

The Effect of Motivational Interview-Based Breastfeeding Education on Breastfeeding Motivation, Breastfeeding Success, and Breastfeeding Self-Efficacy Perceptions After Cesarean Section: A Study Protocol for a Randomised Controlled Trial

Motivasyonel Görüşmeye Dayalı Emzirme Eğitiminin Sezaryen Sonrası Emzirme Motivasyonuna, Emzirme Başarısına ve Emzirme Öz Yeterlilik Algısına Etkisi: Randomize Kontrollü Çalışma Protokolü

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This study was registered in the Clinical Trials registry with the registration number "NCT05562245".

This study was prepared based on the findings of Ebru BEKMEZCİ's thesis study titled "The effect of motivational interview-based breastfeeding education on breastfeeding motivation, breastfeeding success, and breastfeeding self-efficacy perceptions after cesarean section" (Konya: Selçuk University; 2023).

ABSTRACT Objective: This study will be conducted to evaluate the effect of motivational interviewing-based breastfeeding education on breastfeeding motivation, success, self-efficacy perception and duration of exclusive breastfeeding of primiparous mothers after cesarean section. **Material and Methods:** The protocol of this randomized controlled study was prepared in line with SPIRIT 2013. A total of 80 mothers who gave birth by cesarean will be included in the study, 40 of whom are in the intervention group and 40 are in the control group. "Introductory Information Form", "Follow-up Forms", "LATCH Breastfeeding Assessment Tool", "Breastfeeding Self-Efficacy Scale-Short Form", "The Primipara Breastfeeding Motivation Scale", "Importance and Confidence-Sufficiency Rulers" will be used for data collection. Primiparous mothers in the intervention group will receive breastfeeding education based on motivational interviewing four times after cesarean section, while motivational interviews will not be conducted with mothers in the control group. Mothers in both groups will have received the hospital's routine breastfeeding training. This study is registered in the Clinical Trials database (NCT05562245). **Results:** The data obtained in the research will be analyzed using IBM SPSS 23 statistics software package. Descriptive statistical methods (number, percentage, mean, standard deviation) will be used to evaluate the data. Parametric tests will be used for normally distributed data while non-parametric tests will be utilized for non-normally distributed data. **Conclusion:** This study is important in terms of increasing breastfeeding motivation of mothers and maintaining breastfeeding behavior. At the end of the study, it is expected that the importance of evidence-based breastfeeding support will be recognized concerning the effect of motivational interviewing on breastfeeding.

Keywords: Breastfeeding; interview; motivation; nurses; cesarean section

ÖZET Amaç: Bu çalışma, motivasyonel görüşmeye dayalı emzirme eğitiminin sezaryen sonrası primipar annelerin emzirme motivasyonu, başarısı, öz-yeterlilik algısı ve sadece anne sütü verme süreleri üzerindeki etkisini değerlendirmek amacıyla yapılacaktır. **Gereç ve Yöntemler:** Randomize kontrollü çalışmanın bu protokolü SPIRIT 2013 doğrultusunda hazırlanmıştır. Çalışmaya, sezaryen ile doğum yapan 40 müdahale ve 40 kontrol grubunda olmak üzere toplamda 80 primipar anne dahil edilecektir. Verilerin toplanmasında, "Tanıtıcı Bilgi Formu", "İzlem Formları", "LATCH Emzirme Tanılama Ölçüm Aracı", "Emzirme Öz-Yeterlilik Ölçeği Kısa Formu", "Primipar Emzirme Motivasyon Ölçeği", "Önem ve Güven-Yeterlilik Cetvelleri" kullanılacaktır. Müdahale grubundaki primipar annelere sezaryen sonrası dört kez motivasyonel görüşmeye dayalı emzirme eğitimi verilecek, kontrol grubundaki annelerle motivasyonel görüşme yapılmayacaktır. Her iki gruptaki anneler hastanenin rutin emzirme eğitimini almış olacaktır. Bu çalışma Clinical Trials veritabanına (NCT05562245) kayıtlıdır. **Bulgular:** Araştırmada elde edilen veriler IBM SPSS 23 istatistik yazılım paketi kullanılarak analiz edilecektir. Verilerin değerlendirilmesinde tanımlayıcı istatistiksel yöntemler (sayı, yüzde, ortalama, standart sapma) kullanılacaktır. Normal dağılım veriler için parametrik testler, normal dağılımayan veriler için ise parametrik olmayan testler kullanılacaktır. **Sonuç:** Bu çalışma, annelerin emzirme motivasyonunun artırılması ve olumlu emzirme davranışının sürdürülmesi açısından önemlidir. Çalışmanın sonunda motivasyonel görüşmenin emzirmeye etkisi konusunda kanıt dayalı emzirme desteğinin öneminin anlaşılması beklenmektedir.

Anahtar Kelimeler: Emzirme; görüşme; motivasyon; hemşireler; sezaryen

TO CITE THIS ARTICLE:

Bekmezci E, Meram HE. The effect of motivational interview-based breastfeeding education on breastfeeding motivation, breastfeeding success, and breastfeeding self-efficacy perceptions after cesarean section: A study protocol for a randomised controlled trial. Türkiye Klinikleri J Health Sci. 2024;9(3):465-73.

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Peer review under responsibility of Türkiye Klinikleri Journal of Health Sciences.

Received: 14 Feb 2024

Received in revised form: 20 Mar 2024

Accepted: 16 Apr 2024

Available online: 17 May 2024

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Breast milk is considered the most ideal source of nutrients for infant nutrition.¹ The World Health Organization (WHO) recommends that babies start being breastfed within the first hour after birth and breastfeed exclusively for the first six months of their lives, followed by complementary foods until at least the age of two.² However, breastfeeding rates lag far behind these recommendations.¹ According to the WHO data, less than half of babies under six months are reported to be exclusively breastfed, and Türkiye Demographic and Health Surveys 2018 data, the rate of exclusive breastfeeding for babies under six months is 41%.^{2,3} Interruptions in the initiation and maintenance of breastfeeding are associated with difficulties in breastfeeding.⁴ Moreover, it has been reported that cesarean delivery has a negative effect on breastfeeding and therefore the breastfeeding process of women who have cesarean delivery may be negatively affected.^{5,6} Health professionals who provide breastfeeding education play a major role in the initiation and maintenance of breastfeeding.⁴ Approach should be used patient-centered for breastfeeding education that is based on strengths and avoids confusing advice. Motivational interviewing is an example of such practice. It is a psychosocial intervention designed to help increase individuals' readiness for behavior change by increasing their intrinsic motivation and resolving the ambivalence they experience.¹ Motivational interviewing allows nurses to learn about the mother's feelings, knowledge, perceived barriers and expectations regarding breastfeeding.⁷ Relevant studies in the literature reveal that motivational interviewing has positive effects on breastfeeding.^{1,8} However, no specific study was encountered for women who give birth by cesarean section, who are reported to have more problems with breastfeeding. Because of the breastfeeding difficulties experienced by mothers after cesarean section, they have mixed feelings about breastfeeding.⁹ This situation reveals the need for motivation-based education for mothers after cesarean delivery. It is also reported in the literature that there is a need for intervention studies including breastfeeding support for mothers after cesarean section.¹⁰ Therefore, the study will be conducted with primiparous mothers who gave birth by cesarean section and it is thought that it will make a

significant contribution to the literature with its results.

Objective of the Study: This study was planned to evaluate the effect of motivational interviewing-based breastfeeding education on breastfeeding motivation, breastfeeding success, breastfeeding self-efficacy perception and duration of exclusive breastfeeding of primiparous mothers after cesarean delivery.

MATERIAL AND METHODS

THE TYPE OF THE STUDY

The protocol for this study was based on SPIRIT 2013 (Standard Protocol Items: Recommendations for Interventional Trials).^{11,12} This study is in randomized controlled experimental design.

PARTICIPANTS

The population of the study consisted of primiparous mothers who underwent cesarean delivery in a private hospital in Konya.

SAMPLE SIZE AND POWER ANALYSIS

G*Power version 3.1.9.4 (Heinrich-Heine-Universität Düsseldorf, Germany) was used to calculate the sample size. In Addicks and McNeil's study investigating the effect of motivational interviewing to support breastfeeding, based on the partial $\eta^2=0.214$ score, taking effect size $f: 0.521$, 95% power, and 5% margin of error, it was calculated that 34 mothers in each group and 68 mothers in total should be included in the study.¹ In case of possible losses in data collection, it was decided to increase the sample size by 20% and include 40 people in the intervention group and 40 people in the control group with a total of 80 people in the study.

The inclusion criteria for mothers are as follows:

- Being a volunteer,
- Having given birth by cesarean section,
- Being primiparous,
- Having graduated from at least primary school,
- Being 18 years of age or older,

- Giving birth at 37 weeks or more of pregnancy,

- Having a baby that weighs 2,500 g or above,

- Having a baby with an APGAR score of 7 or higher at the fifth minute,

The exclusion criteria for mothers are as follows:

- Receiving general anesthesia,

- Having undergone multiple pregnancy and given birth,

- Having any chronic disease, diagnosed mental or psychiatric disease history,

- Having a history of preeclampsia, eclampsia and gestational diabetes,

- Having developed complications during cesarean section and waited for more than 1 hour to be transferred to the ward,

- Being coronavirus disease-2019 positive at the first hour postpartum and having a problem that prevents breastfeeding,

- Mothers whose babies were in intensive care after birth were not included in the study.

Criteria for Exclusion from the Study:

- Failure of pregnant women/mothers to attend at least one session of education and/or measurement,

- Wishing to withdraw from the study,

- Receiving support from a private breastfeeding consultant,

- Being diagnosed with a mental or physical illness (such as postpartum depression) during follow-up,

- Having an infant that has a genetic and/or metabolic disease that was not detected prenatally or at birth but was observed during postnatal follow-up.

VARIABLES OF THE STUDY

Independent Variable: Motivational interviewing based-breastfeeding education

Dependent Variables:

- Mean scores on the “LATCH Breastfeeding Assessment Tool”,

- Mean scores on the “Breastfeeding Self-Efficacy Scale-Short Form”,

- Subscale mean scores on the “The Primipara Breastfeeding Motivation Scale”,

- Mean scores on the “Importance and Confidence-Sufficiency Rulers”,

- Duration of exclusive breastfeeding (three month follow up),

Primary outcome criteria

- “LATCH Breastfeeding Assessment Tool” (5-7 days postpartum, six-week postpartum and three months postpartum),

- “Breastfeeding Self-Efficacy Scale-Short Form” (5-7 days postpartum, six-week postpartum and three months postpartum),

- “The Primipara Breastfeeding Motivation Scale” (5-7 days postpartum, six-week postpartum and three months postpartum),

- “Importance and Confidence-Sufficiency Rulers” (5-7 days postpartum, six-week postpartum and three months postpartum).

Secondary outcome criteria

- Exclusive breastfeeding duration (three month follow up).

RANDOMIZATION AND BLINDING

Randomization

After informed consent were obtained from the mothers and pretest data were collected, they will randomly assigned to intervention group and control group. The randomization list will be made by a statistical expert using the block randomization method. Selection bias will be controlled by concealing the random assignment and randomization process. In the literature, it is recommended that each step of randomized controlled trials be conducted according to the Consolidated Standards of Reporting Trials.^{13,14} The intervention and control groups of the study are presented in [Figure 1](#) in the Consort 2017 flowchart.¹⁵

Blinding

The study was blinded in terms of statistician. Researcher blinding will not be performed since there

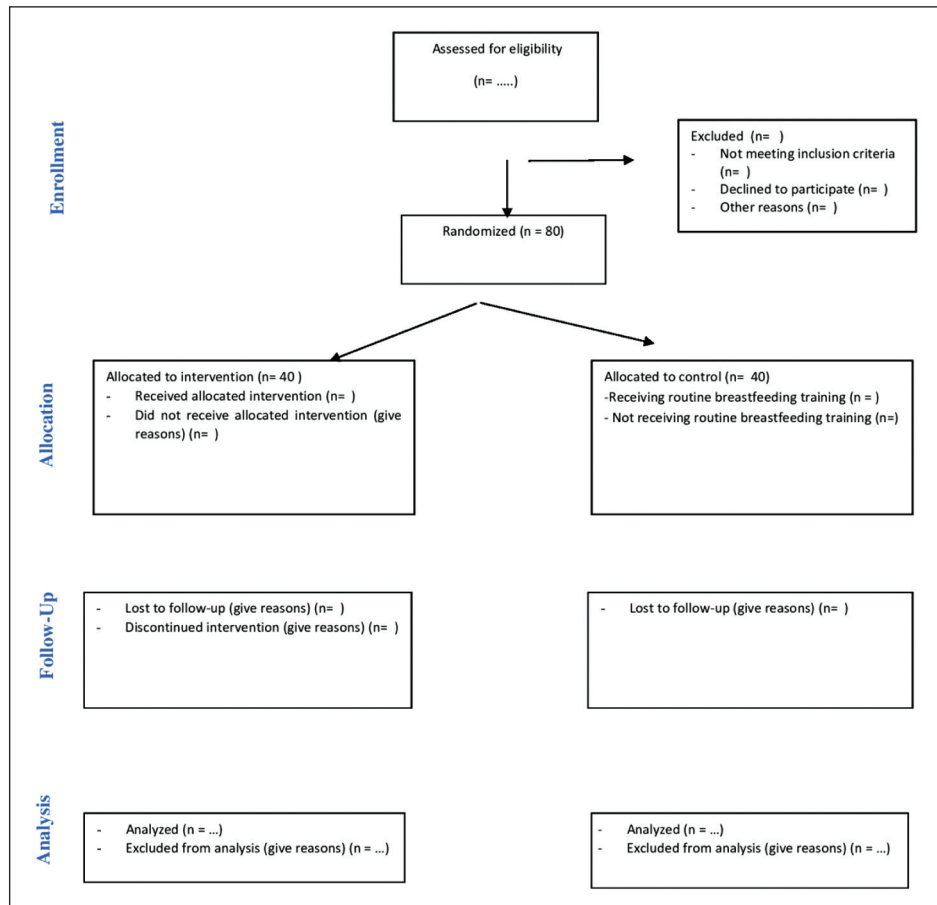


FIGURE 1: CONSORT flow diagram.

is an education practitioner. However, the researcher will open the envelope created by the statistician and find out which group the mothers are in after their verbal and written consents are obtained and the initial data are collected. In order to prevent bias in the evaluation of the data, the groups will be coded and the data will be analyzed by an independent statistical expert. After the analysis and interpretation of the data in the statistical process, the codes of the intervention and control groups will be revealed.

DATA COLLECTION TOOLS

■ *Introductory Information Form*, was prepared in line with the literature to determine the socio-demographic, obstetric and breastfeeding characteristics of the mothers.^{1,16}

■ *5-7 days postpartum, Six-week postpartum, Three months postpartum Follow-up Forms* were

prepared in line with the literature to determine the characteristics of the mothers which may affect breastfeeding.^{1,16}

■ *LATCH Breastfeeding Assessment Tool* were developed by Jensen et al.¹⁷ One of the Turkish validity and reliability studies of the scale was conducted by Yenil and Okumuş. The LATCH breastfeeding diagnostic tool consists of five assessment criteria and is named after the abbreviation of the first letters of these criteria. L stands for Latch on the breast, A for Audible swallowing, T for Type of the nipple, C for Comfort breast/nipple, and H for Hold/Help. Each item is scored between 0 and 2 points. A maximum of 10 points can be obtained and breastfeeding success increases as the score increases. In the Turkish validity and reliability study, the Cronbach alpha coefficient was found to be 0.95.¹⁸

■ *Breastfeeding Self-Efficacy Scale-Short Form* was developed by Dennis and Faux as 33 items and later revised by Dennis as the 14-item Breastfeeding Self-Efficacy Scale-Short Form. Turkish validity and reliability of the scale was tested by Aluř Tokat et al.¹⁹⁻²¹ The scale is a five-point Likert type. The score that can be obtained from each item varies between 1-5 points. A total score of between 14 to 70 can be obtained from the scale and a higher score means higher breastfeeding self-efficacy. In the Turkish validity and reliability study, the Cronbach alpha coefficient was found to be 0.86.²¹

■ *The Primipara Breastfeeding Motivation Scale* was developed by Stockdale et al.²² Turkish validity and reliability study was conducted by Akçay and Demirgöz Bal.²³ The scale consists of 29 items in total and has four subscales. These are the value ascribed to breastfeeding, self-efficacy, perceived midwife support and expectation of success. The scale items are scored between 1 and 7. In the scale, the scores obtained in each subgroup are summed and assessed. There is no cut-off and total score in the assessment of the scale. The increase in the score obtained from the subscales of the scale indicates an increase in the characteristics and therefore motivation in the subgroups. In the Turkish validity and reliability study of the scale, Cronbach's alpha coefficients of its subgroups were found to be "value ascribed to breastfeeding" 0.884, "self-effectiveness" 0.825, "perceived midwife support" 0.686 and "expectancy for success" 0.873.²³

■ *Importance and Confidence-Sufficiency Rulers* is a rating of mothers' importance and confidence-sufficiency in their breastfeeding skills on a scale of 0 to 10. The application of the Importance and Confidence-Sufficiency scale in motivational interviewing is important for the assessment of change.²⁴

CREATION AND EVALUATION OF THE BREASTFEEDING GUIDE

Breastfeeding Guide was prepared by the researcher in accordance with the literature. The appropriateness and structure of the Breastfeeding Guidelines were evaluated using the "Assessment Form for the Appropriateness of Written Educational Materials", and

reliability and information quality were assessed using "DISCERN (Quality Criteria for Consumer Health Information)".²⁵⁻²⁷ To this end, in order to assess the content validity of the Breastfeeding Guide, it was sent by e-mail to seven experts to obtain their opinions. Following the evaluation, it was concluded that there was a statistical agreement between the expert opinions. The Breastfeeding Guide was finalized in line with the suggestions received from the experts.

PILOT STUDY

After obtaining ethics committee approval and institutional permission, a pilot study was conducted with five primiparous mothers who met the research criteria and consented to participate in the study in order to evaluate the comprehensibility and applicability of the data collection tools, the Breastfeeding Guide and motivational interviewing. Five mothers who participated in the pilot study will not be included in the research.

DATA COLLECTION

Within the first hour after cesarean section, primiparous mothers who meet the inclusion criteria of the study will be informed about of the study. The person who agrees to participate in the study will be assigned to the intervention or control group. In this way, possible data loss will be prevented. Since the "LATCH Breastfeeding Diagnostic Measurement Tool" is an observational measurement tool, it will be completed simultaneously with the researcher by the education nurse who is independent of the researcher in the first and second interviews and the interobserver agreement coefficient will be examined at the end of the study. Since the third and fourth interviews will be conducted at home, they will be completed only by the researcher. The flow chart of the study is presented in [Figure 2](#).

INTERVENTION GROUP

Within the first hour after caesarean section, the mothers will first fill in the "Introductory Information Form", "LATCH Breastfeeding Assessment Tool", "Breastfeeding Self-Efficacy Scale-Short Form", "The Primipara Breastfeeding Motivation Scale", and "Importance and Confidence-Sufficiency Scales". Afterwards, the mothers assigned to the in-

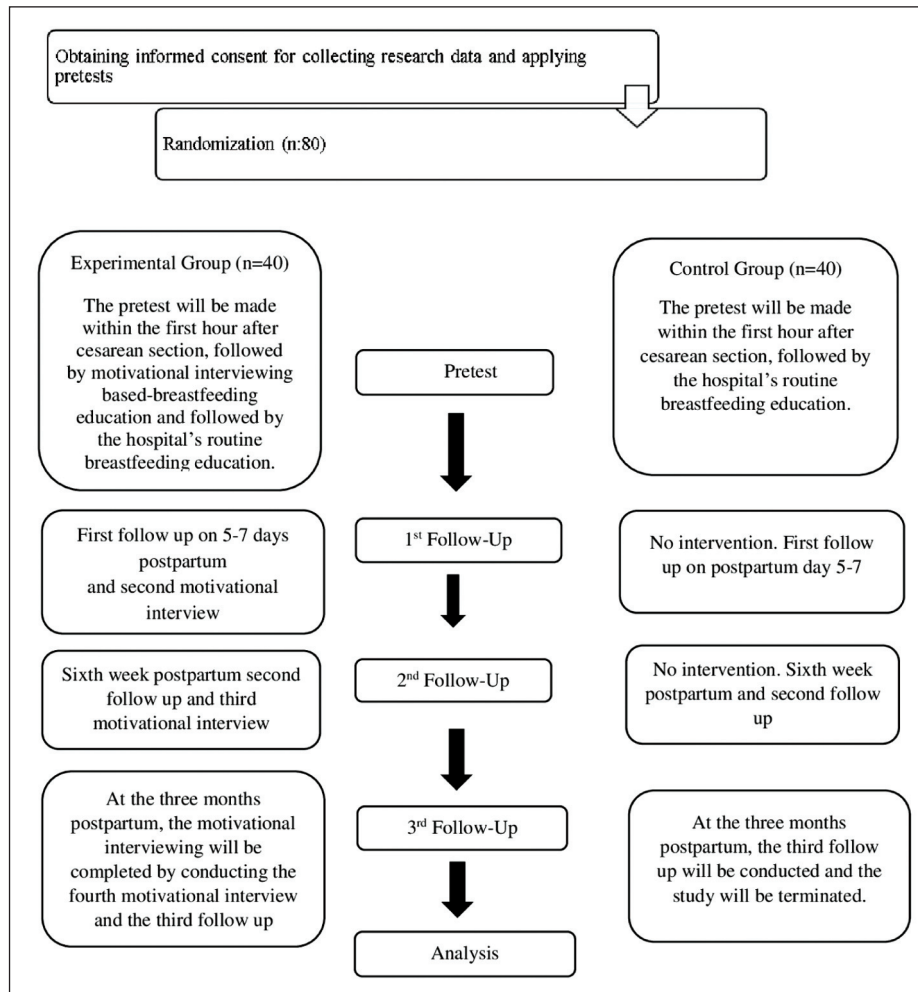


FIGURE 2: Flow chart of the study.

intervention group will be given breastfeeding education based on motivational interviewing by the researcher.

First follow-up data will be collected by interviewing mothers on the fifth-seventh postpartum days in the hospital, and then the second motivational interview will be held (First follow-up).

At the sixth postpartum week, the second follow-up data will be collected by visiting the mothers' homes, and then the third motivational interview session will be held (Second follow-up).

In the third postpartum month, mothers' homes will be visited and third follow-up data will be collected, and then the fourth motivational interview session will be held (Third follow-up).

PROCEDURES TO BE CARRIED OUT AS PART OF MOTIVATIONAL INTERVIEWING BASED-BREASTFEEDING EDUCATION

The Researcher and Consultant attended the "Motivational Interviewing Technique Training" received a certificate of participation.

In each session, the education will be supported by using communication skills specific to motivational interviewing such as asking open-ended questions, supporting, avoiding giving advice, reflective listening, affirming, and summarizing.²⁸ In addition, the four basic principles on which motivational interviewing is based (expressing empathy, developing autonomy, supporting and valuing) will be applied during the motivational interviews.²⁴ The content of

TABLE 1: Motivational interviewing-based breastfeeding education program.

Interventions		
	Aim	Program content
Within the first hour after cesarean section	<ul style="list-style-type: none"> Ensuring the mother's participation in motivational interviews, determining the roles in the interview, determining the importance she attaches to breastfeeding and her self-confidence. 	<ul style="list-style-type: none"> Informed consent will be obtained after meeting the participants and informing them about the study. After pretest data will be collected, motivational interviewing-based breastfeeding education will be provided in the hospital. Breastfeeding Guide will be given to mothers. Interviews are expected to last between 30-60 minutes on average.
Fifth-seventh day postpartum	<ul style="list-style-type: none"> The mother's breastfeeding process is evaluated. If the mother has problems with the breastfeeding process, information will be given to the mother by focusing on these issues. 	<ul style="list-style-type: none"> After the first follow up date will be collected, when mothers visit the hospital, a second motivational interview session will be held in the breastfeeding room and their breastfeeding will be supported where necessary. Interviews are expected to last between 30-45 minutes on average.
Six-week postpartum	<ul style="list-style-type: none"> The mother's breastfeeding process is evaluated. If the mother has problems with the breastfeeding process, information will be given to the mother by focusing on these issues. 	<ul style="list-style-type: none"> After the second follow up date will be collected, the third motivational interviewing session is held by visiting the mothers at their homes and their breastfeeding will be supported where necessary. Interviews are expected to last between 30-45 minutes on average.
Three months postpartum	<ul style="list-style-type: none"> The mother's breastfeeding process is evaluated. The mother's commitment to breastfeeding is supported. The motivational interview is terminated. 	<ul style="list-style-type: none"> After the third follow up date will be collected, in order to end the motivational interview, the fourth motivational interview session will be conducted by visiting the mothers at their homes. Interviews are expected to last between 30-45 minutes on average.

the motivational interviews to be conducted at each stage was prepared by the researcher in detail in the Motivational Interviewing Guide (Breastfeeding). Moreover, the summary content of the motivational interviewing-based breastfeeding education program for the intervention group is presented in [Table 1](#).

CONTROL GROUP

Mothers who meet the inclusion criteria will be informed about the study and their informed consent will be obtained. The mothers in the control group who agree to participate in the study will not be given motivational interviewing-based breastfeeding education by the researcher. All mothers in the control group and intervention group will receive routine breastfeeding education given by the hospital's training nurse, as per hospital policy. Before receiving the routine breastfeeding education provided by the hospital, the mothers will fill in the "Introductory Information Form" within the first hour after cesarean section, "LATCH Breastfeeding Assessment Tool", "Breastfeeding Self-Efficacy Scale-Short Form", "The Primipara Breastfeeding Motivation Scale", and

"Importance and Confidence-Sufficiency Scale". Besides, the Breastfeeding Guide prepared by the researcher will be given to the mothers during the first interview. Furthermore, measurements will be conducted by filling in various forms such as "Follow-up Forms at the fifth-seventh days postpartum (first follow-up), six-week postpartum (second follow-up) and three months postpartum (third follow-up)", "LATCH Breastfeeding Assessment Tool", "Breastfeeding Self-Efficacy Scale-Short Form", "Primipara Breastfeeding Motivation Scale", and "Importance and Confidence-Sufficiency Scale".

EVALUATION OF THE DATA

The data obtained in the research will be analyzed using IBM's SPSS Statistics 23 (IBM Corporation, New York, USA) software package. Descriptive statistical methods (number, percentage, mean, standard deviation) will be used to evaluate the data. Parametric tests will be used for normally distributed data while non-parametric tests will be utilized for non-normally distributed data. In this context, Mixed Anova and Log Rank (Mantel-Cox) analysis

will performed. Interobserver agreement will be examined with the intraclass correlation coefficient. The significance level will be taken as $p < 0.05$.

ETHICS OF THE STUDY

Ethics Committee of the Faculty of Nursing at Selçuk University permission was obtained before the study (date: March 30, 2022, decision no: 2022/28). This study was carried out in accordance with the Declaration of Helsinki. Necessary institutional permission was obtained from a private hospital in Konya where the data will be collected. Participants who voluntarily participate in the study will be informed about the study and their informed consent will be obtained before they are assigned to the intervention and control groups. Necessary permissions were received from the authors of the scales to be used in the study. This study was registered in the Clinical Trials registry with the registration number "NCT05562245".

DISCUSSION

Breastfeeding has very beneficial effects on maternal and infant health.²⁹ Therefore, promoting breastfeeding has become one of the most important efforts to improve maternal and infant health.²⁹ In this regard, early initiation of breastfeeding is important. In addition, it is reported that if breastfeeding is not well-established during the first week, may cause problems such as weight loss and re-hospitalization of the baby.³⁰ It is suggested that cesarean delivery may have negative effects on breastfeeding behaviors in the short and long term.³¹ In one study, it is stated that women who gave birth by cesarean section were more likely to delay breastfeeding and use formula compared to women who gave birth vaginally, and were less likely to exclusively breastfeed one month after birth.²⁸ The first hours after birth are of crucial importance for breastfeeding success.³² Postoperative care routines after cesarean delivery interrupt mother-baby bonding and the breastfeeding process, reducing early breastfeeding rates.⁵ Thus, health professionals should provide more care and support to mothers who have a cesarean section to reduce breastfeeding problems.³³

It is suggested that motivational interviewing can be used as a person-centered supportive approach to communicate with mothers about breastfeeding in the postpartum period, to increase breastfeeding rates and to initiate breastfeeding in the early period.⁷ Motivational interviewing with mothers is associated with an increase in exclusive breastfeeding rates and breastfeeding self-efficacy.³⁴ In a study, it was reported that exclusive breastfeeding and breastfeeding rates in the four months postpartum period were higher in mothers who underwent motivational interviewing compared to the control group.³⁵ In addition, one study revealed that mothers had fewer problems in their first breastfeeding experience thanks to the early initiation of breastfeeding with motivational interviewing.¹⁶

CONCLUSION

Considering the literature, no motivational interviewing-based study was found focusing only on women who give birth by cesarean section. By this study, it is believed that the effects of motivational interviewing can be demonstrated on maternal breastfeeding self-efficacy, breastfeeding motivation and breastfeeding success after cesarean section.

Source of Finance

This study was supported by Selçuk University Scientific Research Projects Coordinatorship with project number 22112002.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: Ebru Bekmezci, Halime Esra Meram; **Design:** Ebru Bekmezci, Halime Esra Meram; **Control/Supervision:** Halime Esra Meram; **Writing the Article:** Ebru Bekmezci; **Critical Review:** Halime Esra Meram; **References and Fundings:** Ebru Bekmezci, Halime Esra Meram.

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