,18] The form consisted of 13 questions, and expert opinions were obtained before administration. It was administered to family members who would support the mother during the postpartum period while the mother was in the delivery room.

Bristol breastfeeding assessment tool (BBAT)

The Bristol Breastfeeding Assessment Tool (BBAT) was developed by Jenny Ingram in 2014 (Cronbach's alpha value of 0.68), and its Turkish adaptation was performed by Dolgun et al. (2018) with a Cronbach's alpha value of 0.77.[19,20] The scale is a Likert-type tool consisting of 4 items: "positioning," "attachment," "sucking," and "swallowing." Each item is scored between 0 and 2. The lowest possible score was 0, and the highest possible score was 8. Higher scores indicate effective breastfeeding.[20] In this study, the effectiveness of breastfeeding was evaluated using the BBAT. The assessment was conducted three times: during the first breastfeeding, at the first hour postpartum, and at the 24th hour postpartum for both the experimental and control group mothers. Cronbach's alpha value of the scale in this study was between 0.63 and 0.76.

Iowa ınfant feeding attitude scale (IIFAS)

De La Mora and Russell (1999) developed the Iowa Infant Feeding Attitude Scale (IIFAS) to assess women's attitudes toward breastfeeding, predict the choice of infant feeding methods, and estimate the duration of breastfeeding.[21] Ekşioğlu *et al*. established the validity and reliability of a Turkish were established by Ekşioğlu, Yeşil, and Çeber Turfan in 2016. The scale is a 5-point Likert-type scale, with responses ranging from 1 (strongly disagree) to 5 (strongly agree) across 17 items. Of these items, 9 reflected positive attitudes towards breastfeeding, whereas 8 reflected positive attitudes towards formula feeding. Items related to formula feeding were reverse scored (1=5, 2=4, 4=2, and 5=1). The total attitude score ranged from 17 (indicating a positive attitude toward bottle feeding) to 85 (indicating a positive attitude toward breastfeeding). The item score averages on the Iowa Infant Feeding Attitude Scale range from 2.03 to 4.63. When examining the relationship between each item and the overall scale, correlation coefficients ranged from 0.06 (item 1) to 0.58 (item 15).[22] This scale was administered to both experimental and control group mothers and to the family members who would support them during the postpartum period, both before and after the educational intervention in the first month. In this study, the Cronbach's alpha of the scale ranged from 0.627 to 0.764.

The postnatal breastfeeding self-efficacy scale (PBSES)

The Breastfeeding Self-Efficacy Scale, developed by Dennis in 1999, consists of 33 items. In 2003, it was shortened to a 14-item scale, the Postnatal Breastfeeding Self-Efficacy Scale (PBSES).[23] The Turkish validity and reliability of the short form of the scale were determined by Aluş Tokat, Okumuş, and Dennis, who found Cronbach's alpha value of 0.86, indicating its suitability for Turkish culture.[24] This scale was administered to both experimental and control group mothers via telephone interviews

during the first month. In this study, the Cronbach's alpha value of the scale was 0.76.

Postpartum feeding checklist

The Postpartum Feeding Checklist was prepared by researchers based on the literatüre.[15-17] This form was used to monitor the breastfeeding and feeding status of the babies for one month. Expert opinion was obtained prior to administering the form. It was administered to both the experimental and control group mothers through telephone interviews in the first month.

Data collection

Study steps

Informing participants about the study

Pregnant women and their families arriving at the delivery room were introduced to the researchers and assessed for eligibility based on inclusion and exclusion criteria. Those who met the inclusion criteria were informed about the study and signed informed consent forms. Mothers who met the inclusion criteria were identified after enlisting family members who would help provide support during the postpartum period. A total of 154 family members eligible for inclusion and agreed to participate were enrolled (77 in the experimental group and 77 in the control group). All participants were asked to contact research assistants with questions or problems. Of these participants, 10 from the experimental group and 11 from the control group were excluded from the study due to withdrawal. Therefore, 133 participants remained in the final analysis, of which 67 were in the experimental group and 66 in the control group, and were included because their data collection processes were completed. A sample of mothers who met the inclusion criteria was invited to participate in the study, culminating in the approval of the study. Family members who provided the necessary assistance to the mothers during the postnatal period were then evaluated. Through computer-assisted randomization, volunteers who qualified for inclusion and were willing to participate were randomly allocated to either experiment or control group through www.random.org.

Steps for the experimental group

During the initial meeting prior to the training, information about family members and mothers was collected using an Information Form. Subsequently, the Iowa Infant Feeding Attitude Scale (IIFAS) was administered to both the family members and mothers. The initial breastfeeding of mothers in the delivery room was evaluated using the BBAT. One hour after delivery, a 20-25 minute breastfeeding education session was provided to the family members. A breastfeeding education brochure was provided to the family members. After education, The IIFAS was administered to mothers and family members. The Breastfeeding Behavior Assessment Tool (BBAT) was administered to the mothers within the first hour after childbirth. Before discharge, both the BBAT and Iowa Infant Feeding Attitude Scale (IIFAS) were administered to the mothers, while the IIFAS was administered to family members. On the 15th postpartum day, a follow-up reminder about breastfeeding education was sent to the family member via phone (10 minutes). The IIFAS was administered to the mother and family members at the end of the first postpartum month. The Breastfeeding Self-Efficacy Scale (BSES) was administered via telephone interviews to assess the breastfeeding self-efficacy of the mothers, whereas the Breastfeeding Control Checklist was used to evaluate the breastfeeding status of the infants.

Content of education provided to family members (the education was conducted in a single 20-25 minute session)

Family members were provided face-to-face breastfeeding education in the postpartum treatment room one day after delivery. Numerous studies have demonstrated that individual face-to-face education effectively enhances knowledge and awareness in adult education.[9-11] Based on this evidence, face-to-face individual education is preferred for training family members. Brochures were provided to the family members following the training session to aid retention. Additionally, a

follow-up reinforcement session was conducted on day 15 through telephone interviews. A revolving chart was used for breastfeeding education. Before the training session, the information to be delivered was written as subheadings on sheets of paper and attached to a revolving chart. Each subheading is displayed on a separate page of the chart. During the session, education was provided to family members on each subheading. Once the topics on a page were discussed, the chart was turned on the next page. At the end of the session, family members' comprehension of information was assessed through questions. Unclear points were revisited or reinforced. The training session lasted approximately 25 minutes.

The educational content covered a range of topics, including the importance of breast milk, the mechanism of milk flow from the breast, the recommended duration and frequency of breastfeeding, breastfeeding positions, proper latch-on techniques, breastfeeding support during feeding, effective sucking, strategies to increase milk supply, foods that enhance milk production, factors that positively and negatively influence breastfeeding, the impact of pacifier and bottle use on breastfeeding, signs indicating the baby's fullness, the role of breastfeeding positions in preventing nipple cracks, and addressing common breastfeeding myths. Additionally, the session emphasized the influence of family members' support on mothers' breastfeeding success. At the end of the session, a breastfeeding brochure encompassing educational content was provided to family members.

Steps for the control group

No breastfeeding education was provided to the family members of the control group. Data on family members and mothers were collected during the initial meeting using an Information Form. Subsequently, the Iowa Infant Feeding Attitude Scale (IIFAS) was administered to both family members and mothers. The initial breastfeeding performance of mothers in the delivery room was assessed using the Breastfeeding Behavior Assessment Tool (BBAT). BBAT and IIFAS were also administered to the mothers, while IIFAS was administered to the family members one hour postpartum. Before discharge, the BBAT and IIFAS were re-administered to the mothers, and family members completed the IIFAS. At the end of the first month postpartum, the IIFAS was re-administered to both mothers and family members.

Additionally, the Breastfeeding Self-Efficacy Scale (BSES) was used to evaluate mothers' breastfeeding self-efficacy, and the Breastfeeding Control Checklist was employed to assess the breastfeeding status of infants; both were administered via telephone interviews.

The participants were assigned to the experimental and control groups by computer-assisted randomization through www.random.org. Family members were assigned numbers during enrollment, and participants with the following numbers were allocated to the experimental group: 69, 32, 124, 3, 36, 20, 96, 31, 100, 47, 6, 51, 34, 143, 94, 150, 62, 141, 71, 22, 137, 4, 88, 5, 26, 42, 127, 63, 61, 95, 8, 140, 57, 114, 79, 115, 132, 128, 12, 77, 52, 121, 153, 93, 23, 59, 135, 87, 92, 17, 35, 129, 2, 82, 76, 101, 44, 16, 10, 142, 27, 113, 37, 102, 122, 49, 151, 144, 90, 148, 145, 19, 83, 1, 25, 78, 74. Participants with the following numbers formed the control group: 11, 135, 93, 106, 42, 31, 54, 62, 48, 19, 69, 122, 149, 141, 147, 108, 41, 65, 24, 58, 81, 109, 104, 143, 89, 99, 46, 102, 140, 123, 131, 146, 59, 74, 52, 121, 61, 95, 119, 83, 15, 144, 27, 129, 45, 97, 114, 9, 28, 92, 36, 154, 49, 124, 130, 90, 91, 2, 70, 44, 137, 34, 35, 101, 116, 17, 85, 14, 73, 6, 115, 113, 60, 68, 117, 71, 7.

Ethical approvals

Necessary institutional permission and ethical committee approval were obtained to conduct the study (2019/706). Before collecting the research data, written and verbal informed consent was obtained from the participants according to the "Informed Voluntary Consent Form." Permission to use the "Iowa Infant Feeding Attitude Scale," "Bristol Breastfeeding Assessment Tool," and the "Postnatal Breastfeeding Self-Efficacy Scale" Postnatal Breastfeeding Self-Efficacy Scale were obtained from the authors. This study was registered with Clinical Trials (RTC number: NCT06119828).

Statistical analysis of the data

The data obtained in this study were analyzed using the Statistical Package for Social Sciences (SPSS) for Windows 25.0. Descriptive statistical methods (number, percentage, minimum-maximum values, mean, and standard deviation) were used to evaluate the data. A "Reliability Analysis" was performed to test the reliability of the scales. The scale's reliability and dimensions were examined using Cronbach's alpha. Scales with a Cronbach's alpha coefficient above 0.60 were considered reliable.

For the comparison of numerical descriptive characteristics and clinical indices between groups with a normal distribution, Student's t-test was used (e.g., mother's age, breastfeeding duration, family member's age, duration of exclusive breastfeeding). For the analysis of categorical descriptive characteristics with a normal distribution and the comparison of two dependent groups, chi-square tests (Pearson chi-square/Fisher exact test) were used (e.g., family member's education level, family member's breastfeeding status, family member's previous breastfeeding education, initiation of breastfeeding within the first hour after birth, provision of supplementary food on the first day in the hospital, and exclusive breastfeeding at one month). For comparisons involving more than two measurements, such as comparing variables over different time points, repeated measures analysis of variance (ANOVA) was used (for example, BBAT and IIFAS). When a significant difference was found, the Bonferroni test was used to determine the group causing the difference.

Results

Comparison of groups based on demographic and descriptive characteristics

When the experimental and control groups were compared in terms of demographic and descriptive characteristics that could affect breastfeeding parameters (e.g., mother's age, duration of exclusive breastfeeding for their own babies, duration of breastfeeding with supplementary foods, and previous breastfeeding education of family members), no statistically significant difference was found ($p > .05$) (Table 1).

Comparison of groups based on ınfant feeding practices

Comparing the time mothers began breastfeeding their babies across the groups, it was determined that all babies in both the experimental and control groups started breastfeeding within the first hour of birth. None of the mothers in either group provided food other than breast milk in the delivery room. However, when comparing the provision of other foods in the postpartum ward, it was found that no mothers in the experimental group provided additional food, whereas 7.6% (n=5) of mothers in the control group gave their babies Zamzam water and 4.5% (n=3) gave dates. A statistically significant difference was found between the groups in terms of providing other foods in the postpartum ward ($p = .013$) (Table 2). When comparing the feeding methods of the mothers in the postpartum period, it was observed that all mothers in the experimental group started exclusively breastfeeding their babies, while in the control group, 87.9% of the mothers exclusively breastfed and 12.1% (n=8) fed their babies with a combination of breast milk, water, and formula. A statistically significant difference was found between the groups in terms of feeding methods during the postpartum period ($p = .003$). When issues related to breastfeeding in the postpartum period were examined, it was noted that no mothers in the experimental group reported any breastfeeding issues, while in the control group, 6.1% (n=4) reported nipple soreness, and another 6.1% (n=4) reported that their milk supply was insufficient ($p = .165$). A statistically significant difference was found between the groups in terms of breastfeeding issues ($p = .013$). Regarding mothers' desire to continue breastfeeding, all mothers in the experimental group wished to continue breastfeeding, while in the control group, 90.9% (n=60) wished to continue, and 9.1% (n=6) were undecided. A statistically significant difference was found between the groups in terms of desire to continue breastfeeding ($p = .013$).

Table 1: Comparison of demographic and descriptive characteristics between the experimental and control groups (n=133)

Variables	Group	Min	Max	Mean	SD	Test Value	*p*
Mother's age	Experimental (n=67)	17.00	36.00	23.99	3.89	-0.40	.691
	Control (n=66)	18.00	36.00	24.03	4.57		
Duration of planned breastfeeding	Experimental (n=67)	0.00	24.00	18.39	9.41	-1.06	.289
	Control (n=66)	0.00	24.00	20.41	7.23		
Family member's age	Experimental (n=67)	20.00	59.00	44.90	10.59	-0.99	.319
	Control (n=66)	17.00	62.00	43.59	10.84		
Average duration of exclusive breastfeeding by family member (months)	Experimental (n=67)	0.00	6.00	3.34	1.90	-0.33	.739
	Control (n=66)	0.00	6.00	3.21	1.84		

Variables		Experimental Group (n=67)		Control Group (n=66)		X^2	*p*
		n	%	n	%		
	Mother-in-law	28	41.8	30	45.5		
	Sibling	12	17.9	10	15.2		
Family member's education level	Illiterate	7	10.4	3	4.5	4.00	.549
	Literate	4	6.0	5	7.6		
	Primary School	42	62.7	40	60.6		
	Middle School	7	10.4	9	13.6		
	High School	7	10.4	7	10.6		
	University	0	0.0	2	3.0		
Family member's breastfeeding status	Yes	54	80.6	55	83.3	0.17	.682
	No	13	19.4	11	16.7		
Family member's previous breastfeeding knowledge	Yes	15	22.4	22	33.3	1.98	.159
	No	52	77.6	44	66.7		

Student's *t*-Test (*t*); Chi-Square Test (χ^2); Summary statistics are presented as *mean ± standard deviation and median (minimum, maximum)* for numerical data and as *number (percentage)* for categorical data.

Table 2: Comparison of feeding methods of babies in the experimental and control groups during the postpartum period (n=133)

Variables		Experimental Group (n=67)		Control Group (n=66)		X^2	*p*
		n	%	n	%		
Time of initiating breastfeeding	Within the first hour after birth	67	100.0	66	100.0	-	-
Giving foods other than breast milk on the first postpartum day	Zamzam water	0	0.0	5	7.6	8.64	.013*
	Dates	0	0.0	3	4.5		
	No	67	100.0	58	87.9		
Feeding method in the first month	EBF**	67	100.0	58	87.9	8.64	.003*
	Breast milk+Water+Formula	0	0.0	8	12.1		
Bottle feeding	Yes	0	0.0	7	10.6	7.50	.006*
	No	67	100.0	59	89.4		
Pacifier use	Yes	2	3.0	6	9.1	2.19	.165

	No	65	97.0	60	90.9		
Experiencing	No problems	67	100.0	58	87.9	8.64	.013*
breastfeeding	Nipple soreness	0	0.0	4	6.1		
problems	Insufficient milk supply	0	0.0	4	6.1		
Desire to continue	Yes	67	100.0	60	90.9	6.38	.013*
breastfeeding	Undecided	0	0.0	6	9.1		

*$p <$ .05 ** EBF (Exclusive Breastfeeding) Chi-Square Test ($\chi 2$)

Table 3: Comparison of bristol breastfeeding assessment tool (bbat) scores between the experimental and control groups (n=133)

Variables	Group	Mean	SD	t-test	*p*
BBAT first breastfeeding	Experimental (n=67)	4.73	0.62	-2.91	.004*
	Control (n=66)	5.11	0.84		
BBAT 1st hour	Experimental (n=67)	4.82	0.94	0.71	.477
	Control (n=66)	4.71	0.82		
BBAT before discharge	Experimental (n=67)	6.67	1.03	5.81	.001*
	Control (n=66)	5.66	0.98		

Mixed Design ANOVA (*F*), Effect Size (η^2), Within-group comparisons, Between-group comparisons, Descriptive statistics are given as *mean ± standard deviation*. Bold sections indicate statistical significance ($p < .05$). *a>b*: Different letters in the same row indicate a statistically significant difference ($p < .05$).

Table 4: Comparison of Iowa ınfant feeding attitude scale (ıifas) scores between the experimental and control groups (n=133)

Variables	Group	Mean	SD	t-test	*p*
Mother's IIFAS Score					
Before education	Experimental (n=67)	60.42	8.01	-0.13	.897
	Control (n=66)	59.64	7.68		
After education (before discharge)	Experimental (n=67)	60.79	7.26	2.72	.007*
	Control (n=66)	58.85	6.99		
1 Month post-discharge	Experimental (n=67)	58.15	7.84	1.53	.128
	Control (n=66)	57.81	7.98		
Family Member's IIFAS Score					
Before education	Experimental (n=67)	58.87	9.06	0.66	.513
	Control (n=66)	57.89	7.97		
After education (before discharge)	Experimental (n=67)	59.61	7.44	1.29	.201
	Control (n=66)	57.89	7.97		
1 Month post-discharge	Experimental (n=67)	66.12	6.59	6.50	.001*
	Control (n=66)	57.89	7.97		

Mixed Design ANOVA (*F*), Etki Büyüklüğü (η^2), Within-group comparisons, Between-group comparisons, Descriptive statistics are given as *mean ± standard deviation*. Bold sections indicate statistical significance ($p < .05$). *a>b*: Different letters in the same row indicate a statistically significant difference ($p < .05$).

Table 5: Comparison of postnatal breastfeeding self-efficacy scale (pbses) scores of mothers in the experimental and control groups (1st month) (n=133)

Variables	Group	Mean	SD	t-test	*p*
Postnatal Breastfeeding	Experimental (n=67)	65.55	3.31	13.63	.001*
Self-Efficacy Scale Score	Control (n=66)	59.09	2.01		

Student's *t*-Test (*t*); Summary statistics are given as *mean ± standard deviation* and *median (minimum, maximum)* values.

Comparison of groups based on BBAT scores

The BBAT scores of mothers in the experimental group during the first breastfeeding session were lower than those of the control group, and the difference in BBAT scores between the groups during the first breastfeeding session was statistically significant (p =.004). There was no statistically significant difference in BBAT scores between the groups during the 1st hour (p > .05). However, when comparing the BBAT scores before discharge, a statistically significant difference was found (p = .001), with the experimental group mothers having higher BBAT scores than the control group mothers (Table 3).

Comparison of groups based on IIFAS scores of family members and mothers

There was no statistically significant difference in the IIFAS scores between the groups before education (at the first encounter) (p > .05). When comparing the IIFAS scores of mothers before discharge, a statistically significant difference was found between the groups (p = .007), with the experimental group mothers having higher IIFAS scores than the control group mothers. No statistically significant difference was found in the IIFAS scores of the mothers between the groups in the first month post-discharge (p > .05).

When comparing the IIFAS scores of family members who supported the mother in the postpartum period before education, no statistically significant difference was found between the groups (p > .05). Similarly, there was no statistically significant difference in the IIFAS scores of family members between groups after education (p>0,05). However, a statistically significant difference was found in the IIFAS scores of family members at the first month post-discharge (p = .001), with the family members in the experimental group having higher IIFAS scores than those in the control group (Table 4).

Comparison of groups based on mothers' postnatal PBSES scores

When comparing the mothers' Postnatal Breastfeeding Self-Efficacy Scale (PBSES) scores between the groups, it was found that the mothers in the experimental group had higher scores than those in the control group, which was statistically significant (p = .001) (Table 5)

Discussion

The hypotheses of this study posited that breastfeeding education provided to family members would reduce the rate of providing supplementary food on the first postpartum day, increase the rate of exclusive breastfeeding at one month, improve BBAT scores, enhance the scores on the Iowa Infant Feeding Attitude Scale for both mothers and family members and increase Postnatal Breastfeeding Self-Efficacy Scale scores for mothers.

Comparison of demographic and descriptive characteristics

The literature indicates that factors such as mother's education level, occupation, mode of delivery, and prenatal care can influence infant feeding practices.[25,26] Therefore, demographic and descriptive characteristics that could affect breastfeeding parameters were compared between the experimental and control groups. The groups were found to be similar in terms of these characteristics, including mothers' age, planned breastfeeding duration, family members' age, average duration of exclusive breastfeeding by family members, education level of family members, family members' breastfeeding experience, and previous breastfeeding knowledge (p > .05) (Table 1).

Comparison of ınfant feeding practices across groups

The results showed that all infants in both the experimental and control groups were breastfed within the first hour after birth, with no significant difference between the groups in terms of the timing of the first breastfeeding session (Table 2). In a randomized controlled trial by Gölbaşı *et al*. (2019), which included 388 women and examined the impact of breastfeeding counseling on breastfeeding behavior in the first six months, 60% of mothers in the experimental group and 50% of mothers in the control group breastfed their babies

within the first 30 minutes after birth.[27] According to Global Breastfeeding Scorecard (GBS) data, 47% of newborns started breastfeeding within the first hour of birth between 2015 and 2021.[3] These findings indicate that early breastfeeding initiation after birth is common.[3,6,28]

In this study, the breastfeeding initiation rate after birth was above the Turkish average.[6] This higher rate is thought to be due to the hospital where the data were collected (Baby-Friendly Hospital), where midwives encourage and support the early initiation of breastfeeding.

When comparing the groups in terms of giving food other than breast milk in the hospital on the first postpartum day, 7.6% of mothers in the control group gave Zamzam water, and 4.5% gave birth to their babies, while no mothers in the experimental group gave any food other than breast milk. The rate of providing other foods to babies in the hospital during the postpartum period was significantly higher in the control group ($p = .013$) (Table 2). These results support the H_1 hypothesis. A study by Yolda İlktaç *et al*. evaluating the growth, development, and feeding characteristics of 0-6-month-old infants reported that 12.5% of mothers gave Zamzam water and dates before breast milk.[29] In a study by Ahi *et al*., the rate of giving only dates before breast milk was 1.9%, and the rate of giving Zamzam water and dates together was 1.5%.[30] Turan et al. found that 30% of mothers gave dates, and 26% gave Zamzam water before breast milk. Some studies have shown a low rate of prelacteal feeding (giving dates and Zamzam water) before breast milk consumption, while others have shown a high rate.

Our study observed no prelacteal feeding in the experimental or control group of the delivery room. However, some mothers in the control group received zamzam water and dates to their babies in the postpartum ward. This behavior was thought to be related to the initiation of breastfeeding in the delivery room for both groups. It was concluded that giving food-like dates and Zamzam water to babies in the postpartum ward in the control group may have occurred because of the encouragement of parents and relatives. The absence of such foods in the experimental group was attributed to the awareness provided by the education provided to family members. No studies were found in the literature examining the provision of foods other than breast milk in the hospital environment during the postpartum ward period following the initial breastfeeding session.

When comparing the feeding methods of the mothers in the first month postpartum, it was found that all mothers in the experimental group exclusively breastfed their babies, while 87.9% of mothers in the control group exclusively breastfed, and 12.1% (n=8) fed their babies with a combination of breast milk, water, and formula. The rate of mothers giving foods other than breast milk in the control group during the first month postpartum was significantly higher ($p = .003$). These results confirm the H_2 hypothesis and suggest that the education provided to family members increased their awareness, thereby reducing the pressure on mothers to give other foods.

In a study examining intergenerational breastfeeding experiences, grandmothers were found to influence the initiation and duration of breastfeeding.[9] Another study examining the impact of social support and experiential learning from grandmothers on breastfeeding reported that grandmothers influence mothers' breastfeeding attitudes and behaviors.[31] Additionally, several studies investigating breastfeeding duration have found that family members significantly affect mothers' decisions to initiate and continue breastfeeding, increase the tendency to give other foods without medical indication, and negatively impact breastfeeding.[32,33] When comparing breastfeeding problems between the groups, mothers in the control group experienced more breastfeeding issues ($p = .013$). These results suggest that the support provided to family members may have increased the social support they offered to mothers, contributing to fewer breastfeeding problems. These findings align with national.[34-36] and international literature[31,37,38], which indicates that social support positively affects breastfeeding outcomes.

Comparison of BBAT scores between groups

No statistically significant difference was found when comparing the BBAT scores of mothers in the 1st hour between groups. However, the BBAT scores before discharge were higher in the group where family members received education ($p =$

.001) (Table 3). These results confirm the H_3 hypothesis, which posits that educating family members increases mothers' BBAT scores and demonstrates that breastfeeding education provided to family members contributes to mothers' breastfeeding success.

Although the literature shows that education given to mothers increases breastfeeding success[39,40], no studies have examined the impact of education provided to family members on mothers' breastfeeding success. BBAT scores increased over time in both the control and experimental groups during the first breastfeeding, at the 1st hour, and before discharge. This increase indicates that the mothers' breastfeeding skills improved over time in both groups. Additionally, the higher BBAT scores before discharge in the experimental group suggest that educating family members encouraged mothers to breastfeed more effectively, positively affecting breastfeeding. These valuable results highlight the positive impact of integrating family members into breastfeeding counseling.

A study in Taiwan examining the influence of sociodemographic factors on breastfeeding attitudes among women and their partners revealed that partners' breastfeeding attitudes positively influenced mothers' attitudes.[41] Positive breastfeeding attitudes among mothers have been reported to increase breastfeeding duration[42] A study examining the differences in maternal characteristics and their relationship with breastfeeding attitudes among primiparous mothers observed that mothers who exclusively breastfed their babies had higher breastfeeding attitude scores.[43] A study examining women's knowledge and attitudes towards breastfeeding during the postpartum period found that increased knowledge about breastfeeding positively affected their breastfeeding attitude scores.[44] Another study on attitudes affecting breastfeeding behaviors among breastfeeding mothers found that psychological, social, and cultural factors influence breastfeeding attitudes.[45] Abdulahi et al. (2021) investigated the effectiveness of peer-led breastfeeding education and support and found that peer-led education increased IIFAS scores.[46]

One of the factors affecting breastfeeding is mothers' attitudes toward breastfeeding. Family structure, economic status, sociocultural environment, misconceptions about breast milk and the breastfeeding process, and concerns about the baby's satiation can negatively influence mothers' breastfeeding attitudes.[47] While the initial IIFAS scores of mothers were similar between the groups (Experimental Group: 57.91; Control Group: 58.09), the post-education BBAT scores were significantly higher in the experimental group than in the control group (Experimental: 57.35±7.79; Control: 53.75±7.47) ($p = .007$).

These results confirm the H_4 hypothesis, which posits that educating family members increases mothers' IIFAS scores. Although the IIFAS scores before discharge were higher in the group in which family members received education (experimental: 61.87; control: 59.88), this difference was not statistically significant ($p > .05$). These results show that educating family members positively impacts mothers' infant feeding attitudes and suggest that the education provided to family members enhances the social support they provide, thereby improving mothers' feeding attitudes.

Comparison of IIFAS scores across groups

The IIFAS scores of family members supporting the mother during the postpartum period were similar between the groups before education ($p > .05$). However, in the post-education and post-discharge evaluations, the IIFAS scores in the experimental group were higher, although the difference was not statistically significant. Notably, post-discharge, the IIFAS scores of family members who received education were significantly higher ($p= .001$) (Table 4). These results confirm the H_5 hypothesis that educating family members increases their IIFAS scores. The findings suggest that the education provided to family members positively influenced their attitudes toward infant feeding, which might have positively contributed to improving mothers' attitudes toward infant feeding.

In a cross-sectional study examining the influence of grandmothers on exclusive breastfeeding, 54% of grandmothers gave food, and 69% gave tea and water to babies before six months. These results were interpreted as grandmothers significantly influencing infant feeding and negatively affecting mothers' breastfeeding behaviors.[7] Another study found that living with both grandmothers and

paternal grandmothers did not affect the decision to breastfeed exclusively but negatively impacted exclusive breastfeeding rates among breastfeeding mothers.[48]

Comparison of mothers' breastfeeding self-efficacy between groups

Our research results indicate that breastfeeding education provided to family members increases the social support provided to mothers and positively affects breastfeeding self-efficacy, thereby confirming the H_6 hypothesis (Table 5). These findings suggest that involving family members in breastfeeding education can enhance the social support available to mothers and improve their breastfeeding self-efficacy, which may positively affect short- and long-term breastfeeding outcomes. These results are believed to contribute significantly to the literature by demonstrating the influence of family members on mothers' breastfeeding behaviors.

Several factors influence women's breastfeeding self-efficacy, including the contribution of the partner, education provided to the partner, and breastfeeding education provided to the mother. While the literature contains studies examining mothers' perceptions of breastfeeding self-efficacy without including social support factors[49,50], there are limited studies similar to ours that include family members to examine mothers' breastfeeding self-efficacy perceptions. A study examining sociodemographic factors related to breastfeeding self-efficacy in 801 women found that breastfeeding education and support positively impacted breastfeeding self-efficacy [51]. A cross-sectional study examining the self-efficacy of mothers breastfeeding with family support found that breastfeeding self-efficacy also increased [12]. In a study by Razhan *et al*. examining the impact of peer support on breastfeeding self-efficacy in primiparous women, it was found that the average breastfeeding self-efficacy score and rate of exclusive breastfeeding were higher in the experimental group than in the control group.[52] Li *et al*. found that family support and perceived social support positively impacted mothers' breastfeeding self-efficacy in a study involving 787 women.[53] Mercan and Selçuk showed that positive attitudes and social support in the early postpartum period positively influenced breastfeeding self-efficacy.[54] Gölbaşı *et al*. found that breastfeeding counseling provided via phone calls positively affected the breastfeeding self-efficacy levels of mothers and their exclusive breastfeeding status.[27] In a randomized controlled experimental study by Yeşil *et al*., group breastfeeding education positively increased mothers' self-efficacy and rates.[55]

In a study by Maleki-Saghooni *et al*. that aimed to determine the relationship between social support and breastfeeding self-efficacy levels in primiparous women with infants under six months old, it was concluded that increased social support for mothers enhanced their breastfeeding self-efficacy levels.[56] Another study by Gharaei *et al*. aimed to determine the impact of breastfeeding education with and without the involvement of grandmothers on breastfeeding self-efficacy and infant feeding patterns and found that breastfeeding education involving grandmothers positively influenced mothers' breastfeeding self-efficacy but did not result in a significant change in infant feeding behaviors.[57]

This study's emphasis on family support and education expands the scope of breastfeeding education programs and provides an innovative perspective on healthcare policies. It is posited that equipping family members with knowledge about the breastfeeding process and encouraging them to take on an active, supportive role can positively impact mothers' physical and emotional well-being. This approach is expected to enhance the sustainability of breastfeeding, thereby contributing to meeting infants' optimal nutritional and health needs.

The study strenghts

The fact that the study was conducted as a randomized controlled experimental design, with participants randomly assigned to the experimental and control groups, and that it is one of the few experimental studies conducted on this subject, gives the study the potential to make a significant contribution to the literature and constitutes its strengths.

Limitations of the research

The main limitations of this study include the inability to perform blinding due to data being collected by the researcher, the fact that the study was conducted at a single center, and that data collection after discharge was conducted via telephone interviews due to the COVID-19 pandemic. This method may have made it more difficult to establish effective communication with some participants and might have limited the accuracy or depth of responses. All these factors should be considered as limitations when evaluating and interpreting the study's findings.

The implications of the results for policy and practice

Based on these findings, it is recommended that family members who will support their mothers during the postpartum period be included in breastfeeding counseling sessions and that educated family members support mothers during the postpartum period. Notably, multicenter studies should be conducted to evaluate the long-term effects of the education provided to family members on breastfeeding parameters.

Conclusion

Breastfeeding education provided to family members during the postpartum period reduced the rate of providing supplementary food on the first postpartum day, increased the rate of exclusive breastfeeding at one month, enhanced breastfeeding skills, positively influenced the breastfeeding attitudes of both mothers and family members, and improved mothers' breastfeeding self-efficacy.

Based on these findings, it is recommended that family members who will support their mothers during the postpartum period be included in breastfeeding counseling sessions and that educated family members support mothers during the postpartum period. Notably, multicenter studies should be conducted to evaluate the long-term effects of the education provided to family members on breastfeeding parameters. This study has been accepted as a doctoral thesis by Istanbul University-Cerrahpaşa Graduate Education Institute.

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