

## The Effect of Interventions on Breastfeeding Self-efficacy by Using Bandura's Theory in Iranian Mothers: A Systematic Review

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### Abstract

**Background:** Breastfeeding self-efficacy is a psychological effective factor on initiation and duration of breastfeeding, which according to Bandura's theory, is affected by four sources including performance accomplishments, vicarious experiences, verbal persuasion, and the emotional/physiological responses. We aimed to systematically review the effect of interventions using Bandura's self-efficacy theory on breastfeeding self-efficacy in Iranian mothers.

**Materials and Methods:** In this systematic review, all interventional studies from 1990 to May 2019, were searched in Web of Science, Scopus, EMBASE, Cochrane library and Medline databases as International databases and SID, Magiran and Irondoc as National databases by using English and Persian related keywords. Two reviewers studied the full text of the articles and their main findings were extracted and categorized. Quality assessment of studies was checked and verified by two authors independently based on the Effective Public Health Practice Project (EPHPP) tool.

**Results:** Finally, 21 articles (2,661 samples) which met inclusion criteria were investigated and reviewed in 5-domain that include performance accomplishments, vicarious experiences, verbal persuasion, and the emotional/physiological responses as well as interventions by using a combination of the 4 sources. The results of our review showed that mothers in intervention groups had significantly higher breastfeeding self-efficacy score compared to the control group. In addition, interventions by using verbal persuasion (52%, n=1660) are the most common and effective.

**Conclusion:** The results showed that intervention with the use of Bandura's self-efficacy theory improves the breastfeeding self-efficacy. Due to the impact of these interventions on the initiation and duration of breastfeeding, simple and cost-effective, the implementation of theory-based interventions to improve breastfeeding self-efficacy in hospitals and health centers seems to be necessary.

**Key Words:** Breast-feeding, Iran, Mothers, Self-efficacy, Systematic Review.

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## 1- INTRODUCTION

Breast milk is known as an ideal nutrition for infants, which has many benefits for the mother and the child (1, 2). The risk of death in non-breastfed child is 14 times higher than in exclusively breastfed child (3). On the other hand, breastfeeding in mothers will reduce the risk of the ovarian and breast cancers and osteoporosis, and will cause a faster return to pre-pregnancy weight (4-6). Therefore, the World Health Organization (WHO) recommends exclusive breastfeeding up to six months of age, and its continuation along with complementary feeding up to two years of age (7). Nevertheless, although the importance of breastfeeding is known worldwide, reduced breastfeeding rate is one of the most important problems moving ahead in many countries (8, 9). 40% or less of infants worldwide are breastfed exclusively (10). In a meta-analysis conducted in Iran in 2016, the prevalence of exclusive breastfeeding was 49.1% (11).

Studies have identified several factors in the success of breastfeeding, and increased ability and willingness of women to start and continue exclusive breastfeeding. Some of these factors include social, physical, biological, and psychological factors, the time of the first breast-feeding, attitude towards breastfeeding, social support, self-confidence and breastfeeding self-efficacy. Out of which, breastfeeding self-efficacy is one of the strongly predictive factors (12-17). Over the past two decades, breast-feeding self-efficacy has been known as a factor affecting the duration of breastfeeding. On the other hand, health care providers by using the theory of breastfeeding self-efficacy can adopt appropriate solutions to resolving breastfeeding problems and providing appropriate consultations (18-20). Self-efficacy is one of the constructs of Bandura's Social Learning Theory and is a cognitive process, in which an individual

perceives his or her capability to perform a specific behavior (21, 22). Dennis (1999) developed the breastfeeding self-efficacy theory based on Bandura's social cognitive theory (1977) (23). According to Dennis, breastfeeding self-efficacy is one of the important psychological and motivational factors for the beginning, success, and duration of breastfeeding (24). Women with higher self-efficacy are more willing to start and continue breastfeeding, and if they encounter any problems during breastfeeding, they will try to resolve them, and will not stop their breastfeeding (23, 25, 26). According to Bandura, self-efficacy is influenced by four important factors. These sources are as follows: performance accomplishment (such as an individual's successful experiences), vicarious and/or observational experience (observation of other individuals' performance, observation of a specific behavior for learning, for example, observation and practicing correct breastfeeding), verbal persuasion and guidance (receiving persuasion, guidance, advice and training, from acquaintances, friends, peers, and health care providers), physiological and affective states (Individual responses in relation to stressful situations and events); these sources can be used to increase breastfeeding self-efficacy (19, 21, 23, 27).

Given that multiple interventions have been conducted on breastfeeding self-efficacy promotion in Iran, and different results have been reported, and also considering the necessity and importance of breastfeeding in children's growth and health, we conducted the present study for the first time in Iran, with the aim of systematically reviewing the conducted studies that investigated the effects of different interventions on the promotion of breastfeeding self-efficacy using Bandura's Self-efficacy Theory.

## 2- MATERIALS AND METHODS

## 2-1. Data sources

This study is a systematic review of Iranian authors' articles about the effect of interventions on breastfeeding self-efficacy by using Bandura's self-efficacy theory. Web of Science, Scopus, Embase, Cochrane library and Medline (via PubMed) as International searched databases, SID, Magiran and Irondoc as National searched databases and search engine of Google scholar were searched in Persian and English languages.

## 2-2. Search strategy

All Iranian interventional studies including clinical trials and quasi-experimental studies from 1990 to May 2019 were included in this systematic review. In order to maximize the comprehensiveness, related keywords were identified and selected by using the medical subject headings (MeSH), and then our search was performed by using the following keywords that included "Self-efficacy", "Breast feeding", "Exclusive breastfeeding", "Self-confidence", "Self-concept", "Iran", which were combined together using Boolean OR and AND operators. Articles' references were also searched for full retrieval of information. The details about the search strategy in Medline (via PubMed) are displayed in **Table.1**. The method of presentation, including analysis and interpretation, determination of the studied problem, and collection of findings, was based on Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (28). By considering the above protocol as a criterion, we began to search for articles.

## 2-3. Study selection

The inclusion criteria for the study were as follows: Iranian articles being published in Persian and English, interventional study, use of sources mentioned in Bandura's Self-Efficacy Theory in order to promote breastfeeding self-efficacy. The exclusion criteria were lack of access to the full text

of articles, reporting of irrelevant results or same results. To avoid bias, the search and assessed eligibility of articles were performed by two researchers according to the inclusion criteria. After removing duplicate articles in Endnote software, the abstract of all articles was reviewed and where the article could not be excluded based on title or abstract or when there was disagreement between researchers, to reach consensus the full-text paper was retrieved and the discussion method and third author's opinion were used. After removing unrelated articles finally, 21 studies were included in the research for the quality assessment (**Figure.1**).

**Table-1:** Search strategy in Medline database (via PubMed).

("Breast feeding" [Mesh Terms] OR (Feeding AND Breast) OR Breastfeeding OR ("Breast Feeding" AND Exclusive) OR "Exclusive Breast Feeding" OR (Breastfeeding AND Exclusive) OR "Exclusive Breastfeeding") AND ("Self Efficacy"[Mesh Terms] OR (Efficacy AND Self) OR "Self-Efficacy" OR "Self Confidence" OR "Self-Confidence" OR (Confidence AND Self) OR Self-Concept OR "Self Concept" OR (Concept AND Self)) AND (Iran OR "Islamic Republic of Iran").
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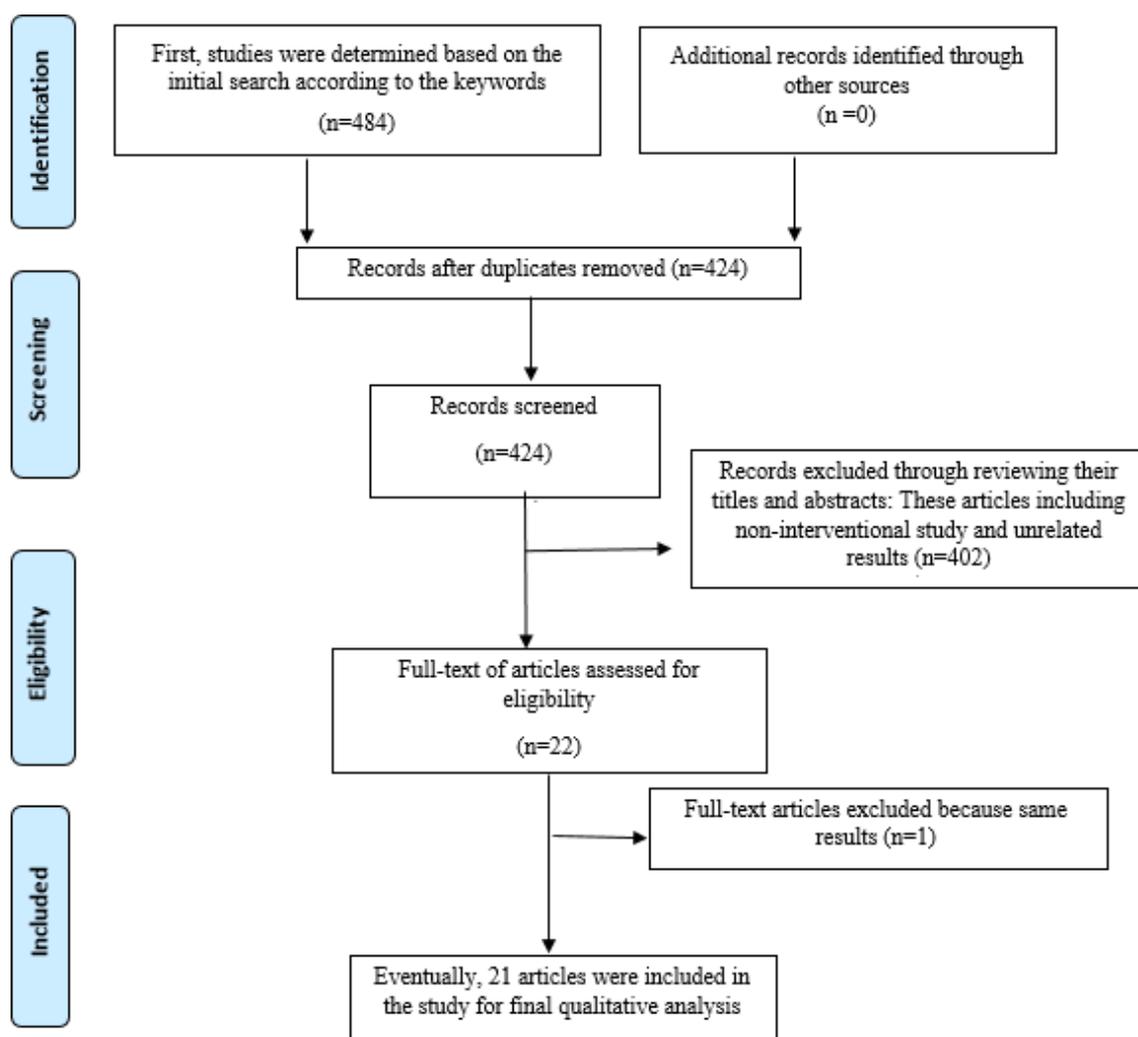
## 2-4. Quality Assessment

To access the desired information, we used the Effective Public Health Practice Project (EPHPP) tool in order to assess the quality of articles (29). The EPHPP was developed for use in public health and provide high quality systematic reviews. In addition, it is a generic tool used to evaluate a variety of intervention study designs and assesses six domains: selection bias, study design, confounders, blinding, data collection method, and withdrawals/dropouts. According to the instructions of this tool, each of these dimensions is assessed to be at three levels: weak (1), moderate (2), and strong (3). Finally, the score of each study is averaged to provide the total score. The maximum mean total score in each study is

3.00. Based on the mean of total score, the quality of studies is rated as weak (1.00–1.50), moderate (1.51–2.50) or strong (2.51–3.00) (29-31). To avoid bias, the search for articles and assessment of their quality were performed by two of our colleagues in the project.

### 2-5. Data extraction

After quality assessment, studies were analyzed qualitatively. The abstract, full text, the purpose of the study, target group, intervention, results of the 21 final articles assessed and based on the source of Bandura's Self-efficacy theory used to promote breastfeeding self-efficacy were categorized into five domains in the form of tables (**Table 2-6**) (Please see the tables at the end of paper).



**Fig.1:** Flowchart for selection of studies.

### 3- RESULTS

In this research, we reviewed all original published articles in electronic database about interventions on breastfeeding self-efficacy using Bandura's theory in Iranian mothers. In the first

stage, 484 studies (Medline: 19, Scopus: 52, Web of Science: 21, EMBASE: 32, Cochrane library: 45, Iran.doc: 28, SID: 39, Magiran: 43 and search engine of Google scholar: 205), were determined based on the initial search according to the keywords. After reviewing their titles and

abstracts and excluding unrelated studies, 21 studies with a sample size of 2,661 were assessed and categorized based on the sources of Bandura's Self-efficacy theory that was used for breastfeeding self-efficacy promotion. Categories included interventions performed by using the performance accomplishment (2 articles), vicarious experience (3 articles), verbal persuasion (11 articles), physiological responses (3 articles), and mixed interventions by using the four sources of Bandura's Self-Efficacy Theory (2 articles) (**Tables 2-6**). (*Please see the tables at the end of paper*). 52% (n=1660) of articles were written by using the verbal persuasion and guidance from influential individuals. Most studies have moderate quality with EPHPP. On the other hand, due to the nature of the intervention, it was not possible to blind participants in many studies.

### 3-1. Performance Accomplishment

Personal experiences are an immediate and powerful source for breastfeeding self-efficacy (21) which means that any direct successful personal experience enhances self-efficacy. Therefore, the implementation of any intervention in order to create a successful experience will increase breastfeeding self-efficacy. In studies, conducted using this source, kangaroo mother care (KMC) and skin-to-skin contact (SSC) have been used to create a successful breastfeeding experience and promoting breastfeeding self-efficacy (8, 32) (**Table.2**) (*Please see the table at the end of paper*).

### 3-2. Vicarious Experience

According to Bandura's theory, vicarious or observational or indirect experiences are one of the powerful sources for promoting breastfeeding self-efficacy, which can be provided by using live or symbolic modelling for learning correct way of breastfeeding and observation of other

people's performance whether live, printed or recorded (21). In a study by Akhlaghi et al., the correct way of breastfeeding in the first intervention group was taught through the educator's direct intervention and assistance, and in the second intervention group without educator's direct intervention and by using images. The results showed that indirect training of the correct way of breastfeeding by using the images had increased the mean score of breastfeeding self-efficacy significantly (33). In a study by Goodarzi et al., teaching the peers in three 2-hour sessions about breastfeeding issues and then transferring this information to the primiparous mothers, showed the significant increase in breastfeeding self-efficacy (34). In a study by Saljughy et al., intervention included implementation a role-playing in accordance with a predetermined scenario regarding the correct way of breastfeeding and breastfeeding problems. Results showed a significant increase in the mean score of breastfeeding self-efficacy (25) (**Table.3**) (*Please see the table at the end of paper*).

### 3-3. Verbal Persuasion

According to Bandura's theory, individuals are easily influenced by the persuasion, education, and guidance of influential people, such as peers, health care providers, their families, and friends (21, 22). In a study by Sharifirad et al., a 30 to 40 minute education program in three sessions based on the health belief model in the first four months after childbirth significantly increased the mean score of breastfeeding self-efficacy (35). In a study by Mirmohammad Ali et al., two intervention groups received educational package about breastfeeding with and without direct instruction of midwife. Results showed that the mean score of breastfeeding self-efficacy was higher in the direct training of breastfeeding issues by the midwife than in the indirect training and the control group (36). Ansari et al.

investigated the effect of training program consisting of two 2-hour sessions about breastfeeding by the midwife and peers. After the intervention, the results showed a significant increase in the mean score of breastfeeding self-efficacy in the intervention group (37). In a study by Nekavand et al., providing a verbal breastfeeding training program for 45 minutes in the first five hours after childbirth, as well as receiving educational breastfeeding booklet had increased the mean score of self-efficacy significantly (38). In a study by Parsa et al., four sessions of breastfeeding consultation in the first month, and three sessions via telephone for up to four months after delivery significantly increased the mean score of self-efficacy (39).

The results of a study by Moudi et al., showed no significant differences in the mean score of breastfeeding self-efficacy eight weeks after childbirth between the three groups: receiving support from peers, receiving training from health care providers, and the control group. However, the mean score of self-efficacy showed a significant difference before and after the intervention in both interventions groups (40). In a study by Mirshekari et al., training program in a 45-minute session at least 5 hours after birth for 50 mothers in the form of speech and question and answer and face to face training significantly increased breastfeeding self-efficacy score (41).

In a study by Merdasi et al., receiving short messages containing a positive statement about breastfeeding and short messages containing a negative statement about complications of not having breastfeeding in the first and second intervention groups respectively, significantly increased the mean score of breastfeeding self-efficacy as compared with that in the control group (42). In a study by Mohseni et al., six-educational sessions at home by researcher

significantly increased the mean score of breastfeeding self-efficacy as compared with that in the control group (43). The results of a study by Salehi et al., showed Motivational interview in five sessions and three telephone follow ups significantly increased the mean score of breast feeding self-efficacy score compared to education by lecture and control group (44) **(Table.4)** *(Please see the table at the end of paper).*

### **3-4. Physiological Responses**

Physiological reactions and responses can affect self-efficacy. Stress, discomfort, and anxiety can decrease breastfeeding self-efficacy through decreasing breast milk outflow and maternal feeling of insufficient breast milk volume (26). Karbandi et al., in their study, showed that training progressive muscle relaxation (PMR) for 30-45 minutes in Jacobson method had increased the breastfeeding self-efficacy significantly in mothers with preterm infants (45). In a study by Rahmatnezhad et al., baby massage training for 3 days by a trained midwife was effective in reducing stress and increasing the breastfeeding self-efficacy in mothers (46). In a study by Mohammadi and Poursaberi, Stress Inoculation Training in 8 sessions for mothers with low birth weight infants, significantly increased the mean score of breastfeeding self-efficacy in intervention group (47) **(Table.5)** *(Please see the table at the end of paper).*

### **3-5. Mixed Interventions by Using the Four Sources**

In a study by Abdollahipur et al., they compared infant crawling, for creating a successful breastfeeding experience, with a combination of other self-efficacy promoting strategies, including verbal persuasion, provision of cards containing interesting texts and attractive photos to create breastfeeding motivation in

mothers, and provision of beautiful breastfeeding clips to create vicarious experience and to relieve maternal stresses and concerns. The results showed a greater effect of the combined intervention using other sources in comparison with infant crawling (48). In a study by Araban et al., prenatal breastfeeding self-efficacy intervention included two group -based educational sessions by using four sources such as practice with dolls, peers as a role model, giving positive feedback and help normalize breastfeeding challenge had significant effect on breastfeeding self-efficacy in intervention group (49) (**Table.6**) (*Please see the table at the end of paper*).

#### 4- DISCUSSION

The present study was conducted for the first time in Iran, with the aim of systematically reviewing the effects of interventions that were performed by using the sources mentioned in Bandura's self-efficacy theory, on the promotion of breastfeeding self-efficacy. Bandura believes that it is possible to enhance an individual's self-efficacy by using the appropriate interventions, training programs, and strategies (21). The results of the current review, according to evidence, support the influence of social cognitive theory on the breastfeeding behaviors (50). In our study, we identified the effect of interventions by using all sources of Bandura's self-efficacy theory on breastfeeding self-efficacy. The results of studies, conducted by using the performance accomplishments, showed the effect of this method on the promotion of breastfeeding self-efficacy. This source is especially influential because it is based on personal experiences. In studies conducted using this source, kangaroo mother care (KMC), skin-to-skin contact (SSC), have been used to create a successful experience (8, 32). The effectiveness of these results can be due to the creation of a successful

experience in the first breastfeeding. Given that breastfeeding self-efficacy in women is usually under the influence of their previous experience, it is common for primiparous women to encounter problems in starting and continuing breastfeeding (24). Therefore, implementation of some measures in the first hours of childbirth and non-separation of the mother and the infant can lead to a successful personal experience in breastfeeding, thus promoting breastfeeding self-efficacy (51).

According to Bandura's theory, vicarious or observational or indirect experiences are one of the powerful sources for promoting breastfeeding self-efficacy (21, 22). Bandura believes that everything that is learned through direct experience is also learned through indirect or vicarious experience (33). Teaching correct breastfeeding with the midwife's direct help and indirectly through images, peer education and role-playing have been used in studies conducted with vicarious and/or observational experiences (25, 33, 34). In a study by Akhlaghi et al. (2010), indirect teaching of how to breastfeed correctly through images was more effective than teaching with the midwife's direct intervention (33). However, in a study by Mirmohammad Ali et al., (2014), direct teaching by the midwife was more effective than indirect teaching through pamphlets and CD (36). This difference can be due to the types of indirect teaching in the two studies, which was done by using the images in the study by Akhlaghi et al., and using pamphlets and CDs in the study by Mirmohammad Ali et al.'s study (33, 36). The effectiveness of a study by Saljoghi et al., (2016) can be due to the use of the active learning method; i.e. role-playing. Because it will allow learners to participate actively in the learning process and increase their skills (25). In a study by Goodarzi et al., peer education has been use to promote breastfeeding self-efficacy. According to the results of this

study, if the trainer has a common experience with learners, the effectiveness of the intervention increases (34). The high effectiveness of verbal persuasion can be due to the high impact that influential acquaintances' persuasion and guidance have on individuals (23). Although this source was referred to as verbal persuasion and guidance in Bandura's theory, given the interventions performed in the studies as well as the advancement of technology, it seems that any guidance and advice received from influential individuals will increase the mean score of self-efficacy. Studies in this category were conducted by using the persuasion and guidance from health care providers, peers and researcher in the form of face-to-face education, CD or pamphlet, telephone and message-framing (35-44, 52).

In a study by Khorshidifard et al., (2015), although both methods of education have increased mean score of self-efficacy, the result showed that face-to-face education is more effective. This could be due to the fact that in this approach, the participant can freely ask and answer which can be a powerful source for increasing self-efficacy (52). In the study by Salehi et al., Motivational interviews increased the breast feeding self-efficacy score, this finding was consistent with the third step of self-efficacy theory and is consistent with the results of the study by Rudder et al. (44, 53). In studies conducted by using the physiological and psychological responses source, relaxation, baby massage training and mindfulness-based training programs have been used to reduce stress, anxiety and fatigue (45-47). In the study of Rahmatnezhad et al., (2018), it has been stated that the contact between mother and baby by massage will reduce maternal stress and thereby improve breastfeeding self-efficacy (46). Physiological reactions and responses can affect self-efficacy. Stress, discomfort, and anxiety can decrease breastfeeding self-efficacy

through decreasing breast milk outflow and maternal feeling of insufficient breast milk volume. In addition, the effect of relaxation on stress relief is a proven fact (54). All four sources mentioned in Bandura's self-efficacy theory have been used in two studies (48, 49). This information was provided through sharing experiences of other successful breastfeeding mothers as role model, practicing correct breastfeeding using breastfeeding dolls and pillows, giving positive feedback, as well as training stress reduction skills. The results of two studies showed the effects of these interventions on breastfeeding self-efficacy. Interventions used in these studies, have been performed through workshops, educational sessions, baby crawling to mother's breast and completion of workbooks containing information according to the following sources: performance accomplishments, vicarious or observational experiences, verbal persuasion and guidance, and physiological and psychological responses (48, 49). Given the different needs of women, it seems that providing a training program using all four sources is much more effective than using a particular source. Most studies indicate the effects of interventions on breastfeeding self-efficacy. Time of intervention and the studied samples can affect the breastfeeding self-efficacy results in studies. Usually, primiparous women have lower self-efficacy than multiparous women, which is due to their lack of prior experience (55). The research sample in most studies was women in postpartum period. Women are usually under the protection of midwives, nurses and/or families during the early time after childbirth, which will lead to a higher perceived self-efficacy among them.

#### **4-1. Strengths and Limitations**

This review has several strengths. This is the first work to systematically review the

effect of interventions on breastfeeding self-efficacy using Bandura's theory in Iranian mothers. Comprehensive search in multiple electronic databases in a wide spectrum of time is another strong point. One of the limitations of this study was failure to search in grey literature due to lack of access to such documents. Hence, we suggest conducting other studies, where it is possible to access such documents. In addition, due to high heterogeneity, meta-analysis was not possible.

## 5- CONCLUSIONS

The results of this review indicate the effectiveness of interventions performed by using the sources of Bandura's self-efficacy theory in breastfeeding self-efficacy. Interventions by using the verbal persuasion are the most common and effective interventions. In addition, given the ability to implement these interventions at baby-friendly hospitals, it seems that implementation interventions by using these sources during prenatal and postnatal periods, in order to promote breastfeeding self-efficacy, will increase the prevalence and duration of breastfeeding.

**6- CONFLICT OF INTEREST:** None.

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**Table-2:** General characteristics of studies that were performed by using the performance accomplishments.

Authors, Year of publication, Reference	Study design	Study design	Target group	Intervention	Follow-up duration	Results	Quality Rating EPHPP
Karimi et al., 2014 (8)	Clinical trial	Clinical trial	72 primiparous women in Kangaroo mother care group and control group	Skin-to-skin contact between the mother and baby with Kangaroo mother care	2 and 3 months after delivery	Kangaroo mother care significantly increased the breastfeeding self-efficacy score.	Moderate
Karimi et al., 2014 (32)	Clinical trial	Clinical trial	114 primiparous women in Skin-to-Skin contact group and control group	Skin-to-skin contact between the mother and baby	28 days after delivery	Skin-to-Skin contact between the mother and baby significantly increased the self-efficacy score.	Moderate

EPHPP: Effective Public Health Practice Project.

**Table-3:** General characteristics of studies that were performed by using vicarious (observational) experiences.

Authors, Year of publication, Reference	Study design	Study setting	Target group	Intervention	Follow-up duration	Results	Quality Rating EPHPP
Akhlaghi et al., 2010 (33)	Single-blind experimental study	Mashhad	124 primiparous women in direct training group, indirect training group, and control	Direct teaching of the correct way of breastfeeding through the midwife's direct intervention, and indirect teaching with the aid of images	1, 4, and 8 weeks after delivery	Teaching the correct way of breastfeeding indirectly and without the midwife's direct intervention increased the self-efficacy score.	Moderate
Goodarzi et al., 2015 (34)	Cluster randomized controlled trial	Damghan	A total of 107 primiparous women in peer training group, and control group	Teaching the breastfeeding issues by peers.	6 weeks after delivery	The results showed a significant increase in the score of breastfeeding self-efficacy in the peer-training group.	Moderate
Saljughi et al., 2016 (25)	Clinical trial	Isfahan	74 pregnant women in role playing group and control group	Learning through role-playing	1 week and 1 month after childbirth	Learning through role-playing increased the score of breastfeeding self-efficacy.	Moderate

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**Table-4:** General characteristics of studies that were performed by using the verbal persuasion and guidance.

Authors, Year of publication, Reference	Study design	Study setting	Target group	Intervention	Follow-up duration	Results	Quality Rating EPHPP
Sharifirad et al., 2011 (35)	Pre-test–post-test quasi-experimental	Khorramabad	88 pregnant women in breastfeeding education group and control group	A breastfeeding education program based on the health belief model	1 and 4 months after childbirth	Breastfeeding education program based on the health belief model significantly increased the mean score of breastfeeding self-efficacy.	Strong
Mirmohammad Ali et al., 2014 (36)	Single-blind experimental study	Saveh	300 primiparous women in 3 groups: received educational package with instruction, received educational package without instruction and the control groups.	Educational package with and without midwife instruction.	3 months after delivery	Direct education and with instruction significantly increased the score of breastfeeding self-efficacy.	Strong
Ansari et al., 2014 (37)	Randomized controlled trial	Ansari	120 primiparous women in Educational program group and control group	Two 2-hour training sessions about breastfeeding	1 month after delivery	The results showed a significant increase in the mean score of breastfeeding self-efficacy in the intervention group.	Strong
Nekavand et al., 2014 (38)	Randomized clinical trial	Tehran	100 primiparous women in Face-to Face breastfeeding education group and control group	Verbal breastfeeding training and receiving booklet	1 month after delivery	Verbal breastfeeding training and receiving booklet significantly increased the mean score of breastfeeding self-efficacy.	Moderate
Moudi et al., 2015 (40)	Controlled clinical trial	Mashhad	93 primiparous women in the peer training group, health care provider training group, and the control group	Breastfeeding education by peers and health care provider	8 weeks after delivery	There was no significant difference in self-efficacy scores between the three groups at the end of the eighth postpartum week.	Moderate
Parsa et al., 2016 (39)	Randomized clinical trial	Hamedan	104 primiparous women telephone consultations group and control group	In-person and telephone consultations about breastfeeding	4 months after childbirth	Breastfeeding consultation had significant increase in the mean score of breastfeeding self-efficacy.	Moderate

Mirshekari et al., (2016) (41)	Experimental study	Tehran	100 nulliparous women in Exclusive breastfeeding education group and control group	Exclusive breastfeeding education and educational booklet	After education	Breast feeding education significantly increased the breastfeeding self-efficacy score in case group	Moderate
Khorshidifard et al., 2017 (52)	Experimental study	Iran	270 pregnant women in small-group education, face to face education group and control group	Breastfeeding education through small group education and face-to-face education.	After education and after child birth	The results showed a significant increase in the mean score of breastfeeding self-efficacy in both intervention groups. But face to face education is more effective	Moderate
Merdasi et al., 2017 (42)	Quasi-experimental study	Shushtar	210 primiparous women in gain-framed group, loss-framed group and control	Message-Framing	3-5 days, 4 and 8 weeks after delivery	The results showed a significant increase in the mean scores of self-efficacy in the two intervention groups compared to control group.	Moderate
Mohseni et al., 2018 (56)	Randomized clinical trial	Shiraz	65 primiparous women in educational programs group and control group	Six sessions of educational programs about breast feeding at home by researcher	1, 2 and 6 weeks after delivery	The results showed a significant increase in the mean scores of self-efficacy in the intervention group.	Moderate
Salehi et al., (2019) (44)	Randomized clinical trial	Torbat Heydarieh	210 primiparous women in Motivational interview group, lecture group and control group	Motivational interview and education by lecture	2, 4 and 6 months after delivery	Motivational interview was found to be more effective in enhancing breastfeeding self-efficacy.	Strong

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**Table-5:** General characteristics of studies that were performed by using the psychological responses.

Authors, Year of publication, Reference	Study design	Study setting	Target group	Intervention	Follow-up duration	Results	Quality Rating EPHPP
Karbandi et al., 2014 (45)	Randomized clinical trial	Mashhad	60 mothers with preterm infants; in Progressive muscle relaxation group and control group	Progressive muscle relaxation	4 and 8 weeks after delivery	Progressive muscle relaxation significantly increased the mean score of breastfeeding self-efficacy.	Moderate
Rahmatnezhad et al., 2018 (46)	Quasi-experimental	Urmia	120 mothers with hospitalized neonates in baby massage training group and control group	Three educational sessions about baby massage training	3 days after educational intervention	Baby massage training (BMT) is effective in increasing the breastfeeding self-efficacy and decreasing perceived stress.	Moderate
Mohammadi and Poursaberi, 2018 (47)	Randomized clinical trial	Kermanshah	100 mothers with low birth weight infants in stress inoculation training group and control group	Eight sessions about stress inoculation training	At the end of intervention	Stress inoculation training significantly increased the mean score of breastfeeding self-efficacy.	Strong

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**Table-6:** General characteristics of studies that were performed by using the four sources.

Authors, Year of publication, Reference	Study design	Study setting	Target group	Intervention	Follow-up duration	Results	Quality Rating EPHPP
Abdollahipur et al., 2017 (48)	Quasi-experiential	Dezful	120 primiparous pregnant women in three groups (intervention 1, intervention 2, and control)	Infant crawling technique and use of other breastfeeding self-efficacy promotion strategies	Immediately after childbirth	The results showed a significant increase in breastfeeding self-efficacy in three groups. Only the intervention group based on educational strategies showed a statistically significant difference compared to the control group.	Moderate
Araban et al., 2018 (49)	Randomized controlled trial	Ahvaz	120 low-risk, nulliparous women in 2 groups (intervention and control)	Prenatal breastfeeding self-efficacy intervention by using 4 sources	8 weeks after delivery	Prenatal breastfeeding self-efficacy intervention significantly increased the mean score of breastfeeding self-efficacy.	Strong

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