



The Effect of Psychological Interventions on the Anxiety and Breastfeeding Self-Efficacy: A Systematic Review and Meta-Analysis

*Roghayeh Nourizadeh¹, Shiva Shamsdanesh¹, *Esmat Mehrabi¹, Fatemeh Ranjbar², Sevil Hakimi², Hanieh Salehi Pourmehr³*

1. Department of Midwifery, Faculty of Nursing and Midwifery, Tabriz University of Medical Sciences, Tabriz, Iran
2. Research Center of Psychiatry and Behavioral Sciences, Tabriz University of Medical Sciences, Tabriz, Iran
3. Research Center for Evidence Based Medicine, Faculty of Medicine, Tabriz University of Medical Sciences, Tabriz, Iran

*Corresponding Author: Email: b.mehrabi62@gmail.com

(Received 19 Jan 2023; accepted 11 Mar 2023)

Abstract

Background: Maternal anxiety has been accompanied by many unfavorable effects on breastfeeding in the postpartum period. We aimed to provide scientific evidence in identifying effective interventions for anxiety and breastfeeding self-efficacy (BSE) in a systematic review and meta-analysis.

Methods: All published studies with inclusion criteria by 2022 were searched in Embase, Cochrane library, Web of Sciences, Google Scholar, PubMed, Scopus, SID and Magiran. The literature search was performed using PRISMA instructions. Further, 20 eligible interventional studies (RCT and pre-posttest) and one case study were included in this systematic review and meta-analysis. Publication bias was checked with Eggers test and funnel plot methods. The collected data were analyzed using stata version 16.

Results: It is not possible to provide an explicit and accurate conclusion about the effective intervention method in reducing anxiety and increasing BSE among lactating women during the covid19 pandemic. The results indicated a significant increase in BSE among lactating women after educational and psychological interventions (4.20, 95% CI: 3.61 to 4.80, $I^2 = 26.38\%$).

Conclusion: It is recommended to conduct further studies with a strong methodology and based on intervention methods during the postpartum period, especially in the first month of birth to reduce the symptoms of stress and anxiety in the mother, establish better mother-child attachment, and improve BSE and maternal performance during the Covid-19 pandemic.

Keywords: Anxiety; Breastfeeding self-efficacy; Exclusive breastfeeding; Psychological interventions

Introduction

Pregnancy, childbirth and adaptation to the baby are the most sensitive stage of a woman's life (1). The majority of mothers after childbirth are confronted with challenges in starting the breastfeed-

ing. The successful breastfeeding depends on the physiological factors and mother's psychological conditions (2). Mothers experience mental changes in the postpartum stage, and sometimes



engage with crises, such as anxiety and depression. Prevalence of postpartum depression, stress, and anxiety among primiparous women (3) was reported 9 - 30% (3, 6-8), 10-50% (3-4,8), and 20-30% (5,8), respectively.

On the other hand, large-scale and devastating natural disasters have always been strongly associated with adverse effects on mental health, such as post-traumatic stress disorder, anxiety, depression, and other psychological disorders (9). COVID-19 is recognized as the third pandemic disease caused by coronavirus, which has led to panic and severe stress around the world (10-11). General emergencies, such as the outbreak of the covid19 pandemic, can independently increase the prevalence of postpartum depression (12). The resultant fear can be spread widely, especially for pregnant women who are more susceptible. Mental disorders, such as depression, anxiety, and stress have a negative effect on human physiological performances, such as breastfeeding and reduce the chance of exclusive breastfeeding (EBF). Maternal stress can reduce oxytocin secretion and prevent milk ejection reflex (let-down reflex) (13). Further, stress and anxiety are biological and hormonal responses affected by the activity of the hypothalamic-pituitary-adrenal axis and increase catechol amines, such as epinephrine (14). Given that this axis is more sensitive to stress during breastfeeding and postpartum, mothers may perceive high stress during the postpartum period for various reasons such as Covid19 pandemic (10-12). Consequently, they may suffer from stress, anxiety, and even depression (13,16), leading to a decrease in the secretion of prolactin and oxytocin, which reduces the amount of milk during breastfeeding and ultimately, decreases the likelihood of EBF (15-16) and also breastfeeding self-efficacy (4,17).

Psychosocial support helps individuals and communities recognize psychological problems and rebuild social structures after emergencies or an important event (18-19). In this regard, various counseling approaches, such as relaxation training, diaphragmatic breathing, meditation, identification of negative automatic thoughts, and effective coping training are recommended for people

who are in situations with high perceived stress (19-20).

Considering that a review study and meta-analysis was not conducted to compare the effect of different interventions on anxiety and BSE, especially by reviewing the interventions performed during the Covid-19 pandemic and in order to identify effective interventions in this field to apply for similar crisis, the present review and meta-analysis aimed to evaluate the reviewed and published studies to determine the impact of counseling and psychological interventions on anxiety and BSE.

Methods

Search strategy

The search strategy involved the use of a valid filter to identify RCT and quasi-experimental studies articles published until 21 December 2022 using free terminology common in scientific literature and PubMed's MeSH. Search terms were used using PICO formulation questions. Search terms included counseling, psychological interventions, educational interventions, breastfeeding, stress, anxiety, BSE, and Covid-19 pandemic. This systematic review was performed by searching the English databases of Cochrane Library, Pubmed, Embcase, Web of Science, Scopus, and Google Scholar, and Persian databases of Magiran and SID.

Inclusion and exclusion criteria

The inclusion criteria were RCT and quasi-RCT studies published in English and Persian, which investigated psychological and educational interventions and counseling approaches on stress, anxiety, and BSE among breastfeeding women. PICO criteria defined for this review study included participants (lactating women), interventions (counseling approaches, psychological, and educational interventions), comparison group (routine care or standard breastfeeding care), outcome (anxiety, BSE, EBF). The exclusion criteria were the lack of access to the abstract or full text of articles, reporting of irrelevant results. The

first author's opinion was used to resolve any conflict or disagreement

Selection of studies

After collecting the findings from all databases, the articles were exported to the Microsoft Excel spreadsheet. Two authors (Shiva Shans Danesh, and Esmat Mehrabi) independently extracted the data and reviewed the screened and eligible arti-

cles. When there was a conflict or disagreement between researchers, it was resolved by consensus and consultation with first author. The study-related data, including time, author, method, type of intervention, participants' characteristics, number of randomized participants, and number of dropped-out participants were extracted. Table 1 displays the summary of data and details of related articles.

Table 1: Characteristics of the studies used in this review

<i>Author Reference No.</i>	<i>(yr)</i>	<i>Type of study</i>	<i>Type of intervention</i>	<i>Participants number</i>	<i>Outcomes</i>	<i>Conclusion</i>
Procelli et al(2005), (45)		Music therapy	Music therapy and relaxation	Control =30 Intervention =30	Anxiety	Significant reduction of maternal anxiety
Mannan al.(2008), (26)	et	postpartum home visit on breastfeeding	Early and late home visits (days 1-3 and days 6-7)	Group1=2949 Group 2=546	Exclusive Breastfeeding (EBF)	Positive effect on EBF
Pugh et al(2010), (44)		*A randomized controlled	Hospital visits by breastfeeding support team, home visits	Intervention = 168 Control = 160	(EBF)	Positive effect on EBF
Karimi et al (2014), (41)		*Clinical trial	Mother–infant skin-to-skin contact with kangaroo mother care	Intervention = 47 Control = 45	breastfeeding self-efficacy (BSE)	Significant effect on BSE
Karimi et al. (2014), (40)		*Clinical trial	kangaroo mother care	Intervention group= 36 Control = 36	(BSE)	Significant effect of kangaroo care on BSE
Hashemzadeh (mirmohammadli) (2014), (33)		*Single-blind experimental study	Three groups: Group 1: Educational package, containing CD and pamphlet, with face-to-face training without direct training Group 3: Routine care Cognitive-behavioral counseling	Intervention group 1=100 Intervention group 2=100 Control=100	(BSE)	Significant effect of direct training on BSE
Sikander et al. , (27))(2015		*A Cluster RCT		Intervention= 210 Control= 211	EBF	Significant effect on EBF
Liu et al. , (38))2016(quasi-experimental	Prenatal breastfeeding workshop and a breastfeeding counseling session	Intervention= 65 Control= 65	Evaluating the BSE and EBF	Significant effect on EBF and BSE
Saljughhi et al. (2016), (35)		*Clinical trial	Learning through role-playing	Intervention = 37 Control= 37	BSE	Significant effect on BSE

Parsa et al. (2016), (27)	*Randomized clinical trial	Four breastfeeding counseling sessions during the first month and three-monthly	Intervention= 52 Control= 52	Evaluating the BSE and EBF	Significant effect on EBF and BSE
Merdasi et al. (2017), (36)	*Quasi-experimental study	Three groups: Group 1: Formatted messages, containing positive outcomes of breastfeeding	Group 1=70 Group 2=70 Control =70	BSE	There was a significant effect on BFS
Abdollahipur et al. (2017), (39)	*Quasi-experimental	Three groups: Intervention group 1: Baby crawling towards the breast Intervention group 2: Other educational strategies, such as showing attractive videos and photos	Group 1=40 Group 2=40 Control =40	BSE	Breast crawl (TBC) group was not statistically significant compared to the other groups.
Mohseni et al. (2018), (34)	*Randomized clinical trial pregnant women	Training sessions, at home with educational pamphlet	Intervention= 33 Control = 32	BSE	Significant effect of training at home on BSE
Fauzia et al. (2019), (29)	* One group pretest-posttest	Two participative counseling sessions	Intervention= 35 Control = 35	BSE	Significant effect on BSE
Narooee et al. (2019), (42)	*A Quasi-Experimental Study	Intervention group: Motivational counseling	Control =70 , Intervention =70	EBF	Significant effect on EBF
Salehi et al. (2019), (43)	*Randomized clinical trial	Three groups Intervention group 1: Motivational interview	Group 1: N=70 Group 2: =70 Control =70	BSE	Significant effect on EBF
Azizi et al. (2020), (30)	*Randomized controlled trial	Stress management counseling	Intervention=23 Control =23	EBF, BSE	Positive effect on EBF, BSE
Dol et al. (2021), (37)	*A pilot pre-post intervention study	Intervention group 1: Essential coaching for every mother-COVID-19 prescription Intervention group 2: Essential coaching for every mother-original prescription	Intervention group 1=56 Intervention group 2=53	BSE and postpartum anxiety	Effective way on BSE and postpartum anxiety
Huang et al. (2020), (25)	*A case report (interventional study)	DBT-based psychological intervention, including mindfulness training, relaxation exercise	Intervention=1	anxiety	Effect of the DBT technique on the severity of anxiety
Farasati et al. (2022), (31)	*Randomized controlled trial	In home supportive counseling during three sessions	Intervention=30 Control =30	Self-efficacy and continuation of EBF	Positive effect on BSE and EBF

Assessment of risk of bias

The two authors separately assessed the risk of bias based on the Cochrane handbook for all studies included in terms of the criteria of selection, performance, evaluation, attrition, and reporting bias. The risk of bias of each item for clinical trial studies was classified as "low risk", "high risk", and "unclear". Then, the opinions of the two authors were matched, and the third person was consulted in case of any conflict to reach the final result.

Data analysis and synthesis

The effect of interventions on the continuous outcome of BSE was reported with standardized mean difference (SMD). Micro-soft Excel (2016) and STATA version 16 software were used for data entry and analysis, respectively. The two authors (Shiva Shams, Esmat Mehrabi) independently extracted all important data using a standard data mining format. The researchers reached a significant agreement, i.e., Cohen's coefficient > 0.60 . Any disagreement between reviewers was resolved through discussion and then, concluded. Some issues, such as author name, year of publication, sample size, mean age of participants, and mean score of BSE outcome were included when extracting data. The SMD and 95% CI was estimated as the effect size for the desired outcomes, including decisional conflict, satisfaction with decision, and knowledge. Random-effect model was used to evaluate the heterogeneity of the studies. The statistical heterogeneity of studies was tested using I^2 test and P -value analysis. The heterogeneity was considered significant if $P < 0.05$ and $I^2 > 75\%$ (21, 22). In addition, Egger's and Begg's test was used to examine the Publication bias (23, 24). The effect size, including SMD and 95% CI were estimated for the desired outcome.

Ethics approval

The study was approved by the ethics committee at the Tabriz University of Medical sciences (Ethical code: IR.TBZMED.REC: 1399.1078).

Results

From 3986 articles obtained by searching for aforementioned various sources, articles with duplicate titles were separated and the rest of the articles were reviewed based on their title and abstract. Finally, 72 relevant articles were identified and their full text was reviewed. Finally, 20 related articles were included in the review study (Fig. 1). In the case of any conflict or disagreement, it was resolved by the consensus and consultation with third author.

Further, studies with a total of 6062 breastfeeding women were included in this review study. Among the reviewed articles, there was an article (case study) in which intervention with an innovative approach was performed on a breastfeeding woman during the Covid-19 pandemic in China in 2020, and the rest of the articles were the clinical trial. The sample size varied from 1 participant (25) to 3495 (26). The follow-up period after the intervention altered from 24 hours to six months.

In general, the interventions of the reviewed studies were classified as follows:

- Counseling interventions: including cognitive-behavioral counseling (27), breastfeeding counseling (28), participative counseling approach on improving BSE (29), incorporation of stress management counseling (17, 30), in-home supportive counselling (31-32) and dialectical behavior therapy (DBT) (25).
- Educational interventions, including educational packages (33), training sessions at home with educational pamphlet (34), and face-to-face training, and training by role-playing (35), interventions were done via SMS and text messages about infant care and maternal mental health (36).
- Supportive and combined interventions including Coaching for every mother (37), Supportive and combined interventions, breastfeeding workshop before birth and a breastfeeding counseling session (38),

newborn crawling toward the breast and educational strategies (39).

- Another intervention types including kangaroo care (40) skin-to-skin contact (41) motivational interview (42-43). Counseling and practical support of breastfeeding methods by trained individuals during the first three days of birth (44). Hospital visits and home visits with

the breastfeeding support team (26). And music therapy and relaxation during breastfeeding period (45).

Although all studies were analyzed for bias, a number of studies were excluded from the meta-analysis, due to the lack of reporting mean for the intended outcomes and the lack of access via email.

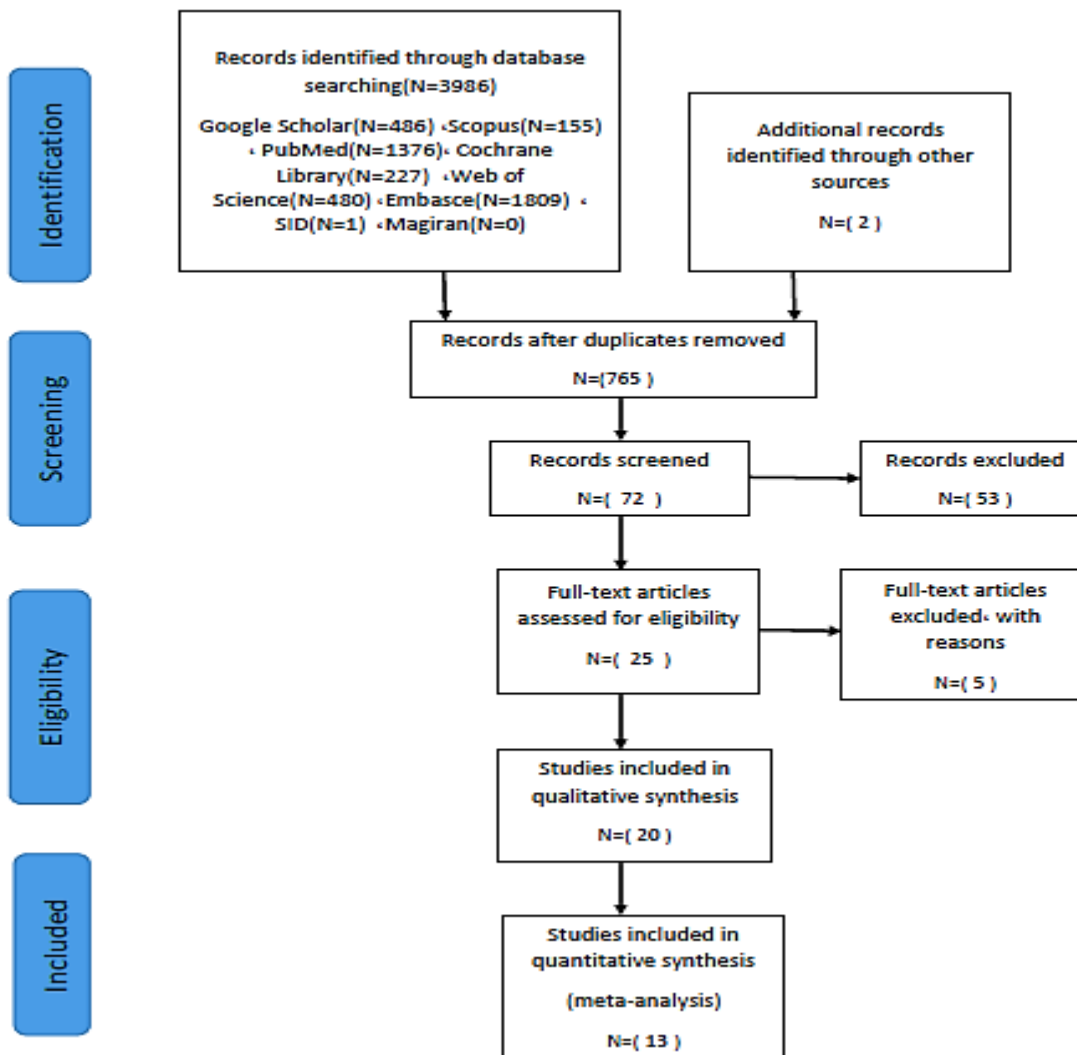


Fig. 1: Flow diagram for the study identification and selection

Risk of bias assessment

The risk of bias assessment demonstrated that from 20 studies included in the review study, the risk of bias of 13, 4, and 3 articles were as low

risk, high risk, and unclear, respectively. Therefore, 13 articles were included in the meta-analysis (Fig. 2 and 3).

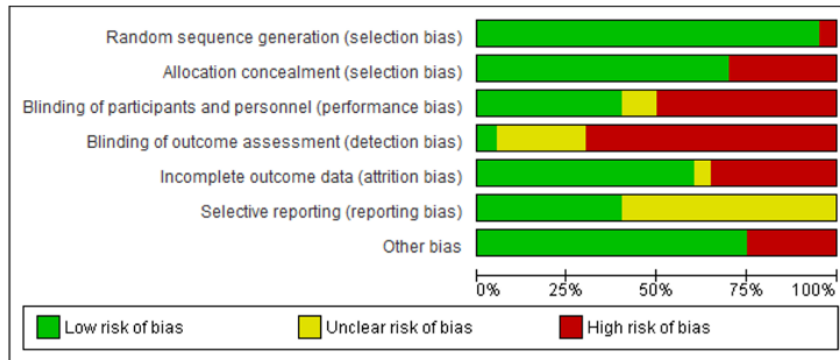


Fig. 2: Risk of bias graph (review of the authors' judgments about each risk of bias item presented as percentages across all included studies)

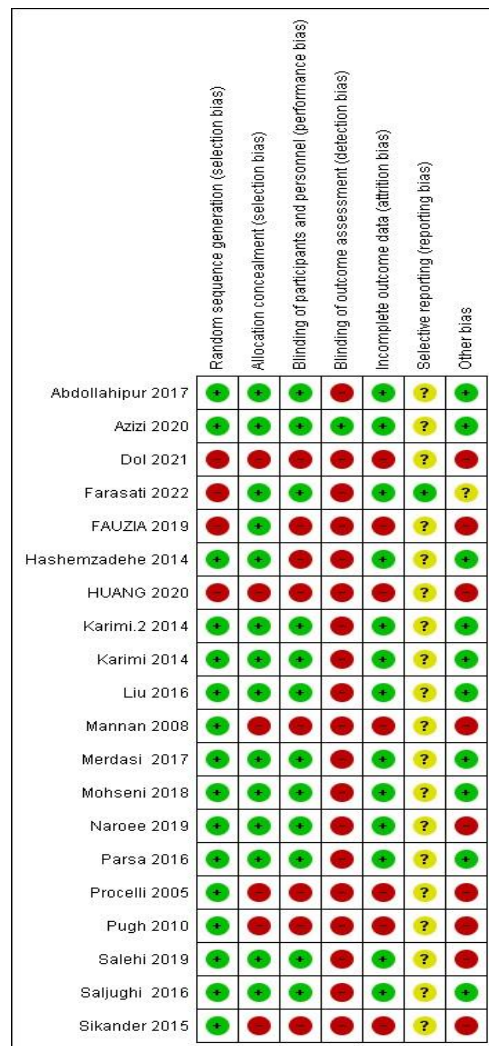


Fig. 3: Risk of bias summary (review of the authors' judgments about each risk of bias item for each included study)

The results of the present review study indicated the effect of educational, counseling, and psychological interventions on anxiety reduction, BSE enhancement, and the continuation of EBF during and before the Covid-19 pandemic. Given that the data of the reviewed studies were not complete about the intended outcomes, the meta-analysis was performed solely for the outcome of BSE for 13 studies with low risk of bias. The total results of meta-analysis of 13 studies with

1693 participants illustrated a significant increase in BSE among lactating women, although the results indicated a high heterogeneity (11.82, 95% CI: 3.82 to 19.81; $I^2 = 99.81\%$). Therefore, the subgroup analysis was performed based on the age of the participants. Based on the results, BSE of lactating women increased significantly (4.20, 95% CI: 3.61 to 4.80; $I^2 = 26.38\%$) (Fig. 4 and 5).

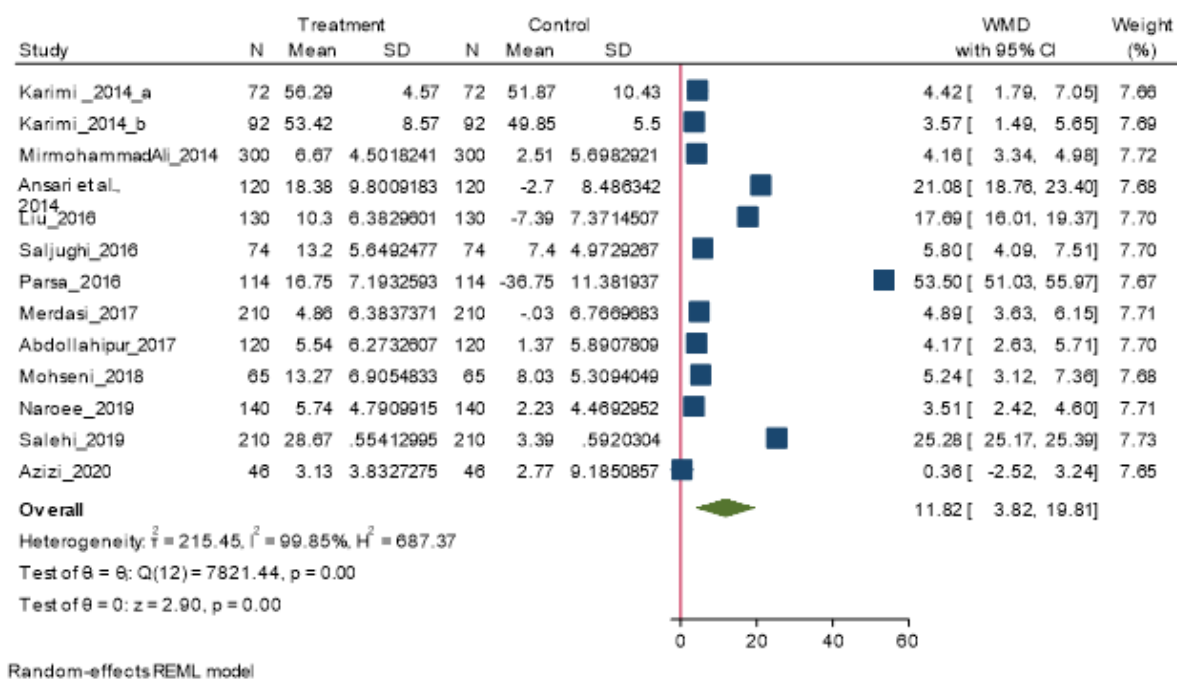


Fig. 4: Forest plot of individual SMD of Anxiety and Breastfeeding Self-efficacy for intervention versus control group

Although visual inspection of the funnel plot suggested a symmetrical distribution for studies which were included in the meta-analysis (Fig. 6) the results from the Beggs and Egger test did not indicate the evidence of publication bias. Two studies investigated the effect of supportive intervention on anxiety and BSE during the Covid-19 pandemic, which were excluded from the meta-analysis, due to their high risk of bias. The re-

sult indicates that educational and training based interventions could be effective on maternal breastfeeding self-efficacy but the meta-analysis could not reveal which type of interventions was more effective. Additional clinical trials with standard methodology are needed to identify the most effective intervention approach to improve breastfeeding self-efficacy in mothers.

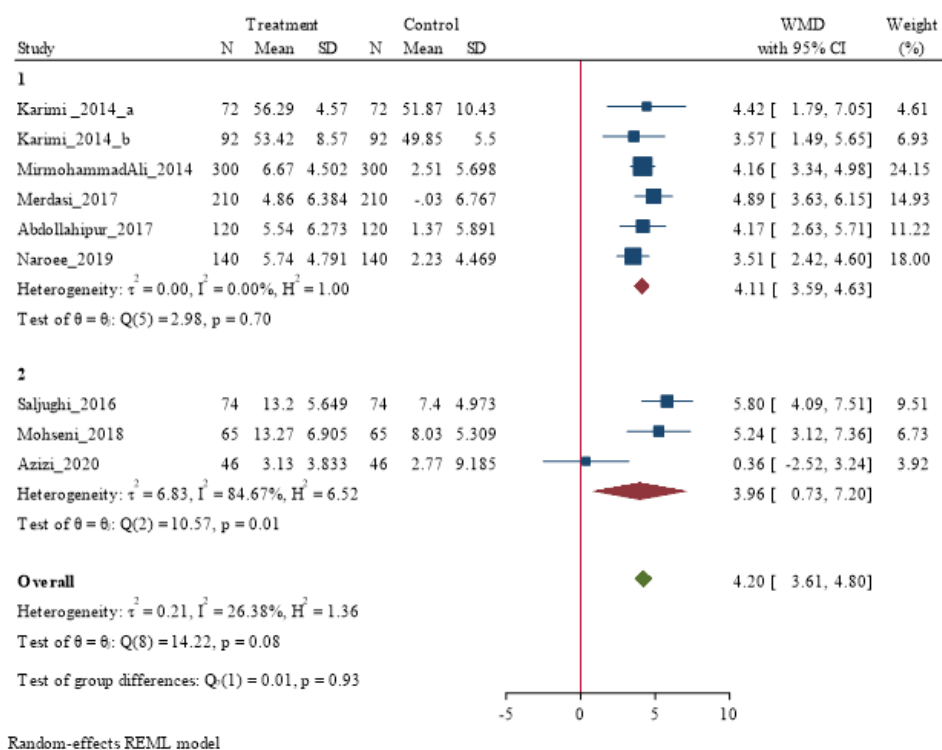


Fig. 5: Forest plot of sub group analysis for individual SMD of Anxiety and Breastfeeding Self-efficacy for intervention versus control group

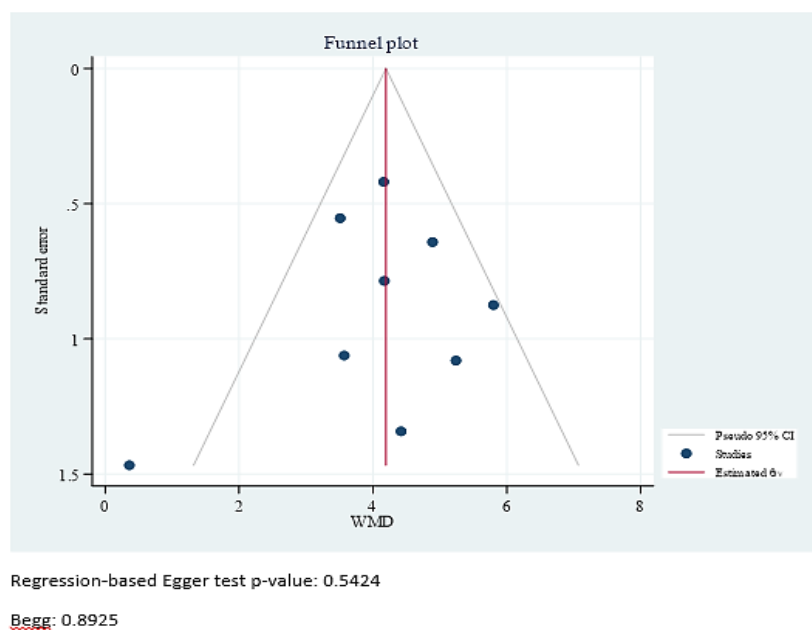


Fig. 6: Funnel plot of SMD vs the standard error for intervention vs control and after including the missing studies by “trim and fill” method in Anxiety and Breastfeeding Self-efficacy outcome

Discussion

This was the first meta-analysis that investigated the effect of interventions on BSE among lactating women, which searched and evaluated all the studies conducted before and during the Covid-19 pandemic. The results of the review section of the present study indicated the effect of various interventions on BSE among women during the postpartum period before the Covid-19 pandemic. The results of a pilot study (37) revealed the effect of a special intervention, essential coaching, on improving BSE among lactating women during the Covid-19 pandemic. Further, a case study demonstrated the positive effect of cognitive-behavioral interventions on anxiety and self-efficacy (25).

The findings of another study with the cognitive-behavioral based intervention, indicated positive effect of cognitive-behavioral counseling on maternal breastfeeding self-efficacy (BSE) (27). The results of interventional studies with the approaches including breastfeeding counseling, participative counseling (29), stress management counseling (17), in-home supportive counselling (31-32) indicate improve in the EBF and BSE of lactating women during postpartum period. Also a case study examined the effect of dialectical behavior therapy (an innovative and principle and cognitive-behavioral based therapy with the integration of mindfulness) on depression and anxiety during late pregnancy and early childbirth in a lactating woman during the Covid-19 pandemic and report that this intervention could decrease maternal anxiety and depression (25).

Among educational intervention, the findings of studies with educational package (intervention) (33), educational pamphlet (in home visit) (34), training breastfeeding through role-play (35), and interventions through message (36-37) revealed a significant effect on BSE. The finding of a study with the essential Coaching approach (37) (interventions, including text messages about infant care and maternal mental health, postpartum care during the pandemic, and COVID-19-specific messages during six weeks after delivery) indicat-

ed that, this type of intervention during Covid19 pandemic could significantly increase maternal breastfeeding self-efficacy and reduced their perceived anxiety. However, it was suggested to assess the real effects of this program in further studies by selecting a control group (37).

Liu et al, in their study reported that, supportive and combined interventions including breastfeeding workshop before childbirth had significant positive effect on EBF and BSE (38). Additionally, Abdollahipour et al, performed a study to compare the effect of newborns crawling toward the breast and educational strategies (such as showing attractive videos and photos and verbal encouragement) on BSE. The findings revealed a significant effect of educational strategies on BSE. Given the high benefits of crawling toward the breast, it is recommended to do so and training based on self-efficacy promotion strategies for primiparous women (39). The positive effect of kangaroo mother care (40) and the skin-to-skin contact between mother and baby on BSE (40) was reported in other studies. Also the results of two studies illustrated the positive impact of the motivational interview on BSE (41-42). Additionally, hospital visits and home visits were performed for the intervention group by the breastfeeding support team in an investigation, demonstrating the positive effect of this intervention on the improvement and continuation of breastfeeding (44). Procelli (2005) indicated a significant reduction in maternal anxiety, due to music therapy and relaxation (45). Further, the results of a study investigated the positive effect of counseling with stress management approach to reduce anxiety and postpartum distress and increase breastfeeding self-efficacy (17).

Strengths and limitations

Based on a review by the research team, this is the first review on the effect of educational and psychological interventions on the anxiety and breastfeeding self-efficacy during the Covid-19 pandemic. A meta-analysis applied in the present study, which is the strength of this study. Despite the aforementioned strengths, the findings should be cautiously interpreted due to some lim-

itations. Although we applied a random-effects model to take between-study variation into account, the evidence of between-study heterogeneity was found in the main analysis. Finally, the findings cannot be generalized to all conditions since most trials were conducted in Iran, where the culture is relatively different from other countries.

Conclusion

Finally, reviewing the articles in the present review and meta-analysis indicated the need for further studies to achieve an appropriate intervention method for lactating women, especially during epidemic crises, such as Covid-19 pandemic, accompanied by many psychological consequences. The findings of the present review study can provide the valid scientific evidence for researchers and maternal health care providers during the postpartum period. Considering the review of the quality of the conducted studies and based on the valuable results reported to the weaknesses of aforementioned early studies, further studies with strong intervention methodology should be conducted during the postpartum period and especially, in the first month of birth to reduce symptoms of stress and anxiety in the mother, establish better mother-child attachment, and promote BSE and maternal performance during the Covid-19 pandemic.

Journalism Ethics considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

Abbreviations

BSE: breastfeeding self-efficacy; PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analyses Protocols; RCT: Randomized Control Trial; EBF: exclusive breastfeeding; CI: Confidence Interval; OR: Odds Ratio; PICO: Population, Intervention, Comparison, Outcome;

SMD: Standardized Mean Difference; DBT: Dialectical Behavior Therapy; WHO: World Health Organization.

Acknowledgements

The authors appreciate the faculty members of the Department of Community Health Nursing of Tabriz University of Medical Sciences (Tabriz, Iran) for their grateful assistance.

This study was supported financially by the Research Deputy of Tabriz University of Medical sciences (grant Number: TBZMED.REC: 1399.1078). It was undertaken as part of the project “The effect of counseling with stress management approach on anxiety and distress and breastfeeding self-efficacy in Corona pandemic: a quasi-experimental study”, a program to develop and evaluate an appropriate intervention for improving breastfeeding quality in women during post-partum. None of the funding bodies participated in the design of the study; in the collection, analysis, and interpretation of the data; or in the writing of the manuscript.

Conflict of interest

The authors declare that they have no competing interest.

References

1. Rahmani F, Seyedfatemi N, Asadollahi M, et al (2011). Predisposing factors of postpartum depression. *Iran Journal of Nursing*, 24 (72): 78-87.
2. Nagel EM, Howland MA, Pando C, et al(2022). Maternal psychological distress and lactation and breastfeeding outcomes: A narrative review. *Clin Ther*, 44(2):215-27.
3. Borra C, Iacovou M, Sevilla A (2015). New evidence on breastfeeding and postpartum depression: the importance of understanding women’s intentions. *Matern Child Health J*, 19 (4): 897-907.
4. Bastani F, Rahmatnejad L, Jahdi F, et al (2008). Breastfeeding self efficacy and perceived stress in primiparous mothers. *Iran Journal of Nursing*, 21 (54): 9-23.(In Persian)

5. Fawcett EJ, Fairbrother N, Cox ML, et al (2019). The prevalence of anxiety disorders during pregnancy and the postpartum period: a multivariate Bayesian meta-analysis. *J Clin Psychiatry*, 80(4): 18r12527.
6. Alshikh Ahmad H, Alkhatib A, Luo J (2021). Prevalence and risk factors of postpartum depression in the Middle East: a systematic review and meta-analysis. *BMC Pregnancy Childbirth*, 21:542.
7. Liu Y, Zhang L, Guo N, Jiang H (2021). Postpartum depression and postpartum post-traumatic stress disorder: prevalence and associated factors. *BMC Psychiatry*, 21(1):487.
8. Cheng CY, Chou YH, Chang CH, Liou SR (2021). Trends of perinatal stress, anxiety, and depression and their prediction on postpartum depression. *Int J Environ Res Public Health*, 18(17):9307.
9. Makwana N (2019). Disaster and its impact on mental health: A narrative review. *J Family Med Prim Care*, 8 (10): 3090-3095.
10. Kontoangelos K, Economou M, Papageorgiou C (2020). Mental health effects of COVID-19 pandemic: a review of clinical and psychological traits. *Psychiatry Investig*, 17(6):491-505.
11. Chen Q, Li W, Xiong J, et al (2022). Prevalence and risk factors associated with postpartum depression during the COVID-19 pandemic: A literature review and meta-analysis. *Int J Environ Res Public Health*, 19 (4): 2219.
12. Wu Y, Zhang C, Liu H, Duan C, et al (2020). Perinatal depressive and anxiety symptoms of pregnant women during the coronavirus disease 2019 outbreak in China. *Am J Obstet Gynecol*, 223(2):240.e1-240.e9.
13. Yasemi M, Razjooyan K (2001). Relationship of mental disorder anxiety and depression with cessation of breastfeeding. *Journal of Guilan University of Medical Sciences*, 10(39): 1-7.
14. Fajardo M, Florido J, Villaverde C, et al (1994). Plasma levels of β -endorphin and ACTH during labor and immediate puerperium. *Eur J Obstet Gynecol Reprod Biol*, 55(2): 105-8.
15. Oyetunji A, Chandra P (2020). Postpartum stress and infant outcome: A review of current literature. *Psychiatry Res*, 284:112769.
16. Gila-Díaz A, Carrillo GH, López de Pablo ÁL, et al (2020). Association between maternal postpartum depression, stress, optimism, and breastfeeding pattern in the first six months. *Int J Environ Res Public Health*, 17(19):7153.
17. Shamsdanesh S, Nourizadeh R, Hakimi S, et al (2023). The effect of counseling with stress management approach on postpartum anxiety and distress and breastfeeding self-efficacy during COVID-19 pandemic: a randomized controlled trial. *BMC Pregnancy Childbirth*, 23(1): 26.
18. Cullen W, Gulati G, Kelly BD (2020). Mental health in the COVID-19 pandemic. *QJM*, 113(5):311-2.
19. Soklaridis S, Lin E, Lalani Y, Rodak T, Sockalingam S (2020). Mental health interventions and supports during COVID-19 and other medical pandemics: A rapid systematic review of the evidence. *Gen Hosp Psychiatry*, 66:133-46.
20. Schmidt B, Crepaldi MA, Bolze SD, Neiva-Silva L, Demenech LM (2020). Mental health and psychological interventions during the new coronavirus pandemic (COVID-19). *Estudos de Psicologia (Campinas)*, 37: e200063
21. Liberati A, Altman DG, Tetzlaff J, et al (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: explanation and elaboration. *PLoS Med*, 6(7):e1000100.
22. DerSimonian R, Laird N (1986). Meta-analysis in clinical trials. *Control Clin Trials*, 7(3):177-188.
23. Egger M, Smith GD, Schneider M, et al (1997). Bias in meta-analysis detected by a simple, graphical test. *BMJ*, 315 (7109): 629-34.
24. Begg CB, Mazumdar M (1994). Operating characteristics of a rank correlation test for publication bias. *Biometrics*, 50(4):1088-1101.
25. Huang JW, Zhou XY, Lu SJ, et al (2020). Dialectical behavior therapy-based psychological intervention for woman in late pregnancy and early postpartum suffering from COVID-19: a case report. *J Zhejiang Univ Sci B*, 21(5): 394-9.
26. Mannan I, Rahman SM, Sania A, et al (2008). Can early postpartum home visits by trained community health workers improve breastfeeding of newborns? *J Perinatol*, 28 (9): 632-40.
27. Sikander S, Maselko J, Zafar S, et al (2015). Cognitive-behavioral counseling for exclusive

- breastfeeding in rural pediatrics: a cluster RCT. *Pediatrics*, 135 (2): e424-e31.
28. Parsa p, Boojar A, Roshanaei G, et al (2016). The Effect breastfeeding counseling on self-efficacy and continuation breastfeeding among primiparous mothers: a randomised clinical trial. *Avicenna J Nurs Midwifery Care*, 24 (2): 98-104.
 29. Fauzia F, Fudholi A (2020). The influence of participative counseling approach on improving breastfeeding self-efficacy to pregnant women in Indonesia. *Asian J Pharm Clin Res*, 13 (1): 85-88.
 30. Azizi E, Maleki A, Mazloomzadeh S, et al (2020). Effect of stress management counseling on self-efficacy and continuity of exclusive breastfeeding. *Breastfeed Med*, 15 (8): 501-8.
 31. Farasati M, Nourizadeh R, Sattarzadeh-Jahdi N, et al (2022). The Effect of In-Home Supportive Counseling on Breastfeeding Self-Efficacy and Breastfeeding Performance Following Cesarean Section Among Primiparous Women. *International Journal of Women's Health and Reproduction Sciences*. Accepted article. (In press).
 32. Farasati M, Nourizadeh R, Sattarzadeh-Jahdi N, et al (2022). The effect of in-home supportive counseling on maternal functioning and self-efficacy following cesarean section among primiparous women. *Journal of Education and Health Promotion*. Accepted article. (In press).
 33. Hashemzadeh M (2014). Effect of educational package on breastfeeding self-efficacy in postpartum period. *Payesh*, 13 (2): 221-8.
 34. Mohseni H, Jahanbin I, Sekhavati E, et al (2018). An investigation into the effects of prenatal care instruction at home on breast-feeding self-efficacy of first-time pregnant women referred to shiraz clinics. *Iran. International Journal of Women's Health and Reproduction Sciences*, 6 (1): 41-46.
 35. Saljughfi F, Savabi Esfahani M, Kohan S, et al (2016). Promoting breastfeeding self-efficacy through role-playing in pregnant women. *Int J Pediatr*, 4 (7): 2061-8.
 36. Merdasi F, Araban M, Saki MA (2017). The effect of message-framing on breastfeeding self-efficacy among nulliparous women in Shushtar, Iran. *Electron Physician*, 9 (1): 3554-60.
 37. Dol J, Aston M, Grant A, et al (2022). Implementing Essential Coaching for Every Mother during COVID-19: A Pilot Pre-Post Intervention Study. *Birth*, 49 (2): 273-280.
 38. Liu L, Zhu J, Yang J, et al (2017). The effect of a perinatal breastfeeding support program on breastfeeding outcomes in primiparous mothers. *West J Nurs Res*, 39 (7): 906-23.
 39. Abdollahipour F, Nougiah S, Latifi SM, et al (2017). The impact of applying the breast crawl (TBC) with other educational strategies on breastfeeding self-efficacy after the first breastfeeding among primiparous women in Dezful. *Iran J Health Educ Health Promot*, 5(1): 20-32
 40. Karimi A, Bagheri S, Tara F, Khadivzadeh T, Mousavi Bazaz SM (2014). Effect of Kangaroo Mother Care on breastfeeding self-efficacy in primiparous women, 3 month after child birth. *The Iranian Journal of Obstetrics, Gynecology and Infertility*, 17 (120): 1-8.
 41. Karimi A, Khadivzadeh T, Bagheri S (2014). Effect of immediate and continuous mother-infant skin-to-skin contact on breastfeeding self-efficacy of primiparous women: a randomised control trial. *Women Birth*, 27 (1): 37-40.
 42. Narooe H, Rakhshkhorshid M, Shakiba M, et al (2020). The effect of motivational interviewing on self-efficacy and continuation of exclusive breastfeeding rates: a quasi-experimental study. *Breastfeed Med*, 15 (8): 522-7.
 43. Salehi F, Motaghi Z, Keramat A, et al (2019). Comparing the effect of talks and motivational interviews on self-efficacy of exclusive maternal breastfeeding in primiparous women. *J Mazandaran Univ Med Sci*, 29 (171): 45-57.
 44. Pugh LC, Serwint JR, Frick KD, et al (2010). A randomized controlled community-based trial to improve breastfeeding rates among urban low-income mothers. *Acad Pediatr*, 10 (1): 14-20.
 45. Procelli DE. Effects of music therapy and relaxation prior to breastfeeding on the anxiety of new mothers and the behavior state of their infants during feeding [Master thesis]. College of music, The Florida State University, USA; 2005.