https://doi.org/10.47822/bn.v13i1.987
ISSN 2526-6349 *On-line version*
ISSN 2175-1943 *Print version*

Review article

Effects of aromatherapy on the control of symptoms of depressive disorder in postpartum women: systematic review and meta-analysis

Efeitos da aromaterapia no controle dos sintomas do transtorno depressivo em puérperas: revisão sistemática e metanálise

Marcelo José da Silva de Magalhães[1,2], Yasmin Macedo Lopes de Queiroz[1], Ana Clara Rodrigues Morais[1]

[1]*Centro Universitário do Norte de Minas, Montes Claros, Minas Gerais, Brazil.*
[2]*Hospital Aroldo Tourinho, Montes Claros, Minas Gerais, Brazil.*

Resumo

Objective: to evaluate the effects of aromatherapy in managing the symptoms of depressive disorder in postpartum women. **Materials and Methods:** this is a systematic review of the literature, using data from studies published in the last 5 years in the MEDLINE, Scielo, LILACS and PubMed databases as collection instruments. Furthermore, a meta-analysis was carried out using the Cochran's Q test and I^2 and the funnel Plot. **Results:** 11 studies were identified based on the use of descriptors and filters in the databases, such as language and period of publication. Removing duplicate articles, 7 studies were obtained. After applying the exclusion and screening criteria, considering reading the title, abstract and keywords, 2 studies were selected for the systematic review and meta-analysis. The meta-analysis demonstrated statistical significance in favor of aromatherapy in the treatment of depressive disorder in postpartum women. The results of other research corroborate the improvement in depressive symptoms after the use of aromatherapy evidenced in this study. This alternative treatment can enhance the drug and psychological therapy recommended in guidelines. **Conclusion:** aromatherapy proved to be effective in controlling depressive symptoms in postpartum women and can be used as a complementary therapy in the treatment of this condition.

Keywords: Aromatherapy. Essential oils. Baby blues. Depressive Disorder. Postpartum.

Abstract

Objetivo: avaliar os efeitos da aromaterapia no manejo dos sintomas do transtorno depressivo em puérperas.
Materiais e Métodos: trata-se de uma revisão sistemática da literatura, usando-se como instrumentos de coleta dados de estudos publicados nos últimos 5 anos nas bases de dados MEDLINE, Scielo, LILACS e PubMed. Ademais, foi feita uma metanálise utilizando o teste Q de Cochran e o I^2 e o gráfico em funil. **Resultados:** foram identificados 11 estudos a partir do uso dos descritores e filtros nas bases de dados, como o idioma e o período de publicação. Removendo os artigos duplicados, foram obtidos 7 estudos. Após a aplicação dos critérios de exclusão e triagem, considerando a leitura do título, resumo e palavras-chave, 2 estudos foram selecionados para a revisão sistemática e metanálise. Esta demonstrou significância estatística a favor da aromaterapia no tratamento do transtorno depressivo em puérperas. Os resultados de outras pesquisas corroboram com a melhora dos sintomas depressivos após o uso de aromaterapia evidenciada neste estudo. Este tratamento alternativo pode potencializar a terapêutica medicamentosa e psicológica preconizada em diretrizes. **Conclusão:** a aromaterapia mostrou-se eficaz no controle dos sintomas depressivos em puérperas, podendo ser utilizada como terapia complementar no tratamento dessa condição.

Palavras-chave: Aromaterapia. Óleos essenciais. Depressão Pós-Parto. Transtorno Depressivo. Puerpério.

Corresponding author: Marcelo José da Silva de Magalhães | marcelo7779@yahoo.com.br
Received: 03|05|2024. Approved on: 05|17|2024.
Evaluated by the double-blind review process.

How to cite this article: Magalhães MJS, Queiroz YML, Morais ACR. Effects of aromatherapy on the control of depressive disorder symptoms in postpartum women: systematic review and meta-analysis. Revista Bionorte. 2024 jan-jul;13(1):527-39. https://doi.org/10.47822/bn.v13i1.987

Introduction

Depressive disorder is relatively prevalent in the population and has debilitating and potentially lethal characteristics. It is estimated that more than 300 million people around the world have this diagnosis[1]. The World Health Organization points to this illness as the biggest contributor to global disability. It is known that in adolescence, this disorder is around 30 times more likely to lead to suicide[1].

Epidemiological data indicate that depression in postpartum women affects around 10-15% of women worldwide. It is known that this disorder is more prevalent among women living in developing countries, with figures varying between 19 and 15%[2-4]. In Brazil, the prevalence of postpartum depression varies between 10.8 and 42.8%[5,2]. A study on medical costs revealed that, in the United Kingdom, it is estimated that 8.1 billion euros are spent on treating depression in the neonatal period, anxiety, as well as maternal psychosis[6,2].

Several risk factors have been pointed out in the medical literature for the development of this mental disorder, such as obstetric complications, unwanted pregnancy, a conflictual relationship with the mother, little social and financial support, difficulties in the relationship with the spouse and family, and a personal history of depressive disorder[7,2].

When psychological treatment fails to control depressive symptoms, drug treatment is indicated. Among the antidepressant drugs used are those of the selective serotonin reuptake inhibitor (SSRI) class, such as sertraline[8]. The use of SSRIs causes little elimination of the drug in breast milk and is therefore a treatment option[8].

An existing option for the treatment of depressive disorder is aromatherapy, in which products from nature are used to treat this mood disorder. The essential oils used for this purpose can be extracted from petals, bark, fruit, stems, wood, roots, rhizomes, and grasses[9].

Aromatherapy is the use of essential oils to promote physical and mental health and well-being[10]. This complementary therapy has been growing recently and is seen by part of the population as a more natural and less harmful alternative to conventional medicines[11].

There are four ways of absorbing the components of essential oils: inhalation, topical use, internal use, and oral use. Inhalation is the simplest way to use these products and can be done through a diffuser, which disperses the essential oil through the air, or you can drip a few drops onto a tissue and breathe in the aroma. There is also topical application, which consists of using the compound directly on the skin, in the form of soaps, lotions, and perfumes. Oral use, such as capsules, and internal use, such as suppositories, are less frequently used and should be specially guided by a professional[10].

Essential oils are known to have antibacterial and antiviral properties, as well as psychological effects[2]. Because of this, aromatherapy is used in the adjuvant management of various clinical and

psychiatric conditions, especially anxiety and depression, since the use of anxiolytic and antidepressant medications has various side effects which, in most cases, are not generated by essential oils[12]. However, these compounds, if used inappropriately, can also cause damage, such as burns and toxicity[13].

It is not known for sure when aromatherapy began to be used by humans in isolation. There are reports that a Greek physician who lived in the first century BC wrote a treatise on the therapeutic effects of natural substances. The Persians and Egyptians also knew about some essential oils, as they used them to protect their skin and slow down the decomposition of the dead. It wasn't until 1920 that a French chemist used the term aromatherapy for the first time and wrote a book with a similar name a few years later. During the First World War, a doctor allegedly used essential oils due to a lack of antibiotics, revealing their antimicrobial effects. In the Second World War, with the growth of the pharmaceutical industry, aromatherapy lost ground. However, the emergence of multiresistant microorganisms led to the creation of even more potent medications, with more undesirable side effects, which once again sparked interest in alternative therapies, such as essential oils. Aromatherapy is now known worldwide and is increasingly used[14].

When essential oils are inhaled in aromatherapy, the molecules activate the olfactory, respiratory, gastrointestinal, and/or integumentary systems based on the pathway of activation. These molecules are capable of releasing neurotransmitters, such as endorphins, to trigger a feeling of well-being and an analgesic effect. Two common pathways trigger a pathophysiological response to aromatherapy molecules[9].

The most common route is inhalation through a diffuser. The activation of olfactory stimulation produces immediate changes in the parameters of blood pressure, heart rate, muscle tension, pupil dilation, body temperature, and blood flow[9].

The second common route is through the skin, by massage, when the molecules are absorbed through the skin. This route can activate olfactory stimulation and triggers the application of scented oil to the skin, triggering a mental and physiological response. The absorption of essential oils through the skin can reduce the stress perceived by the patient, improve healing, and increase communication[9].

Considering the above, it is of great importance that health professionals understand the effects of essential oils and know how to guide their patients to reap the benefits that this complementary therapy can generate. This study aimed to carry out a systematic review and meta-analysis of the effects of aromatherapy on the management of symptoms of depressive disorder in postpartum women.

Materials and Methods

This is a systematic review of the literature, which consists of a careful search and evaluation of published studies. In the first stage, the following guiding research question was formulated: What are the effects of aromatherapy on controlling the symptoms of depressive disorder in postpartum women?

In the second stage, a scientific search was carried out using MEDLINE (via the Virtual Health Library, VHL), Scientific Electronic Library Online (Scielo), Latin American and Caribbean Health Sciences Literature (LILACS), and PubMed databases in November 2023. Four search keys were used, the first two with descriptors in Portuguese and Boolean operators: “Depression” or “Depressive disorder” and “Aromatherapy” and “Postpartum” and “Depression” or “Depressive Disorder” and “essential oils” and “postpartum”. The other search keys included English language descriptors and Boolean operators: “Depression” or “Depressive disorder” and “Aromatherapy” and “Postpartum period” and “Depression” or “Depressive disorder” and “essential oils” and “Postpartum period”, listed in the Health Sciences Descriptors (DeCS).

The inclusion criteria for use in the systematic review and meta-analysis were articles in Portuguese and English, published in the last 5 years, that addressed the effects of aromatherapy in the treatment of depressive disorder in women in the postpartum period. Repeated studies in one or more databases, review articles, studies that did not address the problem in question, and articles that were not available in full and were excluded. To complement the discussion, studies with a publication period of more than five years were analyzed.

The meta-analysis used fixed effects models, heterogeneity tests, and a bias funnel plot. Regarding the heterogeneity analysis, Cochran's Q test and I^2 were used. I^2 values below 25% were considered acceptable. In the case of I^2 above 25%, it was decided to remove the outlined papers to correct this value. The variable assessed was the score obtained on the Edinburgh Postpartum Depression Scale (EPDS) (Figure 3).

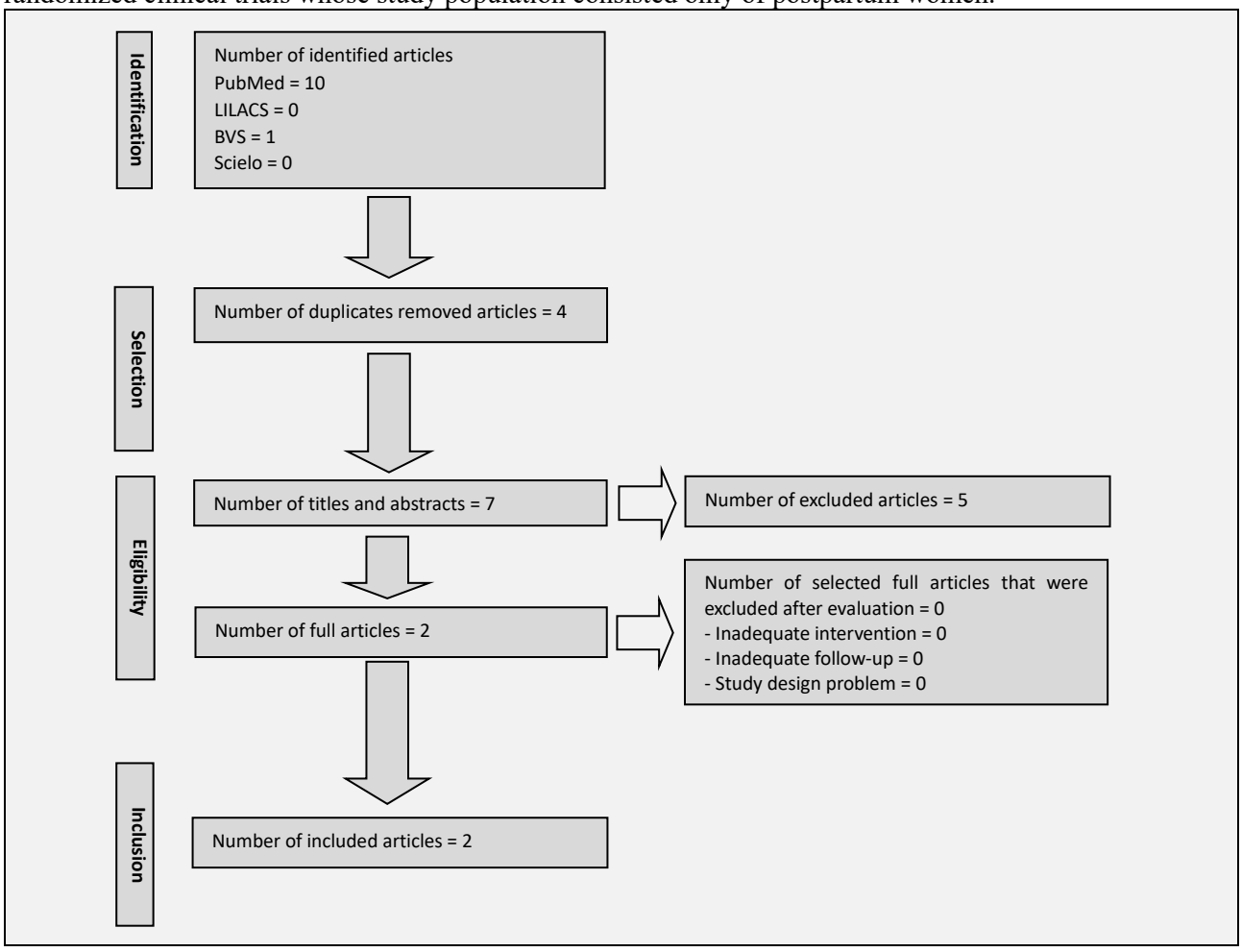
Fixed effects models were used to calculate the weight or contribution of each study, as this model conferred statistical significance to the meta-analysis. The funnel plot was used to investigate the presence of publication bias or selective bias in the studies included in the meta-analysis (Figure 4).

The confidence interval used was 95% and the p-value was significant at <0.05. The meta-analysis control group was made up of the control groups present in the two randomized studies obtained in the systematic review. The intervention group consisted of patients who received aromatherapy as a way of treating the symptoms of postpartum depression. The calculations were processed using the Meta-Mar tool, version 3.5.1.

Results

Initially, 11 studies were found using the descriptors and filters in the databases, such as language and period of publication. After removing duplicate articles, 7 studies were obtained. After applying the exclusion and screening criteria and reading the title, abstract, and keywords, 2 studies were considered for the next selection stage (Figure 1).

Figure 1. Flowchart of the screening process for articles published between 2022 and 2023 consisting of randomized clinical trials whose study population consisted only of postpartum women.



The selected studies were published between 2022 and 2023, and both were randomized clinical trials whose study population consisted only of postpartum women. The intervention aimed to evaluate the use of aromatherapy in reducing depressive symptoms in this delineated sample, with the expected results being better symptom control in the postpartum women who were part of the experimental groups.

The first study analyzed involved a total of 60 postpartum women living in Taiwan, while the second study was carried out in China and had a total sample of 160 women with postpartum depression. Bergamot essential oil was the only oil used in the first clinical trial. In the second study, some patients received aromatic massage with orange oil, while in others, this therapy was combined

with the emotional release technique. The main characteristics of the studies analyzed are shown in Chart 1.

Chart 1. Characteristics of the selected studies (n=2).

Author and year	Design	Sample and Scenario	Objective	Main results
Chen; Chen; Lee, 2022[15]	Randomized clinical trial	60 postpartum women, 29 in the experimental group and 31 in the control group were recruited from a postpartum care center in Taiwan between September 2015 and June 2017.	To evaluate the effect of bergamot essential oil on depressed mood and sleep quality in postpartum women.	Compared to the control group, the experimental group, which received aromatherapy, showed a better result in reducing depressed mood, with a p-value <001 (on the Edinburgh Postpartum Depression Scale, in the first post-test it scored 3.32 less than the control group and in the second post-test 4.09 less). There was no significant difference between the two groups in terms of sleep quality (p > .05).
Wang *et al.*, 2023[16]	Randomized clinical trial	160 women with postpartum depression, distributed into 4 groups of 40 women each, randomly divided into a control group, an aromatic massage group, an emotional release technique group, and a combined group. The participants were admitted to Hebei Hospital in China between April 2021 and May 2022	To evaluate the effects of aromatic massage associated with the emotional release technique on maternal and neonatal physical and mental health and family relationships in patients with postpartum depression.	The combined group scored higher on the GAD-7 anxiety scale and the Edinburgh Postpartum Depression Scale than the other groups, followed by the emotional release technique group and the aromatic massage group, with the control group having the lowest scores (p < 05). In terms of serotonin and dopamine levels, the combined intervention group showed the greatest increase in levels of these neurotransmitters, followed by the emotional release technique group, the aromatic massage group, and finally the control group (p < 05).

The two studies included in this systematic review were assessed for the risk of bias, to ensure that possible systematic errors did not underestimate or overestimate the results found in the clinical trials carried out. Table 2 and Figure 2 illustrate the analysis carried out about the risk of bias.

Chart 2. Summary of the risk of bias of the articles selected for the systematic review on the effects of aromatherapy in controlling the symptoms of depressive disorder in postpartum women.

Evaluated bias	Chen; Chen; Lee (2022)	Wang *et al.*, (2023)
Random sequence generation	Low risk of bias	Low risk of bias
Allocation concealment	Low risk of bias	Low risk of bias
Blinding of participants and professionals	High risk of bias	High risk of bias
Blinding of outcome assessors	Uncertain risk of bias	High risk of bias
Incomplete outcome	Low risk of bias	Low risk of bias
Selective outcome reporting	Low risk of bias	Low risk of bias
Other sources of bias	Uncertain risk of bias	Uncertain risk of bias

Source: https://training.cochrane.org/online-learning/core-software/revman

Figure 2 - Graph of the risk of bias of the articles selected for the systematic review on the effects of aromatherapy in controlling the symptoms of depressive disorder in postpartum women.

Bias	Risk
Random sequence generation	
Allocation concealment	
Blinding of participants and professionals	
Blinding of outcome assessors	
Incomplete outcome	
Selective outcome reporting	
Other sources of bias	

Low risk of bias.
Uncertain risk of bias.
High risk of bias.
Source: https://training.cochrane.org/online-learning/core-software/revman.

The studies were also assessed for methodological quality using a tool developed by the Joanna Briggs Institute (JBI) study group, as shown in Chart 3.

Chart 3. Critical appraisal checklist for analytical cross-sectional studies.

	JBI critical appraisal checklist for cross-sectional analytical studies	Yes	No	It is not clear	It is Applicable
Chen; Chen; Lee, 2022[15]	1. Were the criteria for inclusion in the sample clearly defined?	X			
	2. Have the study subjects and environment been described in detail?	X			
	3. Was exposure measured validly and reliably?	X			
	4. Were objective and standardized criteria used to measure the condition?	X			
	5. Were any confounding factors identified?		X		
	6. Have strategies for dealing with confounding factors been stated?				X
	7. Were the results measured validly and reliably?	X			
	8. Was appropriate statistical analysis used?	X			
Wang *et al*., 2023[16]	1. Were the criteria for inclusion in the sample clearly defined?	X			
	2. Have the study subjects and environment been described in detail?		X		
	3. Was exposure measured validly and reliably?	X			
	4. Were objective and standardized criteria used to measure the condition?	X			
	5. Were any confounding factors identified?		X		
	6. Have strategies for dealing with confounding factors been stated?				X
	7. Were the results measured validly and reliably?	X			
	8. Was appropriate statistical analysis used?	X			

Source: Moola *et al*., 2020[17].

The meta-analysis revealed statistical significance (P<0.05) identified in the forest graph in favor of the use of aromatherapy for the treatment of postpartum depressive disorder. An acceptable heterogeneity value of I^2=23% was noted (Figure 3). The funnel plot also provides evidence that the studies involved do not show publication bias (Figure 4).

Figure 3. Meta-analysis of the systematic review with a fixed effects model involving the articles identified. The variable assessed was the Edinburgh Postpartum Depression Scale (EPDS). On this scale, a higher score is more associated with postpartum depressive disorder.

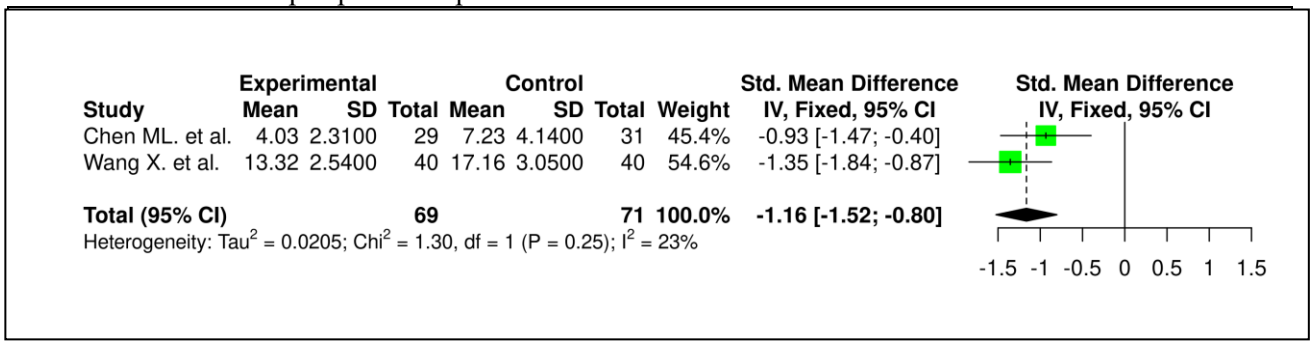
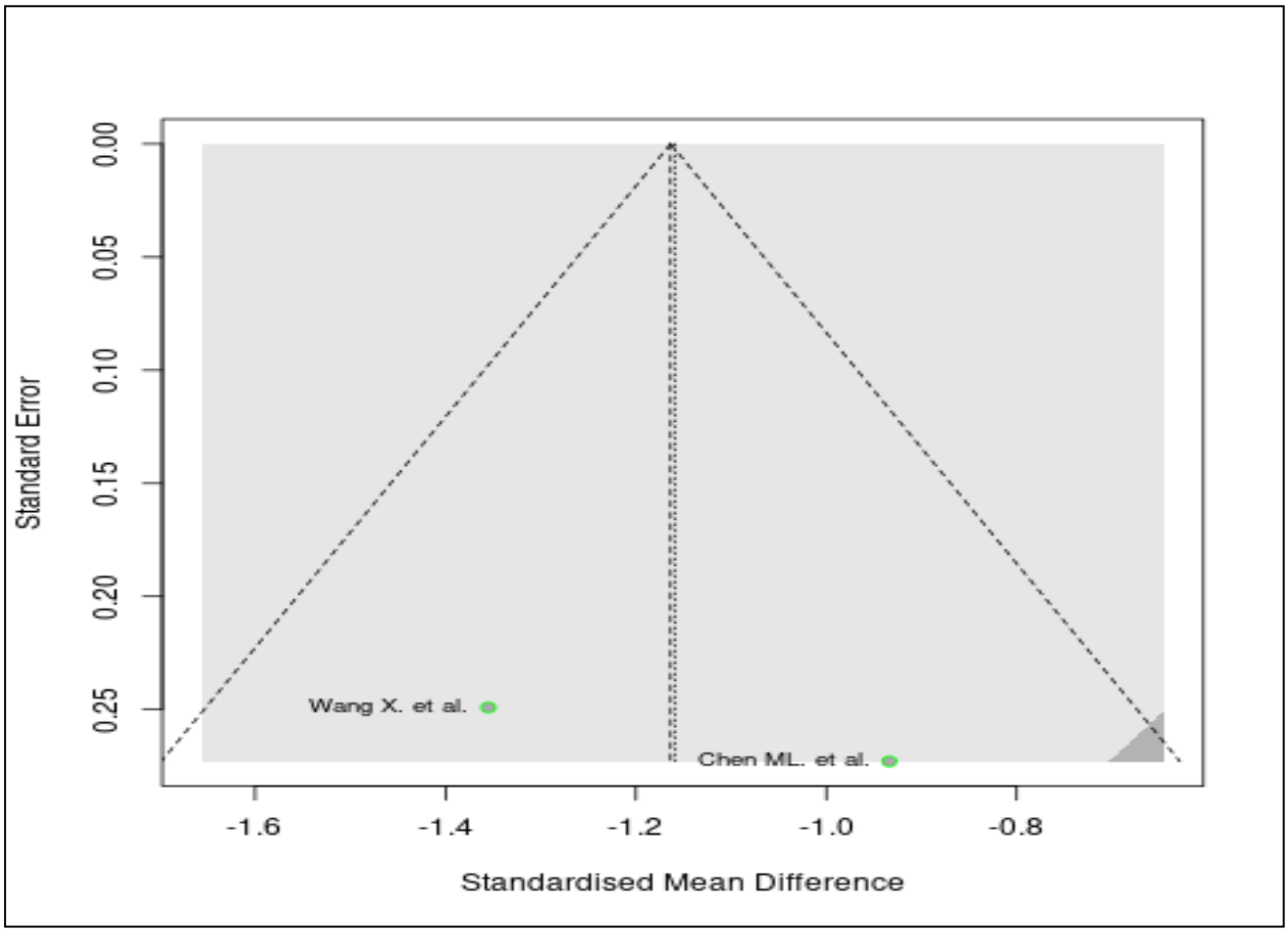


Figure 4. Meta-analysis funnel graph.



Discussion

The effect of aromatherapy on mental health is due to the direct connection of olfactory receptors to the Central Nervous System, producing changes in brain chemistry that can be recorded by the electroencephalogram[18]. The essential oils most indicated for the treatment of depressive disorders are bergamot, as used in one of the studies analyzed in this research, which increases positive feelings and improves mood, as well as lavender essential oils, which promote relaxation and reduce melancholic thoughts, and sweet orange and geranium, which have similar effects to bergamot[19].

There is a notable scarcity of randomized clinical trials on the subject and the need for further improvement, involving more aromatherapy methods and the use of other essential oils available on the market. Depressive disorder is a psychopathology that goes beyond the mother's illness, affecting the family and the baby directly. Given this, it is relevant to further explore the use of this complementary therapy in women with postpartum depression[20], especially after analyzing the results of the two studies presented, which showed a reduction in depressed mood in postpartum women who received treatment with aromatherapy.

In Brazil, population-based studies focusing on postpartum women are scarce. In any case, studies looking at women treated in basic health units and hospital units revealed that around 30 to 40% and 20%, respectively, had depressive symptoms[21].

The review in question was limited in terms of the number of studies analyzed and the lack of studies carried out in Brazil, the country in which this study was conceived. The analysis of methodological quality was satisfactory as well as it was possible to compare the articles due to the same methodology. However, there was a second limitation about the aromatherapy massage used in one of the studies, as this could act as a bias in the work.

The main reference for comparing results was the Edinburgh Postpartum Depression Scale (EPDS), which consists of a self-assessment instrument made up of 10 items referring to depressive symptoms frequently observed in the postpartum period. It assesses the ability to laugh and see the good side of things, exaggerated guilt, difficulty sleeping, easy crying, thoughts of self-mutilation or suicide, among other points[22].

The data presented agreed with each other, including in the application of the EPDS, showing that the group of women submitted to bergamot essential oil, aromatic massage, and the emotional release technique scored lower than the postpartum women in the control group. The results of another study, a double-blind clinical trial, whose approach was carried out from the 38th week of pregnancy to the 6th week postpartum, including symptom analysis also using the Edinburgh questionnaire, corroborate the improvement in depressive symptoms following the use of aromatherapy[23].

In addition, a study involving the application of acupuncture, another non-pharmacological therapeutic method, showed efficacy in the treatment of depressive disorder in postpartum women [23]. Furthermore, a systematic review and meta-analysis encompassed research looking at aromatherapy massage as a treatment for psychological symptoms in postmenopausal and aged women, showing satisfactory results in this other group of women[25].

Prescribing antidepressant drugs in the postpartum period has its risks since they all pass through breast milk in varying quantities. The most recommended class of drugs are selective serotonin reuptake inhibitors (SSRIs), with an emphasis on sertraline, precisely because of its low concentration in breast milk. Most guidelines recommend immediate drug treatment if there is severe postpartum depression; in mild to moderate cases, it is possible to start therapy with psychotherapy[26,27]. Aromatherapy can be combined in all stages of depressive disorder as an enhancer of other treatments, as it has proven to be effective, even though the guidelines focus on drug and psychological therapy.

Conclusion

The data found in this study, after analyzing the studies, suggests that aromatherapy is effective in managing the symptoms of depressive disorder in postpartum women, and can therefore be used as an enhancer of drug treatment for postpartum depression or even contribute to reducing the use of these medications, which would have fewer adverse effects for the postpartum woman and the infant.

It is suggested that new randomized clinical trials be carried out, using different essential oils and with a Brazilian study population, to better elucidate this practice and expand its use in Brazil.

References

1.Stringaris A. Editorial: What is depression? J Child Psychol Psychiatry. 2017 Dec;58(12):1287-9. https://doi.org/10.1111/jcpp.12844.

2. Lima RV, Melo LC, Barbosa NG, Arciprete AP, Monteiro JC. Transtorno depressivo em mulheres no período pós-parto: análise segundo a raça/cor autorreferida. Acta Paul Enferm. 2023;36:eAPE03451. http://dx.doi.org/10.37689/acta-ape/2023AO03451.

3. Postpartum Depression: Action Towards Causes and Treatment (PACT)Consortium. Heterogeneity of postpartum depression: a latent class analysis. Lancet Psychiatry. 2015;2(1):59-67. https://doi.org/10.1016/S2215-0366(14)00055-8.

4.Gelaye B, Rondon MB, Araya R, Williams MA. Epidemiology of maternal depression, risk factors, and child outcomes in low-income andmiddle-income countries. Lancet Psychiatry. 2016;3(10):973-82. https://doi.org/10.1016/S2215-0366(16)30284-X.

5. Hahn-Holbrook J, Cornwell-Hinrichs T, Anaya I. Economic and health predictors of national postpartum depression prevalence: a systematic review, meta-analysis, and meta-regression of 291 studies from 56 countries. Front Psychiatry. 2018;8:248. https://doi.org/10.3389/fpsyt.2017.00248.

6. Jones I. Post-partum depression-a glimpse of light in the darkness? Lancet.2017;390(10093):434–5. https://doi.org/10.1016/S0140-6736(17)31546-5.

7. Santos FA, Brito RS, Mazzo MH. Puerpério e revisão pós-parto: significados atribuídos pela puérpera. Rev Min Enferm.2013;17(4):859–63.http://www.revenf.bvs.br/pdf/reme/v17n4/v17n4a08.pdf.

8. Stewart DE, Vigod SN. Postpartum Depression: Pathophysiology, Treatment, and Emerging Therapeutics. Annu Rev Med. 2019;70:183-196. https://doi.org/10.1146/annurev-med-041217-011106.

9. Farrar AJ, Farrar FC. Clinical Aromatherapy. Nurs Clin North Am. 2020 Dec;55(4):489-504.https://doi.org/10.1016/j.cnur.2020.06.015

10. Reis D, Jones T. Aromatherapy: Using Essential Oils as a Supportive Therapy. Clin J Oncol Nurs. 2017 Feb 1;21(1):16-19. https://store.ons.org/pubs/article/238681/preview.

11. Ramsey JT, Shropshire BC, Nagy TR, Chambers KD, Li Y, Korach KS. Essential Oils and Health. Yale J Biol Med. 2020 Jun 29;93(2):291-305. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7309671/pdf/yjbm_93_2_291.pdf

12. Lizarraga-Valderrama LR. Effects of essential oils on central nervous system: Focus on mental health. Phytother Res. 2021 Feb;35(2):657-79. https://doi.org/10.1002/ptr.6854

13. Farrar AJ, Farrar FC. Clinical Aromatherapy. Nurs Clin North Am. 2020 Dec;55(4):489-504.https://doi.org/10.1016/j.cnur.2020.06.015.

14. Brito AMG, Rodrigues SA, Brito RG, Xavier-Filho L Aromaterapia: da gênese a atualidade. Revista Brasileira De Plantas Medicinais. 2013;15(4):789-93.https://doi.org/10.1590/S1516-05722013000500021.

15. Chen ML, Chen YE, Lee HF. The Effect of Bergamot Essential Oil Aromatherapy on Improving Depressive Mood and Sleep Quality in Postpartum Women: A Randomized Controlled Trial. J Nurs Res. 2022 Apr 1;30(2):e201. https://doi.org/10.1097/jnr.0000000000000459.

16. Wang X, Pang R, Zhang Y, Zhang C, Sun S. Effects of Aromatherapy Massage Combined with TCM Emotional Release Technique on Maternal and Neonatal Physical and Mental Health and Family Relationship in Patients with Postpartum Depression. AlternTher Health Med. 2023 Nov 10:AT9483. Epub ahead of print. http://alternative-therapies.com/oa/index.html?fid=9483.

17.Moola S, Munn Z, Tufanaru C, Aromataris E, Sears K, Sfetcu R, Currie M, Lisy K, Qureshi R, Mattis P, Mu P. Chapter 7: Systematic reviews of etiology and risk. In: Aromataris E, Munn Z (Editors). JBI Manual for Evidence Synthesis. JBI, 2020. https://synthesismanual.jbi.global. https://doi.org/10.46658/JBIMES-20-08.

18. Nascimento A, Prade ACK. Aromaterapia: o poder das plantas e dos óleos essenciais. Observa PICS; 2020.https://observapics.fiocruz.br/produtos/colecao-cuidado-integral-na-covid-19/.

19. Sousa Santos HJ, do Nascimento GPV, Mota ADAR. Aromaterapia como alternativa no tratamento complementar da depressão. Braz J Dev. 2022;8(4):23663-23682. https://doi.org/10.34117/bjdv8n4-062.

20. Fernandes CF, Cotrin DTJ. Depressão pós-parto e suas implicações no desenvolvimento infantil.Revista Panorâmica On-Line. Barra do Garças– MT. 2013;14:15–34. https://periodicoscientificos.ufmt.br/revistapanoramica/index.php/revistapanoramica/article/view/454.

21. Lobato G, Moraes CL, Reichenheim ME. Magnitude da depressãopós-parto no Brasil: uma revisão sistemática. Ver Bras Saúde Mater Infant. 2011;11(4):369-79. https://doi.org/10.1590/S1519-38292011000400003.

22.Malloy-Diniz LF, Schlottfeldt CGMF, Figueira P, Neves FS, Corrêa H. Escala de Depressão Pós-Parto de Edimburg: análise fatorial e desenvolvimento de uma versão de seis itens. Braz J Psychiatry. 2010;32:316-318.https://doi.org/10.1590/S1516-44462010000300018.

23.Kianpour M, Moshirenia F, Kheirabadi G, Asghari G, Dehghani A, Dehghani-Tafti A. The effects of inhalation aromatherapy with rose and lavender at week 38 and postpartum period on postpartum depression in high-risk women referred to selected health centers of Yazd, Iran in 2015. Iran J Nurs Midwifery Res. 2018;23(5):395. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6111664/pdf/IJNMR-23-395.pdf.

24.Li W, Yin P, Lao L, Xu S. Effectiveness of acupuncture used for the management of postpartum depression: a systematic review and meta-analysis. Bio Med Res Int. 2019. https://doi.org/10.1155/2019/6597503.

25.Babakhanian M, Ghazanfarpour M, Kargarfard L, Roozbeh N, Darvish L, Khadivzadeh T, et al. Effect of aromatherapy on the treatment of psychological symptoms in postmenopausal and elderly women: a systematic review and meta-analysis. J Menopausal Med. 2018;24(2):127-32. https://doi.org/10.6118/jmm.2018.24.2.127.

26. Santos DA, Silva FRR, Santos NM, Cardoso, RS. Análise dos aspectos farmacológicos que envolvem o tratamento da depressão pós-parto: revisão sistemática. Research, Society and Development. 2022, 11(8):e20411830971. https://doi.org/10.33448/rsd-v11i8.30971.

27. Silva TG, Vasconcelos PF, Moura IGS. Uma abordagem atual da utilização de antidepressivos no manejo da depressão pós-parto. SMAD, Revista Eletrônica Saúde Mental Álcool e Drogas (Edição em Português).2021;17(1):101-8. http://dx.doi.org/10.11606/issn.1806-6976.smad.2021.159781.