Effectiveness of Complementary Therapies for Breast Milk Production and Related Lactation Outcomes: A Systematic Review

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Abstract

Difficulties with breast milk production remain a concern among postpartum women and may contribute to early breastfeeding discontinuation. Complementary therapies have been explored to support lactation; however, the available evidence remains heterogeneous. This systematic review aimed to synthesize the evidence regarding complementary therapies for breast milk production and related lactation outcomes among postpartum and breastfeeding women. PubMed, ScienceDirect, and Google Scholar were searched for original studies published in English or Indonesian between 2021 and 2025. Eligible studies included postpartum or breastfeeding women who received herbal galactagogues, aromatherapy, reflexology, massage, or mind-body therapies, compared with usual care, placebo, or control interventions. Outcomes of interest included breast milk volume, perceived milk sufficiency, and other lactation-related measures. Risk of bias was assessed using RoB 2 and ROBINS-I tools, and findings were synthesized narratively. Eleven studies were included, comprising seven randomized controlled trials (RCTs) and four quasi-experimental studies. Overall, the findings were favorable but heterogeneous. Herbal galactagogues consistently increased breast milk volume across various preparations. Manual and mind-body therapies, such as emotional management combined with oxytocin massage, significantly increased key lactation hormones, including oxytocin ($p = 0.007$) and prolactin ($p = 0.006$). Lavender aromatherapy was associated with adequate milk supply in up to 83.3% of mothers. Foot reflexology increased milk volume (23.51 vs. 12.43 mL), although the difference did not reach statistical significance ($p = 0.065$). Complementary therapies may improve certain lactation outcomes; however, the overall certainty of the evidence remains limited because of heterogeneity and small sample sizes. Further high-quality randomized controlled trials are needed to establish the effectiveness and safety of these interventions.

Keywords: Breastfeeding, Complementary Therapies, Human Milk, Lactation, Postpartum

INTRODUCTION

Breastfeeding is a fundamental component of maternal and child health, providing essential nutrients and bioactive compounds that support infant growth, immune system development, and protection against infections while also benefiting maternal health (Modak et al., 2023; Arenas et al., 2025; Lorenzetti et al., 2021). Breastfeeding has been associated with short- and long-term health benefits for infants and mothers. Accordingly, the World Health Organization (WHO) recommends exclusive breastfeeding during the first six months of life, followed by continued breastfeeding alongside complementary foods until at least two years of age or beyond (WHO, 2017).

Despite these well-established benefits, initiating and maintaining breastfeeding remain global challenges. The World Health Organization (WHO) has set a global target of achieving a 60% exclusive breastfeeding rate by 2030, highlighting the need for continued efforts to strengthen breastfeeding support and improve lactation outcomes (WHO, 2025). Insufficient breast milk production is one of the most commonly reported concerns among breastfeeding women and may contribute to early supplementation or premature breastfeeding discontinuation (Grattan et al., 2024). Lactation difficulties may also be accompanied by breast engorgement, nipple pain, anxiety, depression, and other psychosocial challenges that can interfere with breastfeeding continuation (Babakazo et al., 2022; Rohma et al., 2023; Wheeler et al., 2024). In addition, conditions such as mastitis, blocked milk ducts, nipple fungal infections, and breast pain or discomfort can further hinder successful breastfeeding. These problems may disrupt the breastfeeding process and increase the likelihood of early breastfeeding cessation (Lai et al., 2021).

Complementary therapies have increasingly been explored as non-pharmacological approaches to support breast milk production, including herbal galactagogues, acupressure, aromatherapy, reflexology, massage, and mind body therapies (Farlikhatun et al., 2024; Hossain, 2024; McBride et al., 2021). Complementary medicine products are commonly used by pregnant and breastfeeding women, with perceived benefits for maternal health, infant health, and breastfeeding outcomes cited as important reasons for their use (Barnes et al., 2018, 2022). Some studies have reported improvements in breast milk production following these interventions; however, the quality and consistency of the available evidence remain variable. Potential benefits must also be considered alongside safety concerns, particularly for herbal interventions, including uncertain dosing, product contamination, herb–drug interactions, allergic reactions, contraindications, inconsistent formulations, and limited safety data during lactation. Furthermore, variations in dosage, treatment duration, maternal health status, nutritional status, stress levels, and breastfeeding practices may contribute to differences in lactation outcomes across studies (Levene et al., 2024; Montana et al., 2024).

Although complementary therapies have been investigated as strategies to support lactation, their use among pregnant and breastfeeding women encompasses a broad range of modalities and practices (Alqathama et al., 2023; Barnes et al., 2025). However, evidence regarding their effectiveness remains heterogeneous across intervention types, treatment protocols, study populations, and outcome measures. Existing studies have frequently focused on individual therapies or specific lactation outcomes, making it difficult to determine whether complementary therapies consistently improve breast milk production and other lactation-

related outcomes. Accordingly, an updated synthesis of the evidence is needed to integrate findings across diverse non-pharmacological interventions and to clarify the consistency, effectiveness, and limitations of current research.

Therefore, this systematic review aimed to synthesize evidence on multiple non-pharmacological complementary interventions for improving breast milk production and related lactation outcomes among postpartum and breastfeeding women. Breast milk production was designated as the primary outcome, whereas milk sufficiency and other lactation-related outcomes were considered secondary outcomes. The review evaluated these interventions in comparison with usual care, placebo, or control interventions to provide a comprehensive assessment of the available evidence and to identify areas of uncertainty that warrant further investigation.

METHODS

Study Design and Review Framework

This systematic review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 guidelines and structured using the Population, Intervention, Comparison, and Outcome (PICO) framework (Rethlefsen & Page, 2022; Creswell, 2023). This review was not registered in PROSPERO or OSF because it was conducted as part of an academic research project.

Table 1 PICO Framework

Population	Intervention	Comparison	Outcome
Mother OR Postpartum OR Postnatal OR Breastfeeding women OR nursing mothers	Non-pharmacological complementary therapies, including herbal galactagogues, acupressure, aromatherapy, reflexology, massage, and mind body therapies	Usual care, placebo, no intervention, or control intervention	breast milk production/volume, milk sufficiency and related lactation outcomes, including prolactin, oxytocin, breastfeeding self-efficacy, and other reported lactation outcomes

Search Strategy and Eligibility Criteria

A systematic search was conducted in PubMed, ScienceDirect, and Google Scholar for original studies published in English or Indonesian between 2021 and 2025. The search strategy incorporated terms related to postpartum or breastfeeding women, complementary therapies, and breast milk production or lactation outcomes using Boolean operators (AND/OR). The search terms included “breastfeeding, lactation, breast milk, complementary therapies, herbal medicine, galactagogues, acupressure, aromatherapy, reflexology, massage, mind-body therapies, milk production, breast milk production, milk volume, milk sufficiency, and

lactation outcomes". The studies were eligible if they were original quantitative studies involving postpartum or breastfeeding women, evaluated non-pharmacological complementary therapies, and reported breast milk production or related lactation outcomes. The complete database-specific search strategy for PubMed, including the executable Boolean search string and database-specific search syntax, was provided in Supplementary File 1. The search strategies for ScienceDirect and Google Scholar were also provided to facilitate reproducibility.

Study Selection and Data Extraction

Four reviewers independently screened the identified records after duplicate removal, followed by titles and abstracts screening and full-text assessments according to the predefined eligibility criteria. Disagreements during study selection were resolved through discussion and consensus, and the complete selection process was presented in the PRISMA flow diagram. Data were extracted using a standardized form, including author and publication year, country, study design, sample characteristics, intervention or comparator, outcome measures, and time point.

Risk of Bias Assessment

Risk of bias was assessed independently using design-appropriate risk-of-bias tools, with disagreements resolved through discussion and consensus. The Cochrane Risk of Bias 2 (RoB 2) tool was used for randomized controlled trials, assessing bias across the domains of the randomization process, deviations from intended interventions, missing outcome data, measurement of the outcome, and selection of the reported result. The Risk Of Bias In Non-randomized Studies of Interventions (ROBINS-I) tool was used for quasi-experimental studies, assessing bias due to confounding, selection of participants into the study, classification of interventions, deviations from intended interventions, missing data, measurement of outcomes, and selection of the reported result. Risk-of-bias judgments were presented by domain rather than as an aggregate percentage. Disagreements were resolved through discussion and consensus.

Certainty of Evidence

The certainty of evidence was not formally assessed using the GRADE approach because this review did not perform a quantitative meta-analysis and the included studies showed substantial heterogeneity in intervention types, study populations, outcome measures, and reported effect estimates. A formal GRADE assessment was therefore considered difficult

to interpret consistently across the diverse evidence base. The absence of a formal certainty assessment was acknowledged as a limitation of this review.

Data Synthesis

Meta-analysis was not performed because of substantial heterogeneity in study designs, intervention, populations, outcome measures, and reporting formats. Where available, mean differences, proportions, and *p*-values were considered to describe the direction and magnitude of effects, while consistency across studies was assessed qualitatively. Findings were synthesized narratively according to the type of complementary therapy and the reported lactation outcomes.

RESULTS

The database search identified 5.450 records, including 3.146 from ScienceDirect 904 from PubMed, and 1.400 from Google Scholar. After removal of 100 duplicate records, 5.350 records were screened by title and abstract, of which 4.415 were excluded as irrelevant to the review topic. Of the remaining 935 records, 838 were excluded because they were not relevant to the research question (n = 477), were not original research (n = 135), or did not evaluate complementary therapies (n = 226). A total of 97 full-text reports were assessed for eligibility, of which 86 were excluded because the outcomes were not related to breast milk production or lactation outcomes (n = 62) or the study design was not eligible (n = 24). Finally, 11 studies met the eligibility criteria and were included in the systematic review. The study selection process is presented in the PRISMA flow diagram (Figure 1).

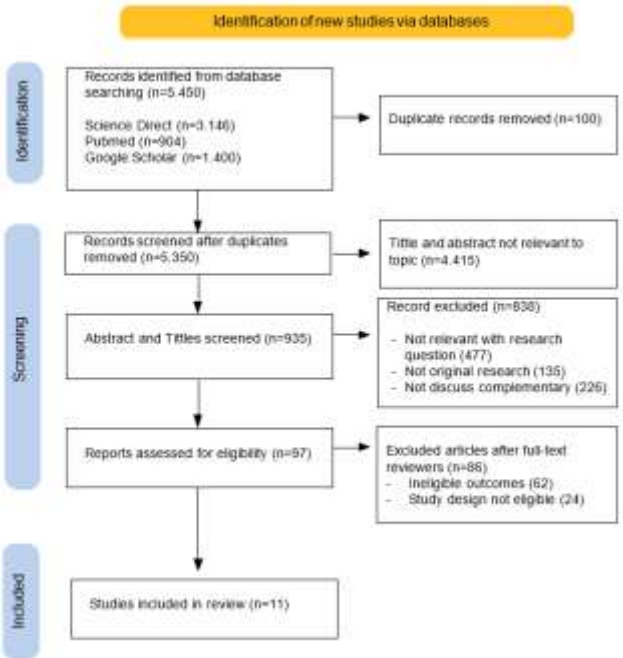

Figure 1. PRISMA Flowchart

Characteristic of Articles

The studies included 11 articles that met their eligibility criteria. These reports, all of which were published within the past five years, employed a variety of research methods, including randomized controlled trials (RCTs) and quasi-experimental studies. Several countries were among the locations where the studies were conducted, including (n=1), India (n=1), Iran (n=2), and Indonesia (n=4), Thailand (n=3).

Risk of Bias Assessment of the Included Studies

Risk-of-bias assessment identified varying levels of potential bias across the included studies. The randomized controlled trials were assessed using RoB 2, while the quasi-experimental studies were assessed using ROBINS-I. Judgments were reported by individual risk-of-bias domains rather than as aggregate methodological quality scores. The domain-level assessments are presented in Figures 2 and 3.

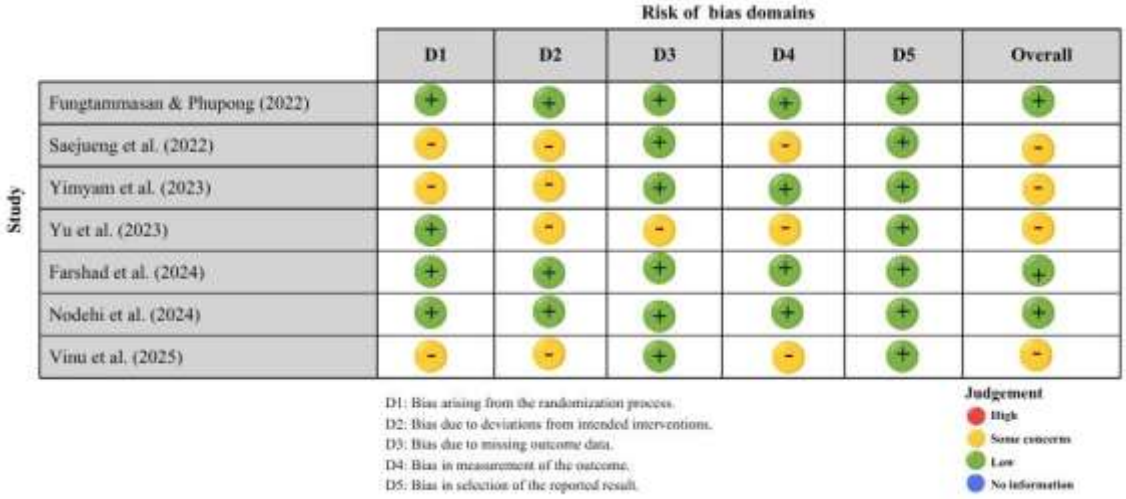

Figure 2. Risk of Bias Assessment of Randomized Controlled Trials Using RoB 2

Risk of bias among the seven randomized controlled trials was assessed using the Cochrane RoB 2 tool across five domains. Three studies were judged to have a low overall risk of bias, whereas four studies raised some concerns. The main concerns were related to allocation procedures, potential deviations from intended interventions, incomplete outcome data, and outcome measurement, particularly in studies involving interventions that could not be fully blinded. No randomized controlled trial was judged to have a high overall risk of bias.

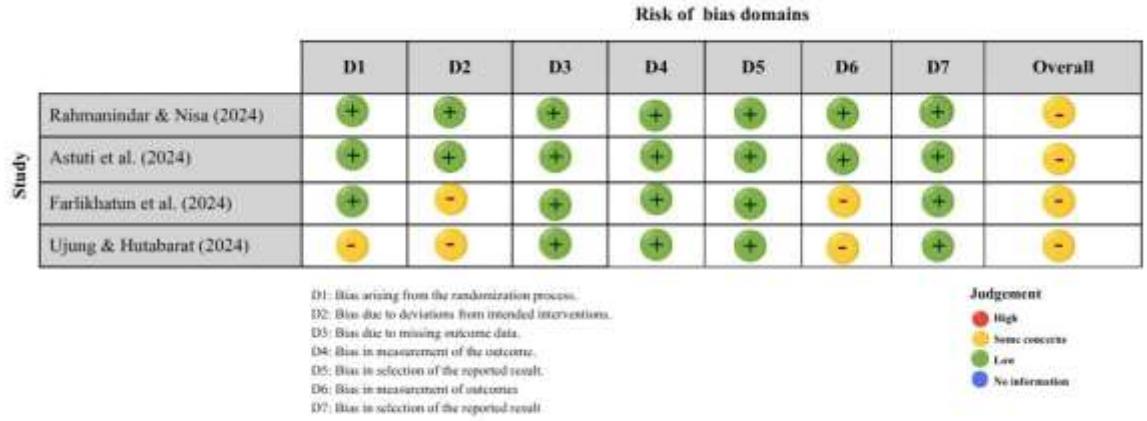

Figure 3. Risk of Bias Assessment of Quasi-experimental Studies Using ROBINS-I

The four quasi-experimental studies were assessed using the ROBINS-I tool across seven domains. All four studies were judged to have a moderate overall risk of bias. The main concerns involved potential confounding, participant selection, and outcome measurement, while the remaining domains were generally judged to have low risk of bias. Astuti et al. (2024) specifically reported that parity and breastfeeding frequency were not fully controlled, which may have introduced confounding.

Table 4. The Main Findings From Reviewed Articles

No	Author(s) / Year	Country / Research Design	Sample Size	Population	Intervention / Comparator	Outcome Measure	Time Points
1	(Fungtammasan et al., 2022)	Thailand / RCT	88 Postpartum women	Early postpartum mothers	Moringa oleifera capsules / Placebo	Milk volume (day 3); time to breast fullness; maternal satisfaction; quality of life (QoL); adverse events; exclusive breastfeeding (EBF) at 6 months	Day 3 postpartum; 6-month follow-up for EBF
2	(Yu et al., 2023)	China / RCT	96 Mother infant	Mothers following late-preterm/early-term delivery	Relaxation therapy / No intervention	Maternal stress; infant growth; breastfeeding/milk outcomes	Pre-intervention / At delivery; 1 Week Postpartum; 8 Weeks Postpartum
3	(Saejueng et al., 2022)	Thailand / RCT	120 Postpartum women	Postpartum women who underwent uncomplicated cesarean delivery	Wang Nam Yen herbal tea / domperidone / placebo	Primary: breast milk volume; Secondary: pregnancy and neonatal outcomes, adverse events, and participant satisfaction	Breast milk volume assessed at 72 hours postpartum

No	Author(s) / Year	Country / Research Design	Sample Size	Population	Intervention / Comparator	Outcome Measure	Time Points
4	(Vinu et al., 2025)	India / RCT	50 Postpartum women	Postpartum women	Yoga-based intervention / No intervention	Psychological well-being (stress, anxiety); breastfeeding self-efficacy	Eight-week yoga intervention
5	(Yimyam et al., 2023)	Thailand / RCT	41 Participants	Mothers of preterm neonates	Banana flower beverage / Water control	Breast milk volume, postpartum days 2–3	Days 2–3 postpartum
6	(Farshad et al., 2024)	Iran / RCT	117 Lactating mothers	New/ lactating mothers	Green cumin (Cuminum cyminum) oral drops OR nettle (Urtica dioica) oral drops / Placebo	Milk sufficiency indicators: infant weight gain, feeding frequency, urine output	4 weeks postpartum
7	(Nodehi et al., 2024)	Iran / RCT	76 Primiparous mothers	Mothers of premature infants (NICU)	Foot reflexology / No intervention	Milk volume (23.51 vs. 12.43 mL, net gain 11.08 mL, p = 0.065); milk protein/calcium	On the first and seventh days
8	(Astuti et al., 2024)	Indonesia / A quasi-experimental	93 Postpartum women	Postpartum working mothers with oligogalactia	Emotional management + oxytocin massage + breast care / Lactation education	Serum oxytocin (p = 0.007), prolactin (p = 0.006)	Blood samples were collected before and after the 3-day intervention protocol to measure oxytocin and prolactin levels.
9	(Farlikhatun & Phupong, 2024)	Indonesia / A quasi-experimental	288 postpartum mothers	Breastfeeding mothers	Moringa leaves, katuk leaves, soy milk, spinach, young papaya, and lavender aromatherapy/ No intervention	Breast milk production; achieving sufficient supply (83.3% in the lavender aromatherapy group)	Pre-test (Baseline: Postpartum day 4) and Post-test (After intervention)
10	(Ujung & Hutabarat, 2024)	Indonesia / A quasi-experimental	30 Participants	Postpartum mothers	Lavender aromatherapy (inhalation, twice daily) vs oxytocin massage / Comparison between the two active interventions	Breastfeeding smoothness/sufficiency (p = 0.828 between arms; 100% smooth post-intervention in aromatherapy	14 days postpartum

No	Author(s) / Year	Country / Research Design	Sample Size	Population	Intervention / Comparator	Outcome Measure	Time Points
11	(Rahmanindar & Nisa, 2024)	Indonesia / A quasi-experimental	100 Postpartum women	Postpartum mothers on days 1–3 in Tegal Regency	Lactation acupressure massage / No intervention	Breast milk production	Postpartum period, with participants recruited on days 1–3 postpartum

Publication bias was not formally assessed using funnel plots because no meta-analysis was conducted. Subgroup and sensitivity analyses were not performed because of the small number of included studies and substantial heterogeneity in intervention types, study populations, and outcome measures. The findings were therefore synthesized narratively, and the possibility of publication bias cannot be excluded.

Narrative Synthesis of Findings

All 11 included studies reported a favourable direction of effect for breast milk production or related lactation outcomes, although the magnitude and statistical significance of effects varied considerably across categories. Among the five studies evaluating herbal galactagogues, all consistently favored the intervention arm, but the specific agents tested included Moringa oleifera capsules, Wang Nam Yen herbal tea, banana flower beverage, cumin/nettle oral drops, and a mixed regimen of moringa, katuk, soy, spinach, and papaya differed substantially in active constituents, dosage, preparation, and cultural context, and should not be interpreted as a single homogeneous “class effect.”

Fungtammasan & Phupong (2022) reported increased breast milk volume with Moringa oleifera versus placebo, alongside improved maternal satisfaction and quality of life, though not all outcomes reached statistical significance. Farshad et al. (2024) found both cumin and nettle drops improved milk-sufficiency indicators over four weeks, with cumin showing a numerically larger effect. Yimyam et al. (2023) reported greater milk volume with banana flower beverage among mothers of preterm neonates. Farlikhatun et al. (2024) reported improvements across all six tested plant-based/aromatherapy interventions, without disaggregated effect sizes for each. Saejueng et al. (2022) also reported that Wang Nam Yen herbal tea significantly increased breast milk volume compared with placebo, further supporting the potential of traditional herbal preparations as galactagogues.

Manual/acupressure therapies: Rahmanindar & Nisa (2024) reported that lactation acupressure massage significantly increased breast milk production relative to control group. Aromatherapy, represented by two studies overlapping with the herbal category, showed

inconsistent findings. Farlikhatun et al. (2024) reported 83.3% of mothers achieved sufficient milk production after lavender aromatherapy, while Ujung & Hutabarat (2024) found lavender aromatherapy combined with oxytocin massage did not significantly change milk-production smoothness ($p = 0.828$) compared with the comparison group.

Mind-body therapies: Three studies targeted psychological and hormonal pathways rather than direct nutritional or mechanical stimulation. Astuti et al. (2024) found that combined emotional-management and oxytocin massage significantly increased oxytocin ($p = 0.007$) and prolactin ($p = 0.006$) levels among working postpartum mothers with oligogalactia. Vinu et al. (2025) reported that yoga improved psychological well-being and breastfeeding self-efficacy. Yu et al. (2023) found that relaxation therapy reduced maternal stress and modestly improved milk-feeding outcomes, although the quantitative increase in milk supply was not substantial.

Reflexology: Nodehi et al. (2024) found that foot reflexology increased milk volume among mothers of preterm infants (23.51 vs. 12.43 mL; mean difference, 11.08 mL), although the difference did not reach statistical significance ($p = 0.065$). Small, non-significant increases in milk protein and calcium were also observed."

DISCUSSION

Overall, the 11 included studies provide preliminary, directionally consistent but statistically mixed evidence that non-pharmacological complementary therapies, including herbal galactagogues, manual/acupressure techniques, aromatherapy, and mind-body approaches, may support breast milk production and related lactation outcomes, such as milk sufficiency, prolactin and oxytocin levels, and breastfeeding self-efficacy. However, only a minority of studies reported statistically significant primary outcomes, and several relied on small, single-center samples. Therefore, these findings should be regarded as hypothesis generating rather than conclusive. The following sections discuss the evidence by therapy category, followed by implications for clinical practice and health policy, the limitations of the review, and directions for future research.

Herbal Galactagogues for Lactation Support

A commonly used non-pharmacological approach to enhancing breast milk production is the use of galactagogues, which are substances or components that help stimulate and increase milk secretion. Across many cultures, herbal medicine and plant-based remedies have traditionally been used as natural means of supporting lactation. As noted above, the herbal interventions evaluated in this review included banana flower beverage, green cumin and nettle

drops, Moringa oleifera capsules, and a combined katuk, soybean, spinach, papaya, and lavender regimen. These interventions differed substantially in their active constituents, dosages, preparation methods, cultural contexts, and quality control standards. Consequently, the preliminary evidence for each intervention should be interpreted individually rather than combined into a single conclusion regarding the effectiveness of herbal galactagogues as a class.

Preliminary evidence from Thailand suggests that a banana flower beverage may increase breast milk production among mothers who have delivered preterm infants. Mothers who consumed the drink produced greater volumes of breast milk during their second and third days after delivery compared with the control group, which consumed only water. This suggests that banana flowers may act as an accessible natural galactagogue in this population, although replication in larger samples is needed (Yimyam et al., 2023).

Similarly, Saejueng et al. (2022) evaluated Wang Nam Yen herbal tea in a randomized controlled trial and found that the intervention was associated with higher breast milk production during the early postpartum period compared with placebo. The study also reported a significant difference between Wang Nam Yen herbal tea and placebo, while no significant difference was observed between Wang Nam Yen herbal tea and domperidone. These findings suggest that Wang Nam Yen herbal tea may have potential as a complementary approach to support early lactation; however, the evidence should be interpreted cautiously because the findings were obtained within the specific study population and early postpartum period (Saejueng et al., 2022).

A study in Iran compared the effectiveness of green cumin and nettle leaves as galactagogues. Both herbs showed positive results in improving indicators of breast milk adequacy such as increased infant weight gain and breastfeeding frequency; the cumin group showed numerically larger effects, making it a promising candidate for further trials (Farshad et al., 2024).

Additionally, Moringa oleifera capsules showed preliminary potential for increasing breast milk volume. Although not all outcomes reached statistical significance, mothers who received Moringa oleifera reported greater breastfeeding satisfaction and quality of life. These findings suggest potential benefits beyond milk volume; however, the evidence is based on a limited number of studies, and the safety of herbal galactagogues during lactation remains insufficiently characterized. Therefore, Moringa oleifera should not yet be considered a routine lactation intervention, and further controlled studies with standardized preparations and

systematic maternal and infant safety assessment are needed (Fungtammasan & Phupong, 2022).

The Role of Acupressure and Acupuncture in Lactation Enhancement

Manual acupressure, a non-pharmacological technique targeting specific body points thought to influence oxytocin and prolactin release, was evaluated in one included study. Rahmanindar & Nisa (2024) found that lactation acupressure massage (acuprelactation) significantly increased breast milk production among postpartum women compared with a control group. Because this finding rests on a single quasi-experimental study, it should be considered preliminary and requires replication with larger, controlled trials before acupressure can be recommended as a routine practice (Rahmanindar & Nisa, 2024).

Aromatherapy as a Complementary Approach to Support Lactation

Research conducted in Indonesia involving 30 postpartum mothers allocated to intervention and comparison groups included 15 mothers in the intervention group who received lavender aromatherapy twice a day for 14 days. Aromatherapy was administered through inhalation of lavender scent with the goal of creating a calm and comfortable atmosphere for the mothers. Before the intervention, only 46.7% of participants in the intervention group reported no issues with breast milk production, while the remainder experienced difficulties such as delayed or inconsistent milk production. Following the 2-week intervention, all mothers in the intervention group (100%) achieved smooth and sufficient lactation. However, findings regarding combined interventions remain mixed. Ujung and Hutabarat (2024) found that lavender aromatherapy combined with oxytocin massage did not significantly outperform the comparison group in improving milk flow ($p = 0.828$), indicating that the proposed therapeutic mechanism remains a plausible hypothesis rather than an established certainty (Ujung & Hutabarat, 2024).

Nevertheless, these findings broadly align with research by Farlikhatun et al. (2024) in Indonesia, in which 83.3% of mothers experienced an increase in breast milk production to levels considered sufficient after the lavender aromatherapy intervention. Together, these two Indonesian studies suggest that lavender aromatherapy may operate through a psychoneuroendocrine pathway rather than through direct nutritional mechanisms. By promoting psychological relaxation, lavender inhalation may reduce maternal cortisol levels and facilitate the endogenous release of oxytocin, a hormone essential for the milk ejection reflex (Farlikhatun et al., 2024). Given the small number of studies and inconsistent findings,

lavender aromatherapy may be considered only as an adjunct to breastfeeding support rather than as a stand-alone intervention for improving milk production.

Mind-Body Therapies to Increase Breast Milk Production

The approach involving mind-body therapies is gaining more attention as a potential non-pharmacological method to enhance breast milk production, particularly for breastfeeding mothers facing challenges such as stress, anxiety, or low milk supply, known as oligogalactia. This approach emphasizes the connection between mental state and physiological balance, including hormonal regulation, which may affect breast milk production. A combination of emotion management and oxytocin massage was found to increase levels of oxytocin and prolactin in working mothers in Indonesia. These two hormones contribute to the production and secretion of breast milk. This approach may be beneficial for mothers experiencing oligogalactia, although the evidence is based on limited studies. This approach combines emotional relaxation techniques with physical stimulation of specific body areas that trigger let-down reflexes, thereby enhancing milk production efficiency (Astuti et al., 2024).

Psychological techniques were also examined in an Indian study evaluating the effects of yoga on postpartum women. The findings suggest that yoga may improve psychological well-being and breastfeeding self-efficacy among postpartum women, particularly by supporting relaxation and stress management (Vinu et al., 2025). In China, a randomized controlled trial similarly evaluated relaxation therapy among women breastfeeding preterm infants. The intervention reduced maternal stress and improved maternal psychological well-being, although the quantitative increase in breast milk supply was not substantial (Yu et al., 2023). These findings suggest potential benefits of mind-body and relaxation-based interventions for maternal psychological well-being and breastfeeding-related outcomes, although evidence for a substantial improvement in breast milk production remains limited.

Implications for Clinical Practice and Health Policy

The findings have preliminary implications for midwifery practice. Complementary therapies such as lactation massage, acupressure, relaxation-based interventions, and selected herbal galactagogues may have potential as adjuncts to individualized breastfeeding support (Rahmanindar & Nisa, 2024; Astuti et al., 2024; Fungtammasan & Phupong, 2022; Saejueng et al., 2022; Yu et al., 2023).

However, these approaches should not replace assessment of breastfeeding technique, maternal and infant factors, or established lactation support. Given the heterogeneity of interventions, small sample sizes, and limited safety reporting, the current evidence does not support routine adoption of any specific complementary therapy as a standard intervention for

increasing breast milk production. From a health policy perspective, complementary therapies should be considered cautiously within maternal and child health services. Before wider implementation, attention should be given to standardized intervention protocols, practitioner training, product quality, and systematic monitoring of maternal and infant safety. These considerations are particularly important for herbal galactagogues because the included studies used different preparations, dosages, and intervention protocols. Therefore, the current evidence supports further evaluation and standardized implementation research rather than immediate incorporation of specific complementary therapies into routine lactation care.

Limitations

This review has several limitations. The included studies exhibited substantial heterogeneity in intervention types, outcome measures, and sample sizes, which precluded meta-analysis and additional subgroup or sensitivity analyses. Publication bias could not be formally assessed because no meta-analysis was conducted. The literature search was conducted using three databases and was restricted to open-access publications, while grey literature was not included. These restrictions may have resulted in the omission of potentially relevant evidence and may have introduced language and availability bias. Furthermore, the certainty of evidence was not formally assessed using GRADE. Therefore, the findings should be interpreted with caution, particularly regarding the effectiveness and safety of specific complementary interventions.

CONCLUSIONS

Non-pharmacological complementary therapies, including herbal galactagogues, acupressure, aromatherapy, and mind-body therapies, may improve breast milk production and related lactation outcomes. However, the findings should be interpreted cautiously because of heterogeneity across interventions and limited safety evidence. In clinical practice, midwives and healthcare providers should assess breastfeeding difficulties and provide individualized lactation support before considering complementary therapies, with appropriate counseling and monitoring when herbal galactagogues are used. Further high quality studies with standardized intervention protocols, including dosage, treatment duration, objective outcome measures, and systematic maternal and infant safety assessment, are needed to confirm their effectiveness and safety.

Authors contribution

AW: contributed to the conceptualization and methodology of the study, investigation, data curation, project administration, and writing of the original draft. S: contributed to

investigation, data curation, interpretation of the findings, and manuscript review and editing. E: contributed to methodology, investigation, data curation, interpretation of the findings, and manuscript review and editing. FA: contributed to investigation, data curation, and manuscript review and editing. QESA: contributed to methodology, supervision, validation, critical evaluation of the manuscript, and manuscript review.

Declarations

This review received no specific funding from any public, commercial, or not-for-profit organization. The authors declare that they have no competing interests. The data extracted for this review, the database-specific search strategies, and the data extraction form are available from the corresponding author upon reasonable request.

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