

Review



Therapeutic Potential of Chamomile in Women's Health and Wellbeing: A Narrative Review

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ABSTRACT:

Background: Chamomile, derived from both *Matricaria chamomilla* and *Chamaemelum nobile* (L.) All, has long been used as a holistic treatment and has demonstrated the ability to address health issues associated with women's health, including menstrual cramps, anxiety, stress, and sleep problems. Chamomile has three major active compounds – apigenin, alpha bisabolol and chamazulene – which provide anti-inflammatory, analgesic, antispasmodic and mild sedative properties. Chamomile has an apple-like fragrance, which promotes relaxation through aromatherapy. **Objectives:** The purpose is to review the effectiveness of chamomile in relieving the symptoms of dysmenorrhea, anxiety, and sleep disturbances in women (e.g., premenstrual syndrome, menopause, postpartum) relative to peppermint and lavender. **Methods:** The review is based on a review of a comparative analysis of the above-mentioned herbs. This narrative review explains and critically evaluates reported experimental and clinical studies on the role of chamomile in women's health. **Results:** Reported studies support the effectiveness of chamomile in reducing menstrual pain, promoting calming through aroma, and reducing anxiety while improving the quality of life associated with multiple women's health conditions. In addition, it has unique categories of benefits. **Conclusion:** Despite the challenges of small sample sizes, varied dosages and inconsistent preparation techniques, chamomile demonstrates strong potential as a gentle, sensory alternative therapy. Future studies should emphasize the need for standardized studies with larger samples, longer follow-up and optimized aromatherapy techniques to assess the long-term safety of chamomile

KEYWORDS: Aromatherapy, anxiety, chamomile, *Chamaemelum nobile*, dysmenorrhea, menstrual cramps, narrative review, women's health.

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1. INTRODUCTION

For hundreds of years, chamomile tea (from either *Matricaria chamomilla* or *Chamaemelum nobile* (L.) All) has been enjoyed as a lovely-smelling, and gently effective, herbal drink. Historically, chamomile was used to calm inflammation and muscle spasms, soothe frayed nerves, lessen worry, help with sleeplessness, and address other sleep difficulties. [1, 2] Nowadays, those qualities are exactly what many women need for typical health issues: period cramps, stress, and not being able to sleep. Within chamomile flowers, many active terpenoids and flavonoids are present. And these components have been shown to reduce inflammation and to relax muscles. [3] A study of women with painful periods, for example, showed that chamomile tea lessened menstrual pain and the amount of bleeding, much more so than for those who didn't use it. It does this by prostaglandins, reducing uterine muscle spasms and increasing prostaglandin production. Apigenin, the main flavonoid in chamomile, is known as the one bound to benzodiazepine sites on the GABA-A receptor, which creates its calming and sleep-inducing qualities. [4] Alpha-bisabolol, a sesquiterpenoid, has been proven to be a painkiller and to combat inflammation. A lot of women prefer natural remedies because they're safe and easy to get, and do multiple things at once. [5] Chamomile tea is all of that: it's cheap and simple to make, and it contains substances that have been medically investigated. More than that, it's- warm, apple-like smell (in fact, 'ground apple' is what the Greeks called it!) has a very subtle bitter edge, and provides a comforting sensation for the senses, something that most herbal teas just don't have. [6] Chamomile is a true herbal medicine that reduces inflammation, calms you down, eases anxiety, and eases spasms. It's considerably more effective at improving painful periods and eases menstrual cramps when you start using it the day before your period is due. [7] Premenstrual Syndrome (PMS) is a huge collection of both physical and emotional

symptoms. And of all the herbal supplements people use, chamomile is often cited as a good one for dealing with PMS. [8] A small initial trial found that taking chamomile capsules for four weeks slightly improved how people got on during the day and their sleep, compared to a placebo. [9] For women going through menopause, chamomile extracts significantly improved sleep quality, as measured by the Pittsburgh Sleep Quality Index. A cup of chamomile tea is a good, safe method to get more sleep at a time of hormone changes, lessening how often you wake during the night and making your rest in general better. Chamomile is most often drunk as tea, but you can also get it in extract capsules. The chemicals in chamomile are responsible for its medical effects. [9] Studies have shown that chamomile helps with painful periods, lowers anxiety, and its mild ability to calm you down can help you sleep. Chamomile tea is easy to find, different from many other herbal teas, and its benefits for women are backed by research, helping with period pain, lowering stress, and improving sleep; plus you get the relaxing effects of its scent.

This study uniquely evaluates chamomile's multi-dimensional benefits for women's health, integrating its effects on menstrual cramps, stress, anxiety, and sleep quality with its aromatherapeutic properties. Unlike previous reviews, it provides a comparative analysis with other herbal teas, highlighting chamomile's superior efficacy in both physical and emotional relief. Furthermore, it identifies gaps in standardization, dosage, and delivery methods, paving the way for future clinical trials and optimized therapeutic formulations. The purpose is to review the effectiveness of chamomile in relieving the symptoms of dysmenorrhea, anxiety, and sleep disturbances in women (e.g., premenstrual syndrome, menopause, postpartum) relative to peppermint, ginger, raspberry leaf, lavender and *ashwagandha*. The purpose is to review the effectiveness of chamomile in relieving the symptoms of dysmenorrhea, anxiety, and sleep

disturbances in women (e.g., premenstrual syndrome, menopause, postpartum) relative to peppermint and lavender.

2. METHODOLOGY

The present study employed a narrative review approach to examine the therapeutic effects of chamomile (*Matricaria chamomilla* L.) and aromatherapy on menstrual cramps, stress, anxiety, and sleep disturbances. Relevant literature was retrieved from major databases, including PubMed, Scopus, Web of Science, and Google Scholar for studies published between 2016-2026 focusing on peer-reviewed articles, clinical trials, experimental studies, and systematic

reviews. [Table 1](#). Below states the database search methodology table adopted for the review. The search targeted studies reporting pharmacological, anti-inflammatory, anxiolytic, and sedative properties of chamomile, as well as its applications in aromatherapy interventions. Data were extracted and synthesized to summarize efficacy, safety, and mechanistic insights related to women's health outcomes. Only English-language studies were considered, encompassing both in vivo and clinical evidence. This narrative approach facilitated the integration of diverse findings, highlighting current trends, gaps, and potential therapeutic implications.

Table 1. Database search methodology table

S. No	Database	Search strategy	Filter applied	Results	Notes
1	PubMed	Chamomile OR <i>Matricaria chamomilla</i> OR <i>Chamaemelum nobile</i>	Language : English; Last 10 years	103	General outline of chamomile, pharmacology and its uses for women health
2	PubMed	Chamomile AND dysmenorrhea OR menstrual cramps	Language: English; full text; last 10 years	412	Focused on anti inflammatory and clinical trials in menstrual pain
3	PubMed	Chamomile AND anxiety Or stress relief	Language: English; full text; 2015-2026	52	Studies on anxiolytic effect through GABA modulation in anxiety reduction
4	PubMed	Chamomile AND sleep OR insomnia	Language: English;last 10 years	250	Priorities sedative properties and enhancement in sleep quality trials
5	PubMed	Chamomile AND aromatherapy OR essential oil	Language: English; full text available	290	Gone through Aroma base relaxation and mood enhancement
6	Scopus	Chamomile AND phytochemicals OR apigenin OR bisabolol	Language: English; full text; last 10 years	509	Focused on bioactive compounds that are responsible for anti inflammatory actions
7	Scopus	Chamomile AND women's health OR PMS OR menopause	Language: English; 2015 - 2026	419	Reports on PMS, menopausal symptoms and post natal benefit
8	Google Scholar	Chamomile AND Clinical trial OR randomized controlled trial	Language: English; full text	360	Reviewed RCTs that explores efficacy in dysmenorrhea, anxiety and sleep disorders
9	Google Scholar	Chamomile AND herbal tea comparison OR peppermint OR lavender	Language: English; full text	666	Comparative analysis with other herbal remedies as in the table 2
10	Web of Science	Chamomile AND safety OR adverse effects OR toxicity	Language: English; last 10 years	90	Focused dosage variability and limitations in clinical studies
11	Web of Science	Chamomile AND pharmacology OR anti-inflammatory OR antispasmodic	Language: English; full text	304	Mechanistic studies such as prostaglandin reduction

Bioactive compounds of Chamomile: Chamomile (often known as *Matricaria chamomilla* or *Matricaria recutita* for German and *Chamomilla nobile* for Roman) is an example of a plant found in the daisy (a.k.a. Asteraceae) group. They are both typically used for tea preparation. Each plant has very small (about 30 cm tall), daisy-like flowers, numerous fine, feathery leaves, and white flower petals. German chamomile grows each year and gets to about 10 to 60cm high, and its leaves don't really smell of anything. Roman chamomile, on the other hand, is a perennial which spreads along the ground, reaches 10 to 30cm and has leaves that smell sweetly of apples. [6, 10] The dried flower tops of both kinds are used for tea. Chamomile flowers contain lots of oils that evaporate (around two percent of the flower's weight), and also water-soluble phenolic substances. [11] Within the oils are sesquiterpenes - particularly alpha-bisabolol, chamazulene and farnesene, and related oxides, and chamazulene is what gives the oil its particular blue shade. [12] These active elements within chamomile are what cause its health benefits. For example, the flavonoid apigenin acts as an antioxidant and smooth muscle relaxant, and the terpene alpha-bisabolol is an anti-inflammatory compound. Chamomile caffeine, unlike other teas, is gentle and not stimulating. [2]

Benefits of chamomile for women's well-being

Menstrual cramps: Chamomile is helpful for periods, and for good reason. Apigenin, a flavonoid, is an antioxidant that calms smooth muscles, while alpha-bisabolol is a terpene with anti-inflammatory powers. [8] And chamomile's caffeine level is so low; it's a calming alternative to other teas. Chamomile contains many active ingredients that may help reduce menstrual cramp pain. [3] The flowers themselves are sources of sesquiterpenes and flavonoids especially chamazulene, alpha-bisabolol, apigenin, quercetin and luteolin and they're both anti-inflammatory and smooth muscle relaxants. These components inhibit both

cyclooxygenase and lipoxygenase, thereby reducing prostaglandin and leukotriene production in the body and aiding in the relief of uterine cramps. [13] The inhibitory effect is actually considered antispasmodic — it relaxes the uterus while also making it contract less forcefully. The inhibitory effect is considered antispasmodic — it relaxes the uterus while also reducing its contractions during cramping. In addition, chamomile provides mild analgesic relief and reduces anxiety; a warm cup of chamomile tea will relieve both the physical pain associated with menstruation as any emotional stress that accompanies period symptoms. [3] Actual clinical trials support the age-old use of chamomile for dysmenorrhea. In a rigorous experiment where neither the women nor the researchers knew what they were getting, women with cramps had less cramp pain and less bleeding with chamomile sachets than they did with mefenamic acid, a typical NSAID. [13] A more comprehensive review of many studies discovered that chamomile tea or extracts considerably reduced menstrual pain when compared to a dummy treatment. There was a smaller study done where the effects on alleviating dysmenorrhea were significantly decreased by using 100 mg capsules of chamomile extract taken 3 times daily versus the placebo. [7] There are reports of many women feeling as though a cup of chamomile tea taken daily provides similarly significant reductions in their period-related pain. Chamomile's ability to reduce inflammation, reduce muscle spasms and provide slight calming effects leads to reduced cramping and increased comfort levels while menstruating. Chamomile tea can also be considered a mild remedy for menstrual cramps, which is simple to use and is often consumed for menstrual cramps. [8, 3] Its natural ingredients and, according to studies, its efficacy as a treatment for dysmenorrhea is similar to that of standard pain medications.

Aroma therapeutic effects: Chamomile tea smells lovely, often described as fresh and sweet. [14] When you breathe in

that steam, it activates older parts of the brain, specifically the olfactory nerves and the limbic system, and this helps to calm your nerves. Aromatherapy sources have long suggested chamomile steam for anxiety and low spirits. [1] The older molecules in it seem to alter brain chemicals, boosting GABA or endorphin levels and thereby lessening stress. In fact, Germany's Commission E considers chamomile a gentle way to calm you, and more recent trials with aromatherapy confirm it lowers anxiety. [15] A few well-designed studies indicate and provide initial evidence that chamomile can improve mood. For example, hospital patients who breathed in chamomile essential oil twice each evening were much less anxious and had more stable blood pressure than a group using plain oil. [16] A small trial in which older women received aromatherapy massage with chamomile, lavender, and other oils also showed that they felt much less anxious and had more confidence. This all points to chamomiles smell really being able to lessen tension. We know scents do impact how we feel. Therefore, making the tea itself, up, watching the steam rise from your mug, and smelling that delicate scent can be calming in its own right. Women say they feel more at peace and are more supported by the routine of a warm chamomile drink and its smell. And, in women's health, these aromatherapy benefits are particularly good. Lots of women use chamomile when they are emotionally stressed, and both pregnant women and women after having a baby often drink it for anxiety and to help them sleep. [14] A simple tea break or a deep breath can also be considered strategies for relieving stress; however, further scientific inquiry is required to determine whether chamomile has any beneficial effects for women as an aromatic or therapeutic agent. Anecdotal evidence from users suggests that chamomile's gentle aroma promotes relaxation and increases overall happiness, in line with its physiological properties as an anxiolytic agent. [1, 15]

Stress and anxiety relief: Chamomile is effectively used to help people relax and reduce anxiety. The good stuff in it, especially apigenin, latches onto receptors in the brain similar to those used by benzodiazepines and alters GABA and other brain messengers - this is what makes you feel calmer. [1,8] Apigenin is often referred to as an herbal remedy for stress relief, but studies have shown that it does not just work in this way; it is also beneficial for lowering anxiety levels and the effects of stress hormones on the human body. [16] It has been found that apigenin can help reduce anxiety levels in most clinical trials performed on chamomile extract, making it highly effective for helping alleviate anxiety symptoms as well. For example, people with ongoing, widespread anxiety have been shown to feel much better when using chamomile extracts. [17] And its good news for women, too, as chamomile also eases the emotional side of PMS and the menopause. Studies show it can lessen the edginess and tension that go with PMS. Chamomile has the ability to stop muscles from cramping and induce sleep. Along with its effect on excited nerves, it can actually improve mood and reduce depression for women during their period. [8] A cup of chamomile tea may provide relief for women's everyday anxiety or stress from its active ingredient, Apigenin, which possibly affects GABA at various concentrations depending on individual doses.

Sleep issue: Chamomile tea gently encourages sleep, and for women (even those who have trouble sleeping because of the changes happening during menopause), it can actually improve their sleep. [9] Chamomile to help ease women's sleep problems. For ages, in Asia, it's been a tea to help you drift off, due to apigenin, a compound in chamomile that acts on brain messengers (GABA receptors and others) to help you relax and get to sleep more quickly.

Chamomile shows modest sleep benefits; a randomized trial in insomnia patients found that chamomile extract produced small to moderate improvements in sleep onset latency and

night time awakenings compared to placebo. Chamomile's beneficial properties are particularly notable in women with specific sleep restrictions. A trial in sleep-disturbed post-natal women demonstrated that two weeks of chamomile tea significantly enhanced physical sleep efficiency and reduced postpartum depression scores. [18] An RCT in elderly adults found that daily chamomile extract for 28 days significantly enhanced overall sleep quality. [19] This is more common for a menopausal woman as sleep disturbances and fatigue are common for them. In a hot flash treatment study, chamomile-containing extracts were more effective in solving sleep problems and fatigue than a placebo. Chamomile's gentle sedative action can help women fall asleep faster and more easily. It's just reducing and muscle relaxant properties can

further support sleep in women during menopause or PMS. [19]

Comparative analysis of Herbal Teas: Herbal teas provide various supports naturally for women's menstrual cramps, stress, and sleep issues, along with the Aroma therapeutic effects [Table 2](#). Chamomile, along with peppermint and lavender has been evaluated in this study as a means for alleviating endometriosis. Both chamomile tea is a good source of relief from menstrual cramps and also good in promoting relaxation and sleep. Peppermint tea is also good for relieving cramps and tension, but does not seem to promote sleep or relieve anxiety. Lavender excels in aromatherapy, reducing stress and enhancing sleep quality, although it's less effective for cramps.

Table: 2: Comparative analysis of Chamomile VS peppermint, Ginger, raspberry leaf, lavender, and Ashwagandha - under the properties of menstrual cramps, stress, sleep issues, and aroma therapy

Herbal Tea	Menstrual Cramps	Stress and Anxiety	Sleep Issues	Aromatherapy	References
Chamomile	Anti-spasmodic and anti-inflammatory. Clinical trials show that chamomile reduces significantly dysmenorrhea pain.	Calming effects. Trials show chamomile reduces anxiety symptoms.	Mild sedative. Pilot trials report modest improvements in sleep quality and latency with chamomile.	A calming aroma for relaxation. Chamomile aroma can reduce anxiety in women.	[3,4,7]
Peppermint	Menthol content offers antispasmodic effects. RCTs conclude that peppermint can reduce the duration and severity of menstrual cramps in women.	Generally stimulating, but no evidence for reducing anxiety.	Uplifting and alerting, but not sedating; no evidence for sleep benefit.	Invigorating scent; peppermint oil is widely used for relieving tension or headaches.	[20]
Lavender	No indication for cramps, but commonly used for relaxation.	Lavender aroma is anxiolytic; inhalation can reduce anxiety in women.	Inhaling lavender, often with peppermint, can enhance sleep quality in clinical studies.	Gold standard aromatherapy: lavender can reduce stress and anxiety.	[21,22]
Best Tea for Each Purpose	Chamomile	Lavender	Chamomile	Lavender	-

3. LIMITATIONS

Chamomile's conventional popularity also has crucial limitations, especially for women's health and aromatherapy. A prime challenge is the variability in chamomile tea potential

due to its source and preparation. The plant's chemistry varies widely with cultivation and harvest conditions [6], so one batch of flowers may be richer in flavonoids or oils than another. Processing matters - One study concluded that loose-

leaf German chamomile teas had much higher levels of active azulenes and bisabolols than typical tea bag products that often contain mixed plant material and demonstrate lower levels and less variability of pharmacologically relevant constituents. [23] Even homebrew factors tend to change the potency of chamomile: a quantitative analysis indicated that chamomile's key flavonoids and phenolics increase with longer steeping (15 min infusions yielded ~400 mg/L vs ~276 mg/L in a 5 min brew). [24] Hence, chamomile's flavor, aroma, and bioactive content can differ sharply depending on how and what is brewed, making effects hard to predict. Finally, there are no standardized guidelines for chamomile aromatherapy.

4. FUTURE DIRECTIONS

Chamomile has been used for women's health, yet high-quality trials are lacking even today. Its use in pregnancy and postpartum controls finds the evidence limited. [14] Future research should focus on women-based trials with adequate sample sizes and preparations. [8] Chamomile's anxiolytic effects can also be studied. A 2023 review found that chamomile reduced anxiety in trials, but stressed that future studies should use larger sample sizes to identify effective doses. [4] One clinical trial suggested that inhaling 10% chamomile essential oil reduced anxiety and blood pressure in patients with cardiac disease [16] and improved sleep scores in healthy adults. [25]

Understanding Chamomile's constituents will aid in 'developing a delivery system so that the natural product can be used as a therapeutic tool'. [6] Large-scale, long-term pragmatic trials of chronic chamomile use and aromatherapy are needed to monitor outcomes over months or years. [26, 27]

5. CONCLUSION

Matricaria chamomilla L., or *Chamomile*, has been used traditionally and supported by increasing research evidence as an effective treatment for women's health issues. Clinical

trials and meta-analyses published before the end of 2026 have already demonstrated moderate efficacy of chamomile in treating primary dysmenorrhea (menstrual pain), reducing symptoms of generalized anxiety disorder (GAD), and enhancing subjective sleep quality. The active inflammatory components may be related to the flavonoids and volatile oils. Although the evidence of chamomile's effectiveness is encouraging, it is limited due to the lack of large, well-designed studies; most research thus far has found mild adverse events and lacks statistical power due to a majority of research studies having small sample sizes, differing dose ranges and/or dosage forms, short durations of drug therapy, and a preponderance of reliance on patient-reported outcome measures. There is a need for further research to confirm the efficacy of chamomile and to determine optimal efficacy, dosage, and delivery methods. A definitive multi-center trial using standardized preparations of chamomile will establish a therapeutic profile of chamomile that can characterize its use as an evidence-based holistic therapy. With continued investment, research, and funding, chamomile could play a significant role in a comprehensive model combining medicine for the treatment of both stress-related and women's health problems.

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REFERENCES:

1. Srivastava JK, Shankar E, Gupta S. Chamomile: A herbal medicine of the past with a bright future. *Molecular medicine reports*. 2010 Nov 1;3(6):895-901. <https://doi.org/10.3892/mmr.2010.377>
2. Drif AI, Avula B, Khan IA, Efferth T. COX2-Inhibitory and Cytotoxic Activities of Phytoconstituents of *Matricaria chamomilla* L. *Applied Sciences*. 2023 Aug 3;13(15):8935. <https://doi.org/10.3390/app13158935>
3. Niazi A, Moradi M. The effect of chamomile on pain and menstrual bleeding in primary dysmenorrhea: A systematic review. *International journal of community based nursing and midwifery*. 2021 Jul;9(3):174. <https://doi.org/10.30476/ijcbnm.2021.87219.1417>
4. Saadatmand S, Zohroudi F, Tangestani H. The effect of oral chamomile on anxiety: a systematic review of clinical trials. *Clinical Nutrition Research*. 2024 Apr 23;13(2):139. <https://doi.org/10.7762/cnr.2024.13.2.139>
5. Eddin LB, Jha NK, Goyal SN, Agrawal YO, Subramanya SB, Bastaki SM, Ojha S. Health benefits, pharmacological effects, molecular mechanisms, and therapeutic potential of α -bisabolol. *Nutrients*. 2022 Mar 25;14(7):1370. <https://doi.org/10.3390/nu14071370>
6. Sah A, Naseef PP, Kuruniyan MS, Jain GK, Zakir F, Aggarwal G. A comprehensive study of therapeutic applications of chamomile.

Pharmaceuticals. 2022 Oct 19;15(10):1284. <https://doi.org/10.3390/ph15101284>

7. Khan SM, Farooq F, Khalid S. Medicinal properties of chamomile against dysmenorrhea. *Biomedical Journal of Scientific & Technical Research*. 2021;34(1):26384-8. <http://dx.doi.org/10.26717/BJSTR.2021.34.005490>
8. Khalesi ZB, Beiranvand SP, Bokaie M. Efficacy of chamomile in the treatment of premenstrual syndrome: a systematic review. *Journal of Pharmacopuncture*. 2019 Dec 31;22(4):204. <https://doi.org/10.3831/KPI.2019.22.028>
9. Schwartz JA, Romeiser JL, Kimura R, Senzel L, Galanakis D, Halper D, Mena S, Bennett-Guerrero E. Effect of chamomile intake on blood coagulation tests in healthy volunteers: a randomized, placebo-controlled, crossover trial. *Perioperative Medicine*. 2023 Sep 20;12(1):51. <https://doi.org/10.1186/s13741-023-00339-7>
10. Filipović V, Marković T, Dimitrijević S, Song A, Prijčić Ž, Mikić S, Čtović N, Ugrenović V. The first study on cultivating Roman chamomile (*Chamaemelum nobile* (L.) All.) for its flower and essential oil in Southeast Serbia. *Horticulturae*. 2024 Apr 12;10(4):396. <https://doi.org/10.3390/horticulturae10040396>
11. Sirotkin AV, Harrath AH. Apigenin as a promising agent for enhancing female reproductive function and treating associated disorders. *Biomedicines*. 2024 Oct 21;12(10):2405. <https://doi.org/10.3390/biomedicines12102405>
12. Lairikyengbam D, Wetterauer B, Schmiech M, Jahraus B, Kirchgessner H, Wetterauer P, Berschneider K, Beier V, Niesler B, Balta E, Samstag Y. Comparative analysis of whole plant, flower and root extracts of *Chamomilla recutita* L. and characteristic pure compounds reveals differential anti-inflammatory effects on human T cells. *Frontiers in immunology*. 2024 Apr 24; 15:1388962. <https://doi.org/10.3389/fimmu.2024.1388962>
13. Shabani F, Narenji F, Vakilian K, Zareian MA, Bozorgi M, Bioos S, Nejatbakhsh F. Comparing the effect of chamomile and mefenamic acid on primary dysmenorrhea symptoms and menstrual bleeding: a randomized clinical trial. *The Open Public Health Journal*. 2022 Aug 23;15(1). <http://dx.doi.org/10.2174/18749445-v15-e2205190>
14. Ferguson T, Gordon B. The Efficacy and Safety of Using Chamomile Products During Pregnancy and the Postpartum Period. *Cureus*. 2025 Mar 31 ; <https://doi.org/10.7759/cureus.81527>
15. Uzunçakmak T, Ayaz Alkaya S. The use of aromatherapy in women's health. *Journal of Education and Research in Nursing*. 2022 Jun 6;19(2):240-3. <https://doi.org/10.5152/jern.2022.38455>
16. Pourshaikhian M, Moghadamnia MT, Kazemnezhad Leyli E, Shafiei Kisomi Z. Effects of aromatherapy with *Matricaria chamomile* essential oil on anxiety and hemodynamic indices in patients with acute coronary syndrome, 2021: a randomized controlled trial. *BMC Complementary*

- Medicine and Therapies. 2024 Jan 3;24(1):17. <https://doi.org/10.1186/s12906-023-04326-9>
17. Keefe JR, Mao JJ, Soeller I, Li QS, Amsterdam JD. Short-term open-label chamomile (*Matricaria chamomilla* L.) therapy of moderate to severe generalized anxiety disorder. *Phytomedicine*. 2016 Dec 15;23(14):1699-705. <https://doi.org/10.1016/j.phymed.2016.10.013>
18. Chang SM, Chen CH. Effects of an intervention with drinking chamomile tea on sleep quality and depression in sleep disturbed postnatal women: a randomized controlled trial. *Journal of advanced nursing*. 2016 Feb;72(2):306-15. <https://doi.org/10.1111/jan.12836>
19. Adib-Hajbaghery M, Mousavi SN. The effects of chamomile extract on sleep quality among elderly people: A clinical trial. *Complementary therapies in medicine*. 2017 Dec 1;35:109-14. <https://doi.org/10.1016/j.ctim.2017.09.010>
20. Masoumi SZ, Asl HR, Poorolajal J, Panah MH, Olliaei SR. Evaluation of mint efficacy regarding dysmenorrhea in comparison with mefenamic acid: A double blinded randomized crossover study. *Iranian journal of nursing and midwifery research*. 2016 Jul 1;21(4):363-7. <https://doi.org/10.4103/1735-9066.185574>
21. Jones T, Purdy M, Stewart EA, Cutshall SM, Hathcock MA, Mahapatra S, et al. Lavender Aromatherapy to Reduce Anxiety During Intrauterine Insemination: A Randomized Controlled Trial. *Global Advances in Health and Medicine*. 2021 Jan; 10:216495612110590. <https://doi.org/10.1177/21649561211059074>
22. MahdaviKian S, Rezaei M, Modarresi M, Khatony A. Comparing the effect of aromatherapy with peppermint and lavender on the sleep quality of cardiac patients: A randomized controlled trial. *Sleep Science and Practice*. 2020 Jul 14;4(1). <https://doi.org/10.1186/s41606-020-00047-x>
23. Blažeković B, Job Čičin-Mašansker I, Kindl M, Mahovlić L, Vladimir-Knežević S. Chemometrically-supported quality assessment of chamomile tea. *Acta Pharmaceutica*. 2025 Sep 30;75(3):331-55. <https://doi.org/10.2478/acph-2025-0028>
24. Wyrstek J, Kowalski R, Pankiewicz U, Solarska E. Estimation of the Content of Selected Active Substances in Primary and Secondary Herbal Brews by UV-VIS and GC-MS Spectroscopic Analyses. *Journal of Analytical Methods in Chemistry*. 2020;2020(1):8891855. <https://doi.org/10.1155/2020/8891855>
25. Alvarado-García PA, Soto-Vásquez MR, Rodrigo-Villanueva EM. Chamomile (*Matricaria chamomilla* L.) essential oil and its potential against stress, anxiety, and sleep quality. <http://dx.doi.org/10.5530/pj.2024.16.14>
26. Mao JJ, Xie SX, Keefe JR, Soeller I, Li QS, Amsterdam JD. Long-term chamomile (*Matricaria chamomilla* L.) treatment for generalized anxiety disorder: A randomized clinical trial. *Phytomedicine*. 2016 Dec 15;23(14):1735-42. <https://doi.org/10.1016/j.phymed.2016.10.012>
27. Howrey BT, Peek MK, McKee JM, Raji MA, Ottenbacher KJ, Markides KS. Chamomile consumption and mortality: A prospective study of mexican origin older adults. *The Gerontologist*. 2016 Dec 1;56(6):1146-52. <https://doi.org/10.1093/geront/gnv051>