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Complementary Medicines in the Treatment of Breastfeeding Problems: An Overview

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Abstract

Background: Breastfeeding problems can lead to early cessation of breastfeeding. Given the importance of maintaining exclusive breastfeeding, this study was conducted to review complementary medicines for treating breastfeeding problems.

Objectives: The goal of this research is to review complementary medicines on the treatment of breastfeeding problems such as nipple trauma, pain, mastitis, and breast engorgement.

Methods: To identify clinical trials on the treatment of breast engorgement in postpartum women, domestic and international databases, including PubMed, ISI Web of Science, Embase, Cochrane, and Scopus, were systematically searched without time limits until September 10, 2024. The key search terms were (herbal OR complementary OR Acupressure OR Massage) AND (breastfeeding complications OR breastfeeding problems). Only articles published in the English language were included. Additionally, all clinical trials and systematic reviews are evaluating the effect of Complementary therapies on breastfeeding problems. The quality of articles was evaluated using the Jadad scale.

Results: Four potentially relevant systematic reviews were identified, yielding 21 articles for this overview. Ginger (Commiphora mukul), Hollyhock leaf, Oketani, and warm compression, in the form of massage, were found to be effective. There is a significant difference between cold compression and hot fomentation in relieving breast engorgement among postnatal mothers. Two studies have shown that cabbage is more effective than routine care. The results of two other studies did not show any difference between the two groups. Overall, the findings on the effect of acupressure on breast engagement are controversial, and there is no consensus about the effect of hot or cold compresses. Herbal medications had a positive effect on the treatment and prevention of fissure and nipple pain. Peppermint water was more effective than breast milk, lanolin ointment, or placebo in preventing nipple cracks. Different types of breast massage were beneficial in relieving immediate pain and resolving symptoms, as well as lowering the rates of mastitis and three scores measuring the severity of inflammation (tension, erythema, and pain). Pain scores did not significantly change after 4 weeks of auricular acupressure.

Conclusion: Massage, acupuncture, and herbal medicines can have beneficial effects on improving breastfeeding problems. Given the interest of patients in complementary medicine and the low cost of this treatment technique, it can be used as a valuable technique to improve engorgement. However, caution should be exercised in interpreting the findings due to the limited number of studies and their small sample size.

Keywords: Problems, Breastfeeding, herbal, Complementary medicines.

1. Background

Breastfeeding has both short-term and long-term benefits for the growth and health of infants and their mothers (1). The benefits for infants can be partially explained by the fact that breast milk contains a combination of nutrients and other bioactive substances that

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protect against infectious and non-communicable diseases. As for mothers, these benefits include a lower risk of ovarian, breast, and endometrial cancer, as well as type 2 diabetes mellitus (2).

Breastfeeding problems, including nipple fissures, constitute a major postpartum challenge (3); necessary measures should be adopted to solve the associated problems and prolong and effectively maintain exclusive breastfeeding(3). There is evidence of the effectiveness of some methods for preventing and resolving breastfeeding problems. These methods include providing education for mothers on the issues of breast care, correct nursing, yet proper size bras techniques for increasing lactation, manual milking, and storing milk, breast binders or sports bras(4). Additionally, some studies suggest that applying warm or cold compresses, taking a warm shower, or using analgesics such as ibuprofen and acetaminophen may help alleviate discomfort (5, 6). The effectiveness of treatments such as hot and cold compresses, acupuncture, oxytocin spray, lymphatic drainage of the breast, compressed cabbage leaf, acupressure, and Gua-sha massage has been studied. The results, however, are conflicting, and there is insufficient evidence to support the effectiveness of these therapies (7). Auricular acupressure on acupoints (including Shenmen, central rim, breast, and endocrine) increased the pressure pain threshold (8). Treatment with topical Curcumin decreased mastitis (9). Three systematic reviews assessed the effect of herbal medications on fissure and nipple pain and showed a positive effect on the treatment and prevention (10) (11) (12). Another systematic review showed that different types of breast massage were beneficial in relieving pain, blocked ducts, breast engorgement, and mastitis (3), given the various clinical trials and systematic reviews conducted on the effects of complementary medicines on breastfeeding problems. A comprehensive overview is required to summarize the results. The goal of this research is to review complementary medicines for the treatment of breastfeeding problems.

2. Objective

The goal of this research is to review complementary medicines on the treatment of breastfeeding problems such as nipple trauma, pain, mastitis, and breast engorgement.

3.Methods

Search strategy

To find clinical trials and systematic reviews about breastfeeding problems and interventions performed on problems, domestic databases including Magiran, IranDoc, SID, IranMedex, Complementary Medicine Magazines, Iran Clinical Trial Registration Center (IRCT) as well as foreign databases such as PubMed, ISI Web of Science, Embase, Cochrane and Scopus were systematically searched without time limits until September 10, 2024. The key search terms were (herbal OR Complementary therapies OR alternative medicine OR herbal medicine OR Acupressure OR Hollyhocks OR ginger or Cold compression OR hot fomentation OR Massage) AND (breast engorgement OR Complications OR problems OR Mastitis OR breast pain OR nipple fissure OR nipple cracks OR nipple trauma OR nipple pain). Only articles published in the English language were included.

Inclusion criteria:

Research interventions: All clinical trials and systematic reviews evaluating the effect of Complementary therapies on breastfeeding problems, such as breast engorgement, mastitis, breast pain, nipple fissure, nipple cracks in latching mothers.

Research comparators:

The control groups in the searched studies received herbal medicine, a placebo, and no intervention.

Outcomes:

Outcomes were measured, including pain, breast engorgement, mastitis, nipple fissure, nipple cracks.

Selection of studies:

Two reviewers collected data from each report. Also, they worked independently. There were no processes in place for obtaining or confirming data from study investigators. Studies were selected in two steps. The screening step (first), in which titles and abstracts of the articles were reviewed, and all relevant papers were selected to be further examined in the next stage. If decision-making based on the title and summary of an article was difficult, the full text was read. In the second step, the articles were thoroughly read to determine whether they met the criteria required for inclusion in the systematic review. Additionally, to identify other related articles, the references of the selected articles were carefully examined. Any disagreement over data extracted from the articles was resolved through discussion or consultation with a third party.

Data extraction*:*

The researchers designed a form to extract data from the articles. Two members of the research team were responsible for extracting data and listing it in the table. The data included the name of the author(s), country, Year of publication, dropout rate, type of intervention and control, sample size in the intervention and control groups, length of treatment (in weeks), adverse effects, and main findings (Tables 1 and 3). Disagreements over the extracted data were resolved through discussion or consultation with a third party.

Table 1. Characteristics of the studies included in the overview

Author, Year, Country	Duration	Mean Age (Y)	Intervention (N)	Control (N)	Type of study	Treatment	Control	Main findings
Afshariani, et al, 2014, Iran	3 day	29	n=31	n=31	randomized, controlled, clinical trial	curcumin topical cream,	topical moisturizer as a placebo	lower rate of moderate (p=0.019) and mild (p=0.002) mastitis
Han et al, 2024, South Korea	4 weeks	33	N=26	N=26	Clinical trial	acupoints, including Shenmen, central rim, breast, and endocrine	Pressure on acupoints not related to breast pain.	Pain scores did not significantly change after 4 weeks of auricular acupressure.
Heberle, et al, 2014, Brazil	15 min	>18	8	8	randomized, controlled, clinical trial	massage and electromechanical pumping	. manual methods	Negative temperature gradient of 0.3°C between the pre- and post-treatment periods in the experimental group. Breasts with intense engorgement were 0.7°C warmer when compared with moderate engorgement.
Chiu et al, 2010, Taiwan	30 min	30.70 ±5.79	26	26	randomized controlled trial	The Gua-Sha protocol	hot packs and massage	Gua-Sha therapy may be used as an effective technique in the management of breast Engorgement.
Kvist et al, 2007, Sweden	2/7 days		70 70	70	randomised, non-blinded, controlled trial	Group 2: essential care and treatment by acupuncture needles group 3: essential care and treatment with acupuncture needles	Group 1: essential care and the use of oxytocin spray	A significant difference was observed between the non-acupuncture group and the two acupuncture groups on days 3 and 4 of the contact period. However, there was no significant difference between treatment groups in terms of the number of contact days before the mother felt well enough to stop visiting the breastfeeding clinic.
Monnazami et al, 2019, Iran	2 days	28.6±76 .23	38	38	randomized, controlled, clinical trial	ginger compress	Routine Care	Breast engorgement severity decreased significantly in the groups receiving ginger compresses compared to the group receiving routine care.
Dehghani et al, 2017, Iran	2 days	28.6±4. 37	48	46	randomized, controlled, clinical trial	oketani massage	Routine Care	The effect of Oketani massage on alleviating breast engorgement was greater than

								that of routine care.
Zolala et al, 2020, Iran	2 days	36±5·30 58.	50	50	randomized, double blind, controlled, clinical trial	Commiphora mukul cream	Placebo cream	Commiphoramukul cream was able to improve breast engorgement, and therefore can be recommended for the treatment of breast engorgement.
Kamali et al, 2013, Iran	2 days	26±4/7 25/2±5/ 19	35	35	randomised-controlled trial	acupressure	Hot and cold compress	Intermittent compress(hot and cold) is more effective than acupressure in decrease in the intensity of breast hyperemia
Khosravan et al, 2015, Iran	2 days	27.15 ± 5.102	20	20	randomized, controlled, clinical trial	hollyhock compress	routine interventions and a warm compress before nursing, and a cold compress after nursing	The severity of breast engorgement was significantly lower in the group receiving hollyhock leaf, along with routine interventions. Also, a significant relationship was observed between length and severity of breast engorgement.
Chaitanya et al, 2014, Indian	1 days	has not been stated	20	20	Quasi-experimental approach, pre and post-test design	Cabbage leaves	Routine Care	The cabbage leaves application was effective In control of breast engorgement.
Lim et al, 2015, Korea	2 days	32.7±2. 78	20	20 20	randomized controlled trial	Early breast care plus cabbage compress (CCEBC)	2) Early breast care (EBC) 3) General nursing breast care (GNBC)	. In comparison to GNBC, the pain level was significantly lower in both CCEBC and EBC 4 days after delivery.
Manna et al, 2016, Indian	3 days	24-29	30	30	quasi-experimental approach,	Hot Fomentation	Cold compression	Any significant difference was not observed between Cold compression vs hot fomentation on Breast Engorgement among Postnatal ·Mothers
Thomas et al, 2017, Indian	3 days	21-30	30	30	quasi-experimental approach,	cabbage leaves	routine care	Routine care (warm compress) was more effective than chilled cabbage leaves in improving breast engorgement in postnatal mothers.
Wong et al, 2017, Singapore	6 mount	33.4 ±4.1	76	76 76	randomized controlled three-group pre-test and repeated post-test	cold cabbage leaves	Group 2) cold gel packs Group 3) routine care	a significant pain relief and hardness of breasts was observed in mothers at the cabbage leaf group 2 h after the second application, compared to those in the gel pack group
Zagloul et al, 2020, Egypt	3 days	30.0±3. 27	30	30	intervention al quasi-experimental	cold cabbage leaves	hot compresses	Both cabbage leaves and hot compresses are found to be effective in improving pain and breast engorgement. However, a hot compress was more effective than a cabbage leaf compress in mitigating pain and breast engorgement.
Ketsuwan et al, 2018, Thailand	20 minutes	27.9 ± 6.3	250	250	randomized controlled trial	The herbal compress balls (Z. cassumunar Roxb. rhizomes C. longa L. rhizomes, Cymbopogon citratus (DC) Stapf leaves and leaf sheaths, Acacia concinna (Willd.) DC leaves, Tamarindus indica L. leaves, Citrus hystrix DC peels, Blumea balsamifera (L.) DC leaves, salt, and camphor)	Hot compress	Breast engorgement severity dropped significantly in the groups receiving ginger compress in comparison to the group receiving routine care

Abbreviations: CEE, Conjugated equine estrogens 0.625 mg/g; L, low dose; H, high dose; P, placebo; MV, maturation value; HA, Hyaluronic acid

Table 2. The quality of studies was evaluated according to the Jaded scale

Author	Randomization			Blinding			Report of dropping out
	Mention randomization	Appropriate Method	Inappropriate Method	Mention blinding	Appropriate method	Inappropriate method	
Afshariani, et al,	*	*	-	*	*	-	*
Han et al	*	*	-	-	-	-	*
Heberle et al	*	*	-	-	-	-	*
Chiu et al	*	*	-	-	-	-	*
Kvist et al	*	*	-	-	-	-	*
Monazzami et al	*	*	-	-	-	-	*
Dehghani et al	*	*	-	-	-	-	*
Zolala et al	*	*	-	*	*	-	*
Kamali et al	*	*	-	-	-	-	*
Khosravan et al	*	*	-	-	-	-	*
Chaitanya et al	*	-	*	-	-	-	-
Lim et al	*	*	-	-	-	-	*
Manna et al	*	-	-	-	-	-	*
Thomas et al	-	-	-	-	-	-	-
Wong et al	*	*		-	-		*
Zagloul et al	*	-	-	-	-	-	*
Ketsuwan et al	*	*	-	-	-	-	-

Table 3. Characteristics and quality assessment of the four meta-analyses included in the overview

First Author	Number studies	Shorten title	results	1	2	3	4	5	6	7	8	9	10	11
Anderson et al, 2019 (3).	6 studies	breast massage ON pain, blocked ducts, breast engorgement, and mastitis.	Different types of breast massage were beneficial in relieving immediate pain and resolving symptoms	no	yes	yes	no	yes	yes	yes	no	yes	yes	yes
Niazi et al.,2021(10)	22studies	Effect of topical treatment with herbal medicines on the prevention and relief of nipple fissure and pain in breastfeeding	Herbal medications had a positive effect on the treatment and prevention of fissure and nipple pain	no	yes	yes	no	yes	yes	yes	no	yes	yes	yes
s adi & Kariman, 2018 (11)	11studies	Herbal prevention and treatment of nipple trauma and/or pain in Iranian studies: a systematic review	Herbal medicines were the most effective treatments for nipple trauma and or pain	no	yes	yes	no	yes	yes	yes	no	yes	no	yes
Saffari et al, 2022) (12)	10studies	Herbal medicines for nipple fissure	was effective in treating nipple fissure	no	yes	yes	no	yes	yes	yes	no	yes	no	yes

1. Was an a priori design provided?
2. Was there duplicate study selection and data extraction?
3. Was a comprehensive literature search performed?
4. Was the status of publication (i.e., grey literature) used as an inclusion criterion?
5. Was a list of studies (included and excluded) provided?
6. Were the characteristics of the included studies provided?
7. Was the scientific quality of the included studies assessed and documented?
8. Was the scientific quality of the included studies used appropriately in formulating conclusions?
9. Were the methods used to combine the findings of studies appropriate?
10. Was the likelihood of publication bias assessed?
11. . Was the conflict of interest stated?

Quality assessment of studies

The quality of articles was evaluated using the Jadad scale, which consisted of three criteria: randomization, blinding, and reporting of removed cases. The total score of this scale ranges from 3 to 5 points. In this review study, all studies with a score of less than 3 were excluded (13) .In this scale,

1 point is awarded for the use of randomization by authors, and another point is added or deducted for the proper or improper execution of randomization, respectively. Similarly, 1 point is awarded for blinding, with an additional point being considered for a proper explanation of the blinding process (Figure 1). The maximum and minimum scores are 0 and 5, respectively. Higher scores indicate a lower risk of bias (and therefore higher methodological quality). A score of 2 or less indicates a low-quality report, and a score of 3 or more indicates a high-quality report.

Two independent reviewers rated the methodological quality. The methodological quality of the systematic review was evaluated using the measurement tool for the assessment of multiple systematic reviews (AMSTAR). This checklist contained 110 items, which are listed in Table 3. Disagreements in the quality assessment of articles were settled by discussion or consultation with a third party. Disagreements in the quality assessment of articles were settled by discussion or consultation with a third party.

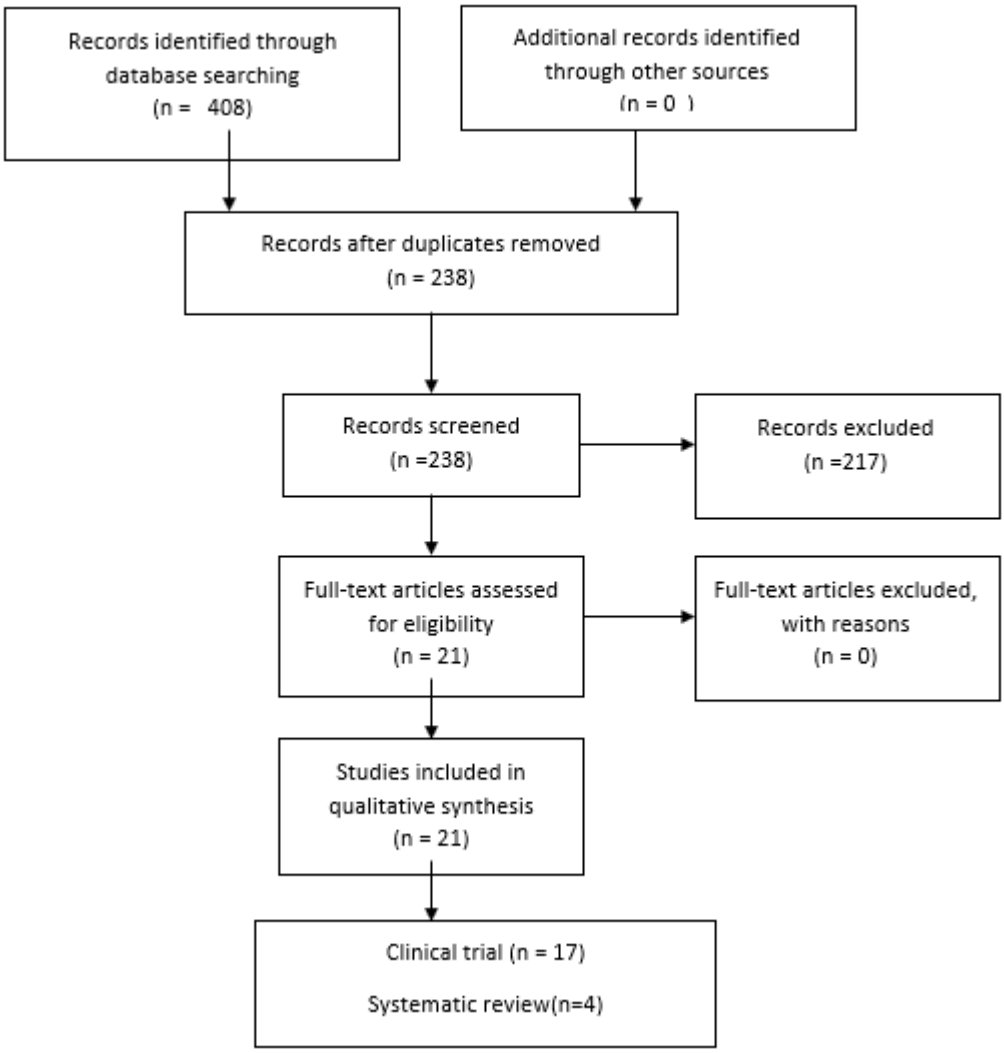

Figure1. flowchart of the search process

4. Results

After removing irrelevant systematic reviews and articles, four potentially relevant new systematic reviews and 21 articles were selected for this overview.

Complementary therapy for nipple trauma, pain, and mastitis

The first systematic review evaluated the effect of topical treatment with herbal medicines (olive oil, aloe vera, calendula officinalis, jujube oil, mint, frankincense, saqez, and Portulaca oleracea) on the prevention and relief of nipple fissure and pain in breastfeeding women. The results of the study showed that herbal medications had a positive effect on the treatment and prevention of fissure and nipple pain (10). The second systematic review was published in 2018. This finding showed that herbal medicines included Pistacia atlantica (Saqez), Ziziphus jujuba, Curcumin, menthol, Aloe vera, and Calendula officinalis (Calendit-E). Findings of this review showed that herbal medicines were the most effective treatments of nipple trauma and or pain. In one study, peppermint water was more effective than breast milk, lanolin ointment, or placebo in preventing nipple cracks (11).The third systematic review, with 10 studies, was published in 2020. Herbal medicines, such as purslane, Aloe vera, olive oil, frankincense, Pistacia atlantica, Curcumin, and Ziziphus jujuba, were effective in treating nipple fissures (12). The fourth systematic review, with six studies, assessed the effectiveness of breast massage for the treatment of women with breastfeeding problems such as pain, blocked ducts, breast engorgement, and mastitis. Results showed that different types of breast massage were beneficial in relieving immediate pain and resolving symptoms. However, the breast massage technique was explained in detail in the included studies in the systematic review (3). In Han et al, Pain scores did not significantly change after 4 weeks of auricular acupressure on acupoints (including Shenmen, central rim, breast, and endocrine.) However, the pressure pain threshold for the upper left ($Z = -2.202$, $p = .028$) and upper right ($t = 2.613$, $p = .012$) areas of the right breast showed an increasing significant in the intervention group(8). In Afshariani et al., a Lower rate of moderate ($p = 0.019$) and mild ($p = 0.002$) mastitis was reported, along with lower scores for tension ($p < 0.001$), erythema ($p < 0.001$), and pain ($p < 0.001$) in patients treated with topical Curcumin after 72 hours of therapy (9).

Complementary therapy for interventions on breast engorgement

Several studies assessed the effect of cabbage on breast engorgement among postpartum mothers. Lim et al. compared three groups: CCEBC (cabbage compression early breast care), EBC (early breast care), and GNBC (general nursing breast care) in terms of breast pain and breast hardness. In comparison to GNBC, the pain level was significantly lower in both CCEBC and EBC 4 days after delivery ($P < 0.05$). Breast hardness was significantly lower in the CCEBC group than in the EBC and GNBC groups. Breast skin temperature was not significantly different among the three groups (14). In the second study, significant pain relief (mean difference = -0.53, $p = 0.005$) and reduced breast hardness (mean difference = -0.35, $p = 0.003$) were observed in mothers in the cabbage leaf group 2 hours after the second application compared to those in the gel pack group (15).

Contrary to the above two studies, the effect of cabbage leaves on breast engorgement relief was similar to the control group (routine care) (16). Routine care (warm compress) was more effective than chilled cabbage leaves in improving breast engorgement ($p=0.001$) in postnatal mothers (17). In Zagloul et al.'s study, both cabbage leaves and hot compresses are found to be effective in improving pain and breast engorgement. However, a hot compress was more effective than a cabbage leaf compress in relieving pain and breast engorgement (18). One study

assessed the effect of Hollyhock leaf on breast engorgement. In Khosravan et al.'s study, participants were divided into two groups: an intervention group and a control group. Both groups received routine interventions and warm compresses before nursing and a cold compress after nursing. In the intervention group, however, Hollyhock compress was also used. According to the results, the severity of breast engorgement was significantly lower in the group receiving Hollyhock leaf along with routine interventions ($P < 0.001$). Additionally, a significant relationship was observed between time and the severity of breast engorgement ($P < .001$) (19).

One study assessed the effect of ginger on breast engorgement. In Monazzami et al.'s research, the severity of breast engorgement decreased significantly in the groups receiving ginger compresses compared to the group receiving routine care ($p < 0.001$) (20). One study assessed the effect of Commiphora mukul Cream on breast engorgement. A double-blind randomized controlled trial by Zolala et al was conducted with 100 breastfeeding women, whose symptoms of breast engorgement. Mukul cream group or placebo. Both groups were instructed to rub one fingertip of cream on each breast after nursing eight times a day for two days. Two days after the intervention, 60% of women in the drug group and 22% of those in the placebo group scored zero on the breast engorgement checklist, with a significant difference between the groups ($P < 0.001$) (21).

Three studies assessed the effect of massage on breast engorgement. The effect of Oketani massage on alleviating breast engorgement was greater than that of routine care. ($P<0.001$) (22). Additionally, in the second study, no significant difference was found between cold compresses and hot fomentations in breast engorgement among postpartum mothers (23).

Three studies assessed the effect of acupressure or acupuncture on breast engorgement. Kvist et al. divided patients into three groups: oxytocin group received essential care and oxytocin spray; Acupuncture Group 1 received essential care together with acupuncture needles applied to HT (heart) 3 and GB (gallbladder) 21, and Acupuncture Group 2 received essential care together with acupuncture needles applied to HT3, GB 21 and SP 6 acupoints. A significant difference was observed between the non-acupuncture group and the two acupuncture groups on days 3 ($p = 0.03$) and 4 ($p < 0.01$). However, there were no significant differences between treatment groups in terms of the number of contact days before the mother felt well enough to stop visiting the breastfeeding clinic (24). Chiu et al. conducted a randomized controlled trial on 54 postpartum women with breast engorgement problems included. ST16, ST18, SP17, and CV17 acupoints were lightly scraped seven times in two cycles. The control group received hot packs and a 20-minute massage .Except for body temperature, the experimental group reported a greater reduction in breast temperature and breast engorgement, pain level, and discomfort compared to the control group (25). Kamali et al. randomly assigned lactating mothers to either an acupressure (jangling) or an intermittent hot and cold compress group. The results revealed that hot and cold compresses were more effective than acupressure in mitigating the severity of breast hyperemia (26).

Three studies assessed the effect of hot and cold compresses on breast engorgement. In the study by Zagloul et al., hot compresses were more effective than cabbage leaf compresses in improving pain and breast engorgement (18). Manna et al.did not report any significant difference between cold compress (damp pad soaked in cold water (temperature- 59 ℉ or 15 ℃.)) and hot fomentation (damp cotton cloth soaked with hot water [temp between 43 ℃

(109.4 ℉) to 46 ℃ (114.8 ℉)]) in breast engorgement relief among postnatal mothers (23). According to Ketsuwan et al., the mean difference of breast engorgement pain before and after treatment was significantly different between herbal (Plai or Cassumunar ginger (Zingiber cassumunar Roxb.), turmeric (Curcuma longa L.), and camphor and hot compress groups (27).

5. Discussion

This study aims to assess complementary medicines for the treatment of breastfeeding problems. However, a significant number of the included studies originated from traditional Persian Medicine.

Ginger (Commiphora mukul), hollyhock leaf, oketani, and warm compression in the form of massage were found to be effective. Additionally, there was a significant difference between cold compression and hot fomentation in relieving breast engorgement among postpartum mothers. Previous studies have reported conflicting results. Two studies have shown that cabbage is more effective than routine care. Herbal medications had a positive effect on the treatment and prevention of fissure and nipple pain peppermint water was more effective than breast milk, lanolin ointment or placebo in preventing nipple cracks that different types of breast massage were beneficial in reliving immediate pain and resolving symptoms, lower rate mastitis and lower rate of three scores the inflammation severity (tension, erythema and pain). Pain scores did not significantly change after 4 weeks of auricular acupressure. A systematic review published in 2018 based on studies conducted in Turkey concluded that women experienced problems with breastfeeding and that more prenatal education/counselling/monitoring was used in reducing problems(4).

Breast engorgement typically occurs between 24 and 72 hours postpartum, with a normal range of one to seven days. However, peak symptomatology averages three to five days postpartum. Secondary engorgement typically occurs later if the mother's milk supply exceeds the amount of milk sucked by her infant (28). Breast engorgement is a common physiological problem in breastfeeding mothers (3), with its reported incidence ranging from 20 to 77% in various studies (15, 29) More than two-thirds of women report breast engorgement on the fifth day, but it has been reported 9 to 10 days after delivery as well (4). According to a study by Postotina et al., a Lack of peripheral prolactin receptor stimulation in the breast provokes hormonal imbalance, i.e., an increased level of prolactin in combination with a decline in oxytocin secretion and the concentration of placental steroids, primarily progesterone. According to the data, the serum progesterone concentration 3 and 4 days after delivery in women with normal galactopoiesis is 6.8±1.8 nmol/L, and the prolactin concentration is 5182±1117 mIU/L. However, in breast engorgement, the mean progesterone levels are significantly low (5.5 ± 1.4 nmol/L), and the mean prolactin levels are high (6632 ± 1074 mIU/L). Severe swelling, breast engorgement, and tenderness are linked to hormonal imbalances that impair both breast milk expression and breastfeeding (30).

Breast engorgement is caused by the fullness and stiffness of the breasts, which is associated with breast pain and tenderness(5). Furthermore, it affects the onset and continuation of lactation (25). In breast engorgement, the skin on the breast often appears shiny, and nipples look flat and may cause nipple scaring and candida infection caused by untreated nipple fissures. Breast engorgement can cause latching difficulties and difficulty with milk secretion, which may then lead to other complications, such as mastitis and fissures, if untreated (31). In the study, the compress intervention was more effective than acupressure in reducing the severity of breast hyperemia

(26). In the second study, the three groups — routine care involving a nasal spray prescribed by a midwife, acupuncture applied to Ht3, GB21, and acupuncture applied to HT3, GB21, and SP6 — did not show significant differences in terms of pain severity (32) .In the third study, significant differences were observed between the oxytocin nasal spray group and the two acupuncture groups in the mean severity index (SI) on days 3 and 4 of contact (24). In the fourth research, except for body temperature, the reduction in breast temperature, breast engorgement, pain levels, and discomfort was statistically higher in the experimental group than in the control group (25). Overall, conflicting results have been reported in these studies. The disparity of studies regarding the effects of acupressure on breast engorgement could be attributable to participants' level of education, as educated subjects are more likely to adhere to and follow-up treatment. Additionally, this difference could be related to the sample size and frequency of acupuncture as a treatment for breast engorgement, which manifests a greater reduction in the severity of breast engorgement with continued intervention. Sustained stimulation of acupuncture points may promote the flow of vital energy through the meridians, resulting in more pronounced therapeutic effects.

According to two studies, massage therapy has a greater effect on relieving pain (22, 33). Massage mitigates engorgement by affecting blood flow, lymphatic area, and nerves. Massage increases blood flow in the lymph area, thus stimulating the milk ejection reflex. On the other hand, it leads to the strong ejection of milk on nerves concentrated at the center of the areola and nerves at the nipple (34).

Given the ability of Commiphora mukul cream to improve breast engorgement, it can be recommended as a treatment for breast engorgement(21). It contains terpenoidal constituents such as monoterpenoids, diterpenoids, triterpenoids, sesquiterpenoids, steroids, flavonoids, lignans, amino acids, guggulsterols, and sugars. Also, in animal studies, anti-inflammatory activities were documented in some compounds of the C. mukul resin (methanolic extract and crystalline steroid extract (21).

According to the generalized estimating equation, breast engorgement severity was significantly lower in the hollyhock leaf group than in the group receiving routine interventions (P <0.001) (19). Studies have shown that the root extract of this plant stimulates phagocytosis and releases oxygen radicals and leukotrienes from human neutrophils in vitro. Additionally, its aqueous extract releases cytokines, including interleukin-6 and tumor necrosis factor, from human monocytes. Therefore, laboratory studies on Hollyhock confirm the immune and anti-inflammatory effects of this plant (35). Studies in humans and animals have confirmed the anti-inflammatory effects of ginger, which were first reported in the 1980s (36). This anti-inflammatory effect manifests as an inhibitory impact on prostaglandin synthesis. It also inhibits cyclooxygenase 1 and 2, preventing the synthesis of leukotrienes and the production of anti-inflammatory cytokines (37). Shogaols and gingerols are among ginger compounds with a similar but more effective impact than NSAIDs, and fewer side effects (38). General mechanisms through which these complementary treatments exert their effects on the breastfeeding problem. First, anti-inflammatory action: Many herbs contain compounds that inhibit inflammatory pathways, thus reducing swelling and pain. Second, antimicrobial properties: Several herbal remedies exhibit antibacterial, antifungal, or antiviral (10) (11). (12), third, properties encourage milk flow and reduce discomfort(3). First limitation: Some studies had methodological flaws, including an

inappropriate report of random allocation sequence, inadequate blinding, and a lack of intention-to-treat analysis. A second limitation is that almost all the studies were conducted in Iran; therefore, these findings must be interpreted with caution. The third limitation was the short duration of treatment, and some studies had small sample sizes**.**

5. Conclusion

Massage, acupuncture, and herbal medicines can have beneficial effects on improving breastfeeding problems. Given the interest of patients in complementary medicine and the low cost of this treatment technique, it can be used as a valuable technique to improve engorgement. However, caution should be exercised in interpreting the findings due to the limited number of studies and their small sample size. While complementary medicines can be beneficial for breastfeeding problems, they should be used in conjunction with conventional treatments and under the guidance of a healthcare provider to ensure safety and efficacy.

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