

Effect of peer support on breastfeeding self-efficacy in ilamian primiparous women: A single-blind randomized clinical trial

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ABSTRACT

Introduction: Mother's belief, ability, and self-confidence, which is interpreted as breastfeeding self-efficacy, play a key role in the initiation and continuation of breastfeeding. Numerous factors affect this ability of the mother. Therefore, this study aimed to investigate the effect of peer support on breastfeeding self-efficacy in primiparous women. **Materials and Methods:** In this clinical trial, 240 primiparous women were randomly divided into experimental and control groups. The control group program included routine training, and the experimental group received counseling and training by 30 peers during the first three months after delivery. To determine breastfeeding self-efficacy, Denis's long-term breastfeeding self-efficacy questionnaire was used at the end of week 12 after delivery. Data were analyzed using SPSS software program, version 16.0 and independent *t* test, Chi-square test, and Mann-Whitney *U* test. **Results:** The mean of breastfeeding self-efficacy score at the end of week 12 after delivery was 141.11 ± 93.4 in the experimental group versus 114.40 ± 60.16 in the control group. Then, the two groups had a statistically significant difference ($P = 0.001$). Also, exclusive breastfeeding in the experimental group was higher than in the control group ($P = 0.001$). **Conclusion:** Peer support for primiparous women can effectively improve breastfeeding self-efficacy and continuity of exclusive breastfeeding.

Keywords: Breastfeeding, peer support, self-efficacy

Introduction

Breastfeeding is the basis of infant nutrition because, in addition to meeting its physical and physiological needs, it is also essential for mothers' and infants' mental health. Furthermore, breastfeeding can have beneficial economic and environmental

effects on families and communities.^[1] Unfortunately, despite the high rate of breastfeeding initially, it decreases significantly during the first 4–8 weeks after delivery. Worldwide, only 38% of infants under six months exclusively receive breast milk, and the average duration of exclusive breastfeeding is only 1 to 2 months, which decreases two months after birth, while the global average of breastfeeding is 20.5 months.^[2] According to the goals of global nutrition policies, by 2025, the rate of exclusive breastfeeding at six months should reach at least 50%.^[3]

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Various studies show that many social, physical, biological, and psychological factors affect women's ability and desire to breastfeed. For example, physicians and health and social care providers sometimes think that a combination diet is more beneficial than exclusive nutrition. Also, lack of support for breastfeeding in the workplace, advertising for infant formula, and the lack of awareness of women, husbands, family members, health care providers, and policymakers about the dangers of nonexclusive breastfeeding are other factors affecting women's desire and their ability to breastfeed.^[4,5]

Most women find primary breastfeeding a painful, difficult, and challenging experience. Lack of breastfeeding is not only associated with guilt but also undermines maternal identity. Failure to breastfeed is usually due to problems that mothers and infants face. Breastfeeding problems can often occur up to 2 weeks (51%) and 6 weeks (49%) after birth, and the most common problem a mother faces is a mental perception of lack of milk.^[1]

Despite the known benefits of breastfeeding for mother and infant, various factors can influence the mother's decision to continue breastfeeding. These include maternal knowledge of breastfeeding benefits, support systems, economic and social status, and breastfeeding self-efficacy.^[6-9] Self-efficacy means a person's belief in his or her ability to perform a particular task or behavior. The breastfeeding self-efficacy model influences the mother's choice of breastfeeding and the effort she will make and predicts how she copes with breastfeeding problems. Self-efficacy is an essential factor in influencing self-care behaviors in breastfeeding mothers. This phenomenon is influenced by several factors such as education, employment, number of deliveries, support of others, social support, breastfeeding in the first hours of birth, type of delivery, satisfaction with labor pains, satisfaction with postpartum care, maternal perception of the breastfeeding process, the mother's method of feeding the infant, and mother's anxiety.^[4,6,10]

To improve mothers' breastfeeding outcomes, health care providers should consider variables such as mother's knowledge and self-efficacy. Dennis believes that the higher the self-efficacy of breastfeeding in mothers, the longer the duration of exclusive breastfeeding.^[11] Self-efficacy is one of the main concepts of the social cognitive theory proposed by Bandura.^[3] According to Bandura's social cognitive theory (SCT), educational strategies and interventions can be used to develop appropriate knowledge and skills and increase self-efficacy and empowerment.^[2] According to Bandura's theory, individuals' perceptions of breastfeeding self-efficacy are affected by four main sources of information, including performance (such as previous breastfeeding experiences), substitute experiences (such as observing other breastfeeding mothers), verbal encouragement (such as encouragement by friends, family, and breastfeeding counselors), and physiological responses (such as fatigue, stress, and anxiety).^[12,13] Side effects from these sources can be reduced through some interventions

such as training and support.^[14,15] Training and support are provided by various professional resources (e.g. health care providers and breastfeeding counselors) and social resources (e.g., peers and support groups). Health care providers can change breastfeeding self-efficacy by adjusting self-efficacy information sources.^[16]

Given that breastfeeding self-efficacy in mothers is affected by previous breastfeeding experiences, exclusive feeding may be difficult for primiparous women who have not previously had such an experience. As a result, designing and implementing appropriate strategies to increase self-efficacy in these women is necessary and important.

Various studies have shown that professional support and training alone are not enough to improve breastfeeding outcomes because routine training by health centers often emphasizes the benefits of breastfeeding, while disregarding many of the breastfeeding barriers that mothers often face.^[3] Therefore, to overcome the challenges of breastfeeding mothers and succeed in breastfeeding, family, friends, community, and service providers' support is necessary. Today, due to the increase in social relations, the use of the support of non-professionals, especially peers, has received more attention.^[17,18] Peer support in breastfeeding includes emotional support, encouragement, and training in breastfeeding and helps solve breastfeeding mothers' problems by mothers who are either currently breastfeeding or have breastfeeding experience. A peer is a person who is similar to other people in characteristics such as age, gender, occupation, and socioeconomic status.^[3] Various studies have shown the effect of support and education by peers and health care providers on promoting breastfeeding self-efficacy.^[13,19-21] Heidari *et al.* that aimed to investigate the effect of cyberspace education on breastfeeding self-efficacy showed that the mean score of self-efficacy was significantly higher in the intervention group.^[15] Also, the findings of Mandana *et al.*'s study showed that face-to-face breastfeeding training is associated with increased breastfeeding self-efficacy.^[14] Godarzi *et al.*^[18] concluded in their study that the mean scores of self-efficacy were higher in the peer training group.

Despite all the educational efforts of health care providers to improve breastfeeding, due to the lack of time to provide more detailed counseling and training, some of the barriers to breastfeeding mothers face are ignored. Considering the results of studies and the importance of breastfeeding in promoting community health, this study was conducted to investigate the training effect by peer supporters on breastfeeding self-efficacy in primiparous women.

Materials and Methods

This randomized clinical trial was performed on all primiparous women and their infants in the postpartum ward of maternity hospitals and health centers in Ilam from July 2010 to April 2012.

Initially, breastfeeding supporters were selected among women who had a successful breastfeeding history and were volunteer members of the Ilam Red Crescent Society. They entered to study if they met the inclusion criteria, including residence in Ilam, minimum literacy for reading and writing, successful breastfeeding history, and no debilitating disease. After obtaining written consent from the volunteers, demographic information, pregnancy history, and breastfeeding history were recorded by the researcher through face-to-face interview; thus, 50 volunteers were registered. The study's objectives, proper breastfeeding methods, breastfeeding problems, and nutritional problems of infants were taught in 3 sessions of 3 h by lecture and role-playing methods. Then, by holding an oral test and face-to-face interview, 30 people were selected as breastfeeding sponsors and were divided into 15 groups of 2 people. Besides, leaflets on breastfeeding, breastfeeding problems, and referral resources were provided to sponsors to refer mothers and infants with breastfeeding problems.

Out of 1534 deliveries, 430 people had the inclusion criteria, of which 240 participated as a research sample.

Sample size formula:

$$N = \frac{\{Z_{1-\alpha} \sqrt{2P(1-P)} + Z_{1-\beta} \sqrt{P_1(1-P_1) + P_2(1-P_2)}\}^2}{(P_1 - P_2)^2}$$

Using the results of existing research on the effect of peer support on breastfeeding, assuming the type I error ($\alpha = 0.05$) and the type II error ($\beta = 0.20$) and Power = 0.8, and considering the ratio of breastfeeding continuity in the experimental group ($P_1 = 90\%$) and in the control group ($P_2 = 75\%$), the required number of samples in each group was estimated to be 80 people. Due to the drop in samples, 184 people eventually continued the study. The reasons for the drop in samples were: The unwillingness of the mother to cooperate (37 people), not answering the sponsor's phone (10 people), relocation of the mother (9 people), death of the infant (2 people). Sampling was performed by available sampling method in the hospital, but the samples were randomly divided into experimental ($n = 120$) and control ($n = 120$) groups using the RAND function by Excel software [Figure 1].

The inclusion criteria for mothers and infants were as follows: Willingness to cooperate, living in Ilam, availability, minimum literacy for reading and writing, singleton, primiparous, gestational age 37 weeks and above, no debilitating disease in mother and infant, no fetal malformations, and no need for hospitalization in the neonatal intensive care unit. After obtaining written consent from eligible primiparous women hospitalized in postpartum wards of Ilam hospitals, the study was conducted.

The data collection tool was a researcher-made questionnaire with three sections. The first part included demographic information, and the second part included information related to pregnancy and childbirth with 28 closed questions,

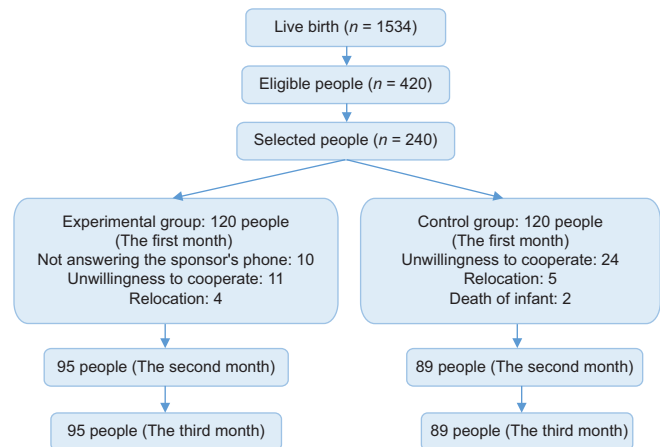


Figure 1: Selection and following algorithm of two groups of experimental and control

which were completed by face-to-face interview with the mother and referring to the file. Then, to ensure the correct breastfeeding technique, the breastfeeding control checklist for all primiparous women was completed before discharge from the hospital. This checklist includes six main parts, which are: Mother and infant body condition (5 items), mother and infant reactions (3 cases), emotional bond between mother and infant (3 cases), breast anatomy (4 cases), infant sucking status (7 cases) and sucking time (1 case), which were recorded as correct and incorrect for all cases. Equivalent reliability was used to determine the reliability of the breastfeeding control checklist. For this purpose, the breastfeeding of 10 infants using this tool was recorded simultaneously by the researcher and another person who had information in line with the research topic and was familiar with the data collection method. Moreover, the correlation coefficient was obtained by 0.92.

Then, all eight primiparous women were introduced to a group of 2 breastfeeding supporters. The experimental group's support program was such that the telephone numbers, addresses, and names of all 8 primiparous women were provided to 2 sponsors who were similar in age, level of education, socio-economic status, and place of residence. The sponsor made the first call during the first 48 h after the mother's discharge and only to familiarize the sponsor with the mother. Until the end of the third month after birth, the sponsor answered the mother's phone questions in breastfeeding, infant nutritional problems, maternal and infant health and provided the mother with accurate and scientific information. The mother's contact with the sponsor was based on the mother's needs and without limitation in number and time. Besides, the sponsor contacted the mother weekly and encouraged the mother to continue exclusive breastfeeding. Also, debugging sessions were held in the presence of supporters and researchers in the Red Crescent Society Center in Ilam for 12 weeks after delivery, every other week. The researcher's telephone number was given to the experimental group, control group, and supporters to be referred to medical centers in case of breastfeeding problems. The control group's program

included routine training and care in the postpartum ward and health centers.

The third part of the researcher-made questionnaire, including information about infant feeding patterns, was completed to examine breastfeeding patterns. Denis breastfeeding self-efficacy questionnaire was used to determine breastfeeding self-efficacy. This questionnaire includes three subscales of maternal satisfaction and pleasure (14 questions), infant growth (8 questions), and mother lifestyle (8 questions) and has a total of 30 questions. Each question is on a 5-point Likert scale.^[20,21] A score of 1 indicates “strongly disagree,” and five indicates “strongly agree”. Scoring in questions 3- 5- 8- 14- 15- 19-22-27-28-29 is inverse, and the total score of the questions is in the range between 30 and 150 so that the highest score indicates the highest self-efficacy. Self-efficacy is classified into three groups: Low self-efficacy (score less than 110), moderate self-efficacy (score between 110 and 126), and high self-efficacy (score higher than 126). The supporters’ group completed this form at the end of the third month. The reliability of the breastfeeding self-efficacy questionnaire was obtained in the studies of Dennis CL, *et al.*^[22] Hasanpoor S, *et al.*^[23] with Cronbach’s alpha coefficient of 0.82 to 0.96. In this study, Cronbach’s alpha method was used to determine the breastfeeding self-efficacy questionnaire’s reliability, which was confirmed by Cronbach’s alpha coefficient of 0.92. This questionnaire was completed at the end of week 12 with a face-to-face interview.

Data analysis was performed in SPSS software program, version 16.0 using independent *t* test, Chi-square test, and Fisher’s exact test. Data were considered significant with $P < 0.05$.

Findings

There was no significant difference between the two groups in terms of demographic variables ($P > 0.05$; Table 1).

The results of this study show that the mean score of self-efficacy in the two groups before the intervention had no statistically significant difference ($P > 0.05$), but at the end of week 12 after delivery, the mean score of self-efficacy was 141.11 ± 93.4 in the experimental group versus 114.40 ± 60.16 in the control group; therefore there was a significant difference between the two groups ($P = 0.001$) [Table 2].

Considering that 91.6% of the mothers in the experimental group scored higher than 126, while 55.1% of the mothers in the control group scored less than 110 points, the mothers in the experimental group had a higher level of self-efficacy ($P = 0.001$) [Table 3]. In the experimental group, which had a higher level of self-efficacy, the exclusive breastfeeding rate was significantly higher than the control group ($P = 0.001$) [Table 4]. The rate and continuity of exclusive breastfeeding at the end of weeks 4, 8, and 12 in the two groups had a statistically significant difference.^[22]

Discussion

This study showed that the implementation of a peer support program through education and telephone counseling of primiparous women positively affected the level of breastfeeding self-efficacy and exclusive breastfeeding. These results are consistent with the studies of Rezapour *et al.*^[24] Piro *et al.*^[25] And Godarzi *et al.*^[18] who found that peer education and counseling increase primiparous women’s self-efficacy score. Shafaei *et al.*^[16] showed that counseling, support, and prenatal training affect breastfeeding self-efficacy. Parsa *et al.*^[1] also stated that breastfeeding counseling and increasing the self-efficacy score of breastfeeding have a significant effect on the continuation of breastfeeding.

In the study of Tafazoli *et al.* although the mean self-efficacy score in the group that received peer counseling and training as well as the group that received counseling and support from health care providers was higher than the control group (did not receive these pieces of training), there was no significant difference between the three groups.^[3] McQueen *et al.*^[26] showed in their study that although the mean score of breastfeeding self-efficacy in the intervention group was higher than the control group, there was no statistically significant difference between the two groups. Such studies’ contradictory results may be due to the limited number of counseling and training sessions, the mismatch between the number of peers and breastfeeding mothers. In the study of Modi *et al.*, a total of four counseling sessions for mothers were used. Some studies indicate that if the number of people in a supported group is more than ten people, it reduces the positive health results^[27] while increasing the number of supporters or support provided leads to increased client satisfaction.^[28] Thus, such support is useful when one knows that support is available when needed and support resources are available.^[29]

One of this study’s strengths is the use of a long questionnaire (30 questions) of breastfeeding self-efficacy, while most studies have used the abbreviated form (14 questions). One of the study’s limitations is the change in the address and telephone number of the mothers participating in the study and the long duration of the study.

Conclusion

Due to the positive effect that peer support has on improving breastfeeding self-efficacy and exclusive breastfeeding, peer education and counseling can be a good strategy to make the pleasant experience of breastfeeding in young and inexperienced mothers during the first weeks after delivery discharge from the hospital.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other

Table 1: Distribution of absolute and relative frequencies of demographic variables in both experimental and control groups

Variables	Experimental group (n=95)	Control group (n=89)	P
The mean age of mothers (years)	25.9±4.7	25.7±5.2	0.9 ^a
The mean of gestational age based on LMP (weeks)	38.9±1.1	38.9±0.99	0.5 ^a
Average birth weight (grams)	3297.80±401.21	3277.16±356.24	0.2 ^d
Level of Education			
Primary	10 (11.2%)	5 (5.3%)	0.2 ^b
Diploma and lower	46 (51.7%)	57 (60.0%)	
University	33 (37.1%)	33 (34.7%)	
Employment status			
Housewife	74 (83.1%)	77 (81.1%)	0.7 ^b
Employed	15 (16.9%)	18 (18.9%)	
Race			
Kurdish	79 (78.8%)	89 (93.7%)	0.23 ^b
Not Kurdish	10 (11.2%)	6 (6.3%)	
Type of delivery			
Natural childbirth	49 (55.1%)	47 (49.5%)	0.4 ^b
Cesarean section	40 (44.9%)	48 (50.5%)	
Cause of cesarean section			
Emergency	26 (54.2%)	22 (55.0%)	0.9 ^b
Elective	22 (45.8%)	18 (45.0%)	
Number of visits during pregnancy			
<6	2 (2.2%)	4 (4.2%)	0.4 ^a
6-12	49 (55.1%)	44 (46.3%)	
>12	38 (42.2%)	47 (49.5%)	
The time of the first breastfeeding			
Immediately after birth	8 (8.4%)	11 (12.4%)	0.5 ^a
Half-hour after birth	37 (38.8%)	38 (42.7%)	
1-3 hours after birth	46 (48.4%)	30 (32.7%)	
4-6 hours after birth	4 (4.2%)	10 (11.2%)	
Skin-to-skin contact			
Yes	9 (9.5%)	12 (13.5%)	0.3 ^b
No	86 (90.5%)	86 (86.5%)	
Gender of infant			
Female	42 (44.2%)	42 (47.2%)	0.6 ^b
Male	53 (55.8%)	47 (52.8%)	
The most important source of information about breastfeeding			
Health care providers	32 (33.7%)	33 (37.1%)	0.8 ^b
Study	29 (30.5%)	28 (31.5%)	
Friends and acquaintances	34 (35.8%)	28 (31.5%)	

^a(Mann-Whitney U test); ^b(Chi-square test); ^c(Fisher's exact test); ^d(t test); LMP=Last Menstrual Period

Table 2: Comparison of mean breastfeeding self-efficacy between control and experimental groups before and after the intervention

Variable	Groups	No.	Mean	SD	P
Breastfeeding self-efficacy before the intervention	Control	120	134.81	13.09	0.61
	Experimental	120	133.10	15.05	
Breastfeeding self-efficacy after the intervention (12 weeks)	Control	89	141.11	93.4	0.001
	Experimental	95	114.40	60.16	

clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Table 3: Frequency of mothers in the study groups according to the level of breastfeeding self-efficacy, 12 weeks after delivery

Breastfeeding self-efficacy	Experimental		Control	
	No.	%	No.	%
Low level (<110)	0	0	49	55.1
Intermediate level (110-126)	8	8.4	40	44.9
High Level (>126)	87	91.6	0	0
Total	95	100	89	100
Statistical results	Z=12.16, P=0.001			

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Table 4: Comparison of breastfeeding patterns in the two groups of experimental and control at the end of 12 weeks

Type of baby feeding	Experimental		Control	
	No.	%	No.	%
Breast milk	92	96.8	56	62.9
Breast milk with milk powder	3	3.2	2	2.2
Milk powder	0	0	31	34.8
Total	95	100	89	100
Statistical results	Fishers exact test=46.94, P=0.00			

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Conflicts of interest

There are no conflicts of interest.

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