



Major scientific evidence of the increase in women's quality of life with the use of phytoestrogens: a systematic review

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DOI: <https://doi.org/10.54448/ijn25S314>

Received: 05-15-2025; Revised: 07-16-2025; Accepted: 07-25-2025; Published: 07-31-2025; IJN-id: e25S314

Editor: Dr. Mohammad Barakat Jamil Alnees, MD.

Abstract

Introduction: In the context of women's health, climacteric and menopause are intrinsically linked and can bring about several psychological and physiological changes. The use of herbal medicines is an important tool in the attempt to alleviate symptoms, improving physical and mental disposition, as well as libido.

Objective: This systematic review aims to present the main considerations and scientific evidence on the use of phytotherapeutics in climacteric and menopause to reduce symptoms and improve women's quality of life.

Methods: The systematic review rules (PRISMA) were followed. The research was carried out from September to October 2024 in the Scopus, Embase, PubMed, Science Direct, Scielo, and Google Scholar databases, covering scientific articles from various eras to the present day. The quality of the studies was based on the GRADE instrument and the risk of bias was analyzed according to the Cochrane instrument.

Results and Conclusion: A total of 121 articles were found. A total of 32 articles were fully evaluated and

23 were included in this systematic review. Most studies showed homogeneity in their results, with $X^2=97.7\%>50\%$. Considering the Cochrane tool for risk of bias, the overall assessment resulted in 30 studies with a high risk of bias and 37 studies that did not meet GRADE. An asymmetrical funnel plot does not suggest a risk of bias among small sample-size studies. In search of symptom relief and based on knowledge of the side effects of hormone replacement therapy, many women resort to alternative therapy with herbal medicines. The main results support that supplementation with soy isoflavones as a natural source of phytohormones is associated with a reduction in the frequency and intensity of hot flashes, a recurrent symptom in the climacteric. The formulated blend of four herbal extracts (*Glycine max*, *Cimicifuga racemosa*, *Vitex agnus-castus*, and *Oenothera biennis*) supports skin health and antioxidant status in women of menopausal age. Furthermore, purified pollen cytoplasm can be considered an effective non-hormonal treatment alternative for the treatment of

vasomotor symptoms, as well as mood and sleep disturbances in peri and post-menopause. Three clinical trials using the Danggui Buxue Tang herbal formula have been shown to alleviate menopausal syndrome, providing solid scientific evidence of its effectiveness.

Keywords: Climacteric. Menopause. Treatments. Herbal medicine.

Introduction

In the context of female physiology, climacteric is the phase of life in which the transition from the reproductive or fertile period to the non-reproductive period occurs due to the decrease in sex hormones, and sexuality takes priority over reproduction [1-3]. Menopause, on the other hand, is an event within the climacteric and represents the last menstrual period of a woman's life. Climacteric and menopause are intrinsically linked and can bring about various psychological and physiological changes [1,2].

In this regard, knowing that the estimated life expectancy of Brazilian women today is 72 years, indicates that women have begun to live longer, experiencing changes in their bodies that other generations did not [3,4]. Climacteric is considered a natural event, occurring due to ovarian failure and may or may not present symptoms known as climacteric syndrome [5,6]. In this sense, with increased longevity and the maintenance of menopause age, women may spend more than a third of their lives after menopause, which implies concern for treating the symptoms that accompany the period of comorbidities associated with aging, aiming for a better quality of life [7].

Although menopause, like aging itself, is a physiological event, the resulting decrease in estrogen and progesterone is associated with numerous negative repercussions on the female body [2,8]. The main problems experienced by women during menopause are menstrual irregularities, vasomotor symptoms, insomnia, mood instability, urogenital atrophy, osteoporosis, cardiovascular disease, cancer, and cognitive problems [9].

As a corollary of this, the use of medicinal plants (phytotherapeutics-herbals) is an important tool for healthcare professionals, users, researchers, and administrators, which led the Ministry of Health to create the National Policy for Integrative and Complementary Practices in the Unified Health System (SUS). Subsequently, the National Policy on Medicinal Plants and Phytotherapeutics and the National Program on Medicinal Plants and Phytotherapeutics were also

created [10]. In this context, hormone replacement therapy is highly questioned by women who use this therapeutic process, leading many of them to seek a safe alternative.

There are several alternatives to hormone replacement therapy for alleviating menopausal symptoms. The literature describes that *Cimicifuga racemosa* (L.), a new combination for *Actaea racemosa* (L.), had beneficial effects on hot flashes in menopausal women, and is one of the most studied and applied plants in these cases, as it offers a safer alternative [11,12]. Symptoms related to attitudes and behavior are subjective symptoms, such as mood swings or depression. The literature states that hot flashes and other acute symptoms associated with the perimenopause period may become more intense around menopause, when circulating estrogen levels decline rapidly [1].

Therefore, to alleviate or eliminate these symptoms, hormone replacement therapy with phytoestrogen concentrates is recommended to combat the effects of menopause, with emphasis on hormone replacement therapy through alternative and natural means [13]. The use of phytotherapy involves several healthcare professionals, guided by the National Policy on Medicinal Plants.

This study aimed to develop a systematic review to present the main considerations and scientific evidence on the use of herbal remedies in climacteric and menopause in relation to symptom reduction and improved quality of life.

Methods

Study Design

This study followed the international systematic review model, following the PRISMA (Preferred Reporting Items for systematic reviews and meta-analysis) guidelines. Available at: <http://www.prismastatement.org/?AspxAutoDetectCookieSupport=1>. Accessed on: September 27, 2024. The AMSTAR-2 (Assessing the methodological quality of systematic reviews) methodological quality standards were also followed. Available at: <https://amstar.ca/>. Accessed on: September 27, 2024.

Research Strategy and Sources

The literature search process was conducted from September to October 2024 and developed based on Scopus, Embase, PubMed, Science Direct, Scielo, and Google Scholar, covering scientific articles from various eras to the present day. The following descriptors (DeCS/MeSH Terms) were used *Women's health*, *Libido*, *Climacteric*, *Menopause*, *Phytotherapeutics*, and

the Boolean expression "and" between MeSH terms and "or" between historical discoveries was used.

Study Quality and Risk of Bias

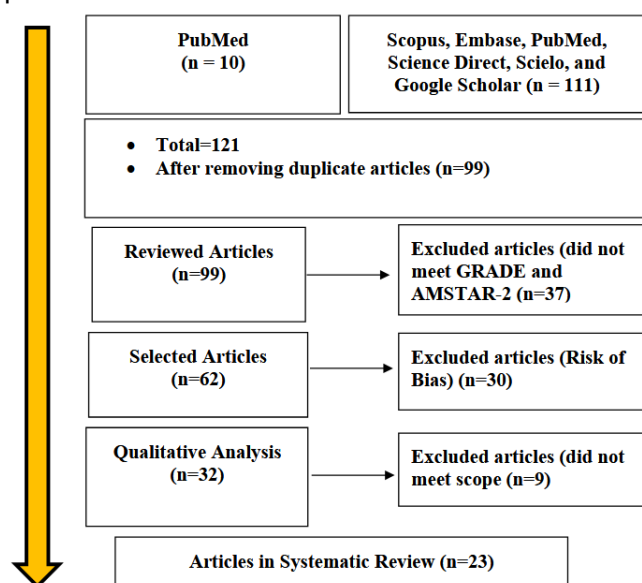
Quality was classified as high, moderate, low, or very low regarding the risk of bias, clarity of comparisons, precision, and consistency of analyses. The most prominent articles were systematic reviews or meta-analyses of randomized controlled trials, followed by randomized clinical trials. Low-quality evidence was attributed to case reports, editorials, and brief communications, according to the GRADE instrument. The risk of bias was analyzed according to the Cochrane tool by analyzing the funnel plot (sample size versus effect size) using Cohen's d test.

Results and Discussion

Summary of Findings

As a corollary to the literature search system, a total of 121 articles were found and submitted to eligibility analysis. Subsequently, 23 of the 32 final studies were selected to comprise the results of this systematic review. The selected studies were of medium to high quality (Figure 1), considering the level of scientific evidence of studies in meta-analysis, consensus, randomized clinical, prospective, and observational studies. Biases did not compromise the scientific basis of the studies. According to the GRADE rules, most studies presented homogeneity in their results, with $X^2 = 97.7\% > 50\%$. Considering the Cochrane risk of bias tool, the overall assessment resulted in 30 studies with a high risk of bias and 37 studies that did not meet GRADE.

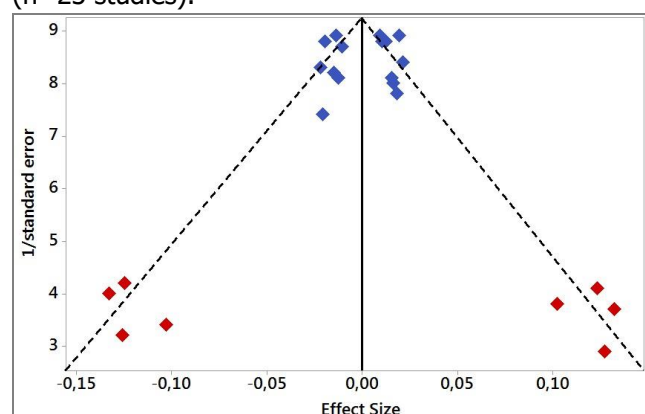
Figure 1. Flowchart showing the article selection process.



Source: Own authorship.

Figure 2 presents the results of the risk of bias of the studies using the funnel plot, showing the calculation of the effect size (magnitude of the difference) using Cohen's d test. Precision (sample size) was determined indirectly by the inverse of the standard error (1/Standard Error). This graph exhibited symmetrical behavior, suggesting no significant risk of bias, either among studies with small sample sizes (lower precision), which are shown at the bottom of the graph (studies shown in red), or among studies with large sample sizes, which are shown at the top (studies shown in blue).

Figure 2. The symmetrical funnel plot suggests no risk of bias among the small sample size studies, which are shown at the bottom of the graph (studies shown in red). High confidence and highly recommended studies are shown above the graph (studies shown in blue) (n=23 studies).



Source: Own authorship.

Major Results

The World Health Organization (WHO) considers perimenopause to end one year after menopause. Premenopause is the period beginning with the onset of climacteric symptoms, such as hot flashes or menstrual irregularities, almost always starting at age 45 [14,15]. A decrease in hormone levels occurs in all women and begins around age 40. Some women may experience more pronounced signs and symptoms, but all will eventually reach menopause. The decrease or lack of female sex hormones can affect various areas of the body and produce signs and symptoms known as climacteric syndrome [16].

During menopause, the ovaries no longer respond to pituitary stimulation, leading to hormonal changes and an increase in pituitary gonadotropins, luteinizing hormones, and follicle-stimulating hormones. Thus, there is a decrease in estrogen production by the ovary and a loss of regeneration and inhibition at the hypothalamopituitary level. As a result, the decrease in estrogen leads to metabolic changes, clinical signs, and symptoms of menopause at various levels, including

morphological, hormonal, metabolic, functional, psychological, and cognitive [17].

In this context, the most noticeable change is the spontaneous cessation of the menstrual cycle (menopause). To be considered menopausal, menstruation must have ceased for one year. Once menopause has occurred, the woman reaches the end of her reproductive period during the years preceding menopause [18]. Climacteric women, who have a balanced emotional state, strive for a better quality of life [15]. Climacteric symptoms are directly linked to estrogen deficiency, and their intensity is generally proportional to the level of this deficiency. If circulating estrogen levels decrease, as in cases of surgical removal or irradiation of the ovaries, symptoms are usually intense and almost immediate. When ovarian function declines more slowly and progressively, symptoms are milder, sometimes even imperceptible. Between these extremes, there is a broad spectrum of symptoms, which vary from woman to woman and are subject to sociocultural and psychological conditioning [2,3,7].

Sometimes, menopause goes unnoticed. The symptoms are those that characterize climacteric syndrome, including fear of aging, concern about self-image, marital instability, empty nest syndrome, and competition with the husband [19]. Furthermore, many women report psychological symptoms during menopause. Some experience anxiety and depression, but generally, a woman's personality structure and premenopause predispose her to premenopausal syndrome [20].

The skin is affected by estrogen deprivation, as well as by general age-related changes, such as being prone to bruising, dryness, hair loss, and brittle nails. Elastic fibers and collagen degenerate, sebaceous and sweat glands become less active, and blood vessels show signs of sclerosis. Hair distribution also changes, with facial hair growth increasing and pubic, axillary, and scalp hair loss decreasing, caused by the increased androgen-to-estrogen ratio. This condition is important for women's self-esteem and self-confidence; postmenopausal changes in skin and hair affect quality of life [16].

The purpose of hormone replacement therapy is to replace hormone deficiency, which can be achieved through conventional methods, using synthetic medications, or through alternative methods such as phytoestrogens. Studies have reported that women using synthetic hormones have a higher incidence of cancer cell formation. Therefore, numerous studies are being conducted on alternative therapies using foods, especially those using soy isoflavones as a natural source of phytohormones [1-3,13].

In this context, considering the pursuit of natural health maintenance, a promising area for the development of herbal therapies concerns the treatment of climacteric symptoms, given that the current protocol with hormone replacement therapy, using phytohormones, has been considered an alternative treatment for the symptoms experienced by women at this stage of life [21]. Soy, for example, is an important source of these compounds and has been associated with a reduction in the frequency and intensity of hot flashes, a recurring symptom of climacteric [22].

Thus, in recent years, phytohormones with hormone-like characteristics have emerged to replace hormone replacement therapy [23,24]. Currently, Brazilian legislation has encouraged the search for new therapeutic alternatives and even establishes a list of essential medications, such as soy, aimed at treating climacteric symptoms. Studies have shown that *Trifolium pratense* and *Cimicifuga racemosa* are already recommended by the Manual for the Care of Women in Climacteric [25]. According to Brasil (2008b) [26], the main herbal remedies used are commonly sources of phytoestrogens due to their estrogen-like action, with the most commonly used being *Glycine max*, *Trifolium pratense*, and *Cimicifuga racemosa*, although many other herbal medicine exist for this purpose.

There are also specific herbal medications for the relief of mild to moderate depression and anxiety, also used in cardiology, neurology, psychiatry, and other areas. For psycho-emotional symptoms that can accompany this phase of a woman's life, the use of St. John's wort, Valerian officinalis, and Melissa officinalis is worth highlighting [27].

Also, menopausal symptoms and gynecological disorders (such as premenstrual syndrome and dysmenorrhea) are indications in which pharmacological therapy can have serious adverse effects, so many women prefer to use herbal products to help with these symptoms. Thus, a 2021 study by Kenda et al. reviewed plants and plant-derived products as alternative treatments. The results showed that black cohosh (*Cimicifuga racemose*) and red clover (*Trifolium pretense*) demonstrated significant reduction in menopausal symptoms in clinical studies, and to a lesser extent the use of fenugreek (*Trigonella foenum-graecum*), hops (*Humulus lupulus*), valerian (*Valeriana officinalis*) and soy (*Glycine max* and *Glycine soja*) for this indication. For premenstrual syndrome and premenstrual dysphoric disorder, chaste tree (*Vitex agnus-castus*) shows efficacy, but more clinical studies are needed to confirm this effect with the use of evening primrose (*Oenothera biennis*) [28].

Skin aging is one of the most concerning issues during the postmenopausal period. Nutraceuticals containing estrogenic and antioxidant effects have gained considerable attention as alternative therapies to slow age-related skin changes in postmenopausal women. Based on this, a randomized, double-blind, placebo-controlled clinical trial was designed by Tumsutti et al. (2022) to evaluate the effects of a combination of nutraceuticals on skin health and antioxidant status in postmenopausal women. Postmenopausal women aged 45 to 60 years were enrolled and randomly allocated (n=110) equally to the treatment or placebo group (n=55 per group). The test product, a nutraceutical containing a blend of extracts from *Glycine max*, *Cimicifuga racemosa*, *Vitex agnus-castus*, and *Oenothera biennis*, was administered for 12 weeks, with dermatological parameters assessed at baseline, weeks 6, and 12. Additionally, glutathione (GSH) and malondialdehyde (MDA) levels were detected at baseline and week 12 to assess antioxidant status. At week 6, skin roughness significantly improved in the treatment group, while at week 12, significant improvements and large effect sizes were observed in skin elasticity, roughness, smoothness, scaling, and wrinkles compared to placebo. Furthermore, GSH significantly increased, while MDA significantly decreased in the test group compared to the placebo. These data indicate that supplementation with the formulated blend of four herbal extracts supports skin health and antioxidant status in menopausal women [29].

Purified pollen cytoplasm (PPC) is a herbal medicine used to manage vasomotor symptoms (VMS), sleep disturbances, and mood disorders in menopausal women not taking hormone replacement therapy (HRT). Many studies have demonstrated its efficacy and safety in postmenopause, but few data are available in perimenopause. A prospective, observational, multicenter study was conducted with symptomatic peri- and postmenopausal Italian women, evaluating the effects of PPC therapy on hot flashes and other parameters included in the Greene Climacteric Scale (GCS). One hundred and eight peri- and postmenopausal women (mean age 53.8 ± 4 years) were recruited and followed for 3 months of PPC treatment. Significant improvement in hot flashes and night sweats was found. Furthermore, all GCS items except loss of sensation in the limbs significantly improved after PPC therapy [30].

A randomized, double-blind, placebo-controlled clinical study conducted by Hyun et al. (2022) evaluated the safety of the herbal extract and red ginseng complex (RGC), which are used to alleviate menopausal symptoms. This study recruited and

divided 120 women with menopausal symptoms into RGC and placebo groups (60 women per group). Subjects received 2 g of RGC or a placebo daily for 12 weeks. Adverse reactions, female hormonal changes, and uterine thickness were observed and recorded at weeks 0, 6, and 12. The reactions of subjects who received RGC or a placebo at least once were analyzed. A total of six adverse reactions occurred in the RGC group, while nine occurred in the placebo group; common reactions observed in both groups were genital, subcutaneous tissue, and vascular disorders. However, there was no statistically significant difference between the administration groups, and no serious adverse reactions occurred in either group, confirming the safety of daily intake of 2 g of RGC for 12 weeks by menopausal women [31].

Finally, authors Wong et al. (2022) explored the efficacy and safety of Danggui Buxue Tang (DBT), a simple herbal formula, in improving the quality of life of women suffering from menopausal symptoms. A third clinical trial was conducted to determine the clinical efficacy of high-dose DBT for 12 weeks. The Menopause-Specific Quality of Life (MENQOL) assessment was used. Safety was defined as the absence of direct estrogenic effects, serum inflammatory cytokines such as interleukins IL-6, IL-8, and tumor necrosis factor (TNF- α), known to be directly related to estrogenic reactions in menopausal studies. The third clinical trial indicated an overall improvement in all four domains of MENQOL, offering further evidence of the efficacy of DBT demonstrated in the previous two trials. The random behavioral responses of the three cytokines offered indirect indications that DBT improved MENQOL independently of estrogen activities. The three clinical trials using DBT to alleviate menopausal syndrome offered solid scientific evidence of its efficacy [32].

Conclusion

The conclusion was that, in search of symptom relief and based on knowledge of the side effects of hormone replacement therapy, many women turn to alternative therapies with herbal remedies. The main results support that supplementation with soy isoflavones, a natural source of phytohormones, is associated with a reduction in the frequency and intensity of hot flashes, a recurrent symptom of menopause. The formulated blend of four herbal extracts (*Glycine max*, *Cimicifuga racemosa*, *Vitex agnus-castus*, and *Oenothera biennis*) supports skin health and antioxidant status in menopausal women. Furthermore, purified pollen cytoplasm can be considered an effective non-hormonal treatment alternative for the treatment of vasomotor symptoms,

as well as mood and sleep disorders in peri- and postmenopause. Three clinical trials using the herbal formula Danggui Buxue Tang have been shown to alleviate menopausal syndrome, providing solid scientific evidence of its efficacy.

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Author contributions: **Conceptualization**- Thaís Marina Hamdan Siquara Garcia, Amanda Gemelli, Marcela Oliveira Campos, Harley Araújo Cavalcante, Deborah Falcão Coelho Vidal, Dionísio Americo Martins Nunes, Márcia Judith Medeiros Garcia, Daniela Pires Marques, Fausto Rohnelt Durante, Roberta Miranda Soares; **Data curation**-Thaís Marina Hamdan Siquara Garcia, Amanda Gemelli, Marcela Oliveira Campos, Harley Araújo Cavalcante; **Formal Analysis**-Deborah Falcão Coelho Vidal, Dionísio Americo Martins Nunes, Márcia Judith Medeiros Garcia, Daniela Pires Marques, Fausto Rohnelt Durante, Roberta Miranda Soares; **Investigation**-Thaís Marina Hamdan Siquara Garcia, Amanda Gemelli, Marcela Oliveira Campos; **Methodology**-Harley Araújo Cavalcante, Deborah Falcão Coelho Vidal, Dionísio Americo Martins Nunes, Márcia Judith Medeiros Garcia, Daniela Pires Marques, Fausto Rohnelt Durante, Roberta Miranda Soares; **Project administration**-Thaís Marina Hamdan Siquara Garcia; **Supervision**-Thaís Marina Hamdan Siquara Garcia; **Writing - original draft**-Thaís Marina Hamdan Siquara Garcia, Amanda Gemelli, Marcela Oliveira Campos, Harley Araújo Cavalcante, Deborah Falcão Coelho Vidal, Dionísio Americo Martins Nunes, Márcia Judith Medeiros Garcia, Daniela Pires Marques, Fausto Rohnelt Durante, Roberta Miranda Soares; **Writing-review & editing**-Thaís Marina Hamdan Siquara Garcia, Amanda Gemelli, Marcela Oliveira Campos, Harley Araújo Cavalcante, Deborah Falcão Coelho Vidal, Dionísio Americo Martins Nunes, Márcia Judith Medeiros Garcia, Daniela Pires Marques, Fausto Rohnelt Durante, Roberta Miranda Soares.

Acknowledgment

Not applicable.

Ethical Approval

Not applicable.

Informed Consent

Not applicable.

Funding

Not applicable.

Data Sharing Statement

No additional data are available.

Conflict of Interest

The authors declare no conflict of interest.

Similarity Check

It was applied by Ithenticate®.

Application of Artificial Intelligence (AI)

Not applicable.

Peer Review Process

It was performed.

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References

1. Baccaro LFC, Paiva LHSDC, Nasser EJ, Valadares ALR, Silva CRD, Nahas EAP, Kulak Junior J, Rodrigues MAH, Albernaz MA, Wender MCO, Mendes MC, Dardes RCM, Strufaldi R, Bocardo RC, Pompei LM. Initial evaluation in the climacteric. *Rev Bras Ginecol Obstet.* 2022 May;44(5):548-556. doi: 10.1055/s-0042-1750282.
2. Lobo RA, Gompel A. Management of menopause: a view towards prevention. *Lancet Diabetes Endocrinol.* 2022 Jun;10(6):457-470. doi: 10.1016/S2213-8587(21)00269-2.
3. Davis SR, Baber RJ. Treating menopause - MHT and beyond. *Nat Rev Endocrinol.* 2022 Aug;18(8):490-502. doi: 10.1038/s41574-022-00685-4.
4. Alves ERP, Costa AM, Bezerra SMMS, Nakano AMS, Cavalcanti AMTS, Dias MD. Climatério: A intensidade dos sintomas e o desempenho sexual. *Texto Contexto Enferm, Florianópolis, 2015; Jan-Mar; 24(1): 64-71.*
5. Silva AR, Ferreira, TF, Tanaka ACA. História ginecológica e sintomatologia climatérica de mulheres pertencentes a uma unidade de saúde pública do Estado do Acre. *Journal of Human Growth and Development, 2010; 20(3): 778-786.*
6. Zanette VC, Rossato AE, Citadini-Zanette V, Bernardi FBC. Prevalência do uso de fitoterapia para alívio de sintomas apresentados em pacientes climatéricas. *Arquivos Catarinenses de*

- Medicina, 2011; 40(1): 12-17.
7. Valença CN, Nascimento Filho JM, Germano RM. Mulher no Climatério: Reflexões sobre Desejo Sexual, Beleza e Feminilidade. *Revista Saúde e Sociedade*, 2010; 19(2):273-85.
 8. Sogimig. Manual de Ginecologia e Obstetrícia. 5. ed. Belo Horizonte: Coopmed; 2012.
 9. Silva MIG, Gondim APSG, Nunes IFS, Sousa FCF. Utilização de fitoterápicos nas unidades básicas de atenção à saúde da família no município de Maracanaú (CE). *Revista Brasileira de Farmacognosia*, 2006; Out./Dez; 16(4): 455-462.
 10. Brasil. Ministério da Saúde. Secretaria de Ciência, Tecnologia e Insumos Estratégicos. Departamento de Assistência Farmacêutica e Insumos Estratégicos. Programa nacional de plantas medicinais e fitoterápicos. Brasília, 2009. 135 p., il. (Série C. Projetos, Programas e Relatórios).
 11. Radowicki S. et al. Skuteczność i bezpieczeństwo stosowania suchego wyciągu z kłącza *Cimicifuga racemosa* w leczeniu objawów zespołu menopauzalnego. *Ginekologia Polska*, 2006; 77(9):678-83.
 12. Silva AG, Brandao AB, Cacciari RS, Soares WH. Avanços na elucidação dos mecanismos de ação de *Cimicifuga racemosa* (L.) Nutt. nos sintomas do climatério. *Rev. Bras. Plantas med.*, 2009; 11(4).
 13. Carvalho MAPF, Costa JFO. Derivados Vegetais Similares a Estrógenos (Dvse) no Tratamento dos Sintomas do Climatério. *Revista Fitos*, 2013; 6(1).
 14. Oliveira LAR, Machado RD, Rodrigues AJL. Levantamento sobre o uso de plantas medicinais com a terapêutica anticancer por pacientes da Unidade Oncológica de Anápolis. *Rev. Bras. PI. Med.*, Campinas, 2014; 16(1): 32-40.
 15. Halbe HW et al. Tratamento de reposição hormonal no climatério e na pós-menopausa In: Carvalho Filho, ET, Papaléo Netto M. *Geriatrics: Fundamentos, clínica e terapêutica*. 2. ed. São Paulo: Athneu; 2006, p. 415.
 16. Freitas ER, Barbosa AJG. Qualidade de vida e bem-estar psicológico no climatério. *Arq. Bras. Psicol.*, 2015; 67(3).
 17. Filho, JFL, Baccaro LFC, Fernandes T, Conde DM, Paiva LC, Neto AMP. Epidemiologia da menopausa e dos sintomas climatéricos em mulheres de uma região metropolitana no sudeste do Brasil: inquérito populacional domiciliar. *Rev. Bras. Ginecol. Obstet.*, 2015; 37(4): 152-8.
 18. Santos, ÁAS, Silva FV, Martins FL. Percepção das mulheres no município de Paulo Afonso, na Bahia, sobre as mudanças corporais e emocionais no período do climatério. *Estação Científica UNIFAP, Macapá*, 2016; Jan./Abr. 6(1); 91-104.
 19. Poli MEH, Schwanke CHA, Cruz IBM. A menopausa na visão gerontológica. *Scientia Médica*, 2010; 20(2):176-184.
 20. De Lorenzi, DRS, Catan LB, Moreira K, Ártico GR. Assistência à mulher climatérica: novos paradigmas. *Revista Brasileira de Enfermagem*, 2009; 62(2):287-293.
 21. Martins, MAD, Nahas EAP, Nahas-Neto J, Uemura G, Buttros DAB, Traidman P. Qualidade de vida em mulheres na pós-menopausa, usuárias e não usuárias de terapia hormonal. *Revista Brasileira de Ginecologia e Obstetrícia*, 2009; 31(4): 196-202.
 22. Anjo, MRAS. Menopausa em Revista: discursos praticados pela revista *Maria* em torno da menopausa. 2010. 224 f. Dissertação – Universidade Aberta de Lisboa, Lisboa, 2010.
 23. Livinalli A, Lopes LC. Avaliação das prescrições de isoflavonas para mulheres no climatério em cidade de médio porte do estado de São Paulo. *Revista de Ciências Farmacêuticas Básica e Aplicada*, 2007; 28: 185-191.
 24. Sá, IM. "Fito-hormônios": ciência e natureza no tratamento do climatério. *Physis*, 2012; 22(4).
 25. Brasil. Ministério da Saúde. Anais da Conferência Nacional de Saúde, n. 8. Brasília: Ministério da Saúde; 1987.
 26. Brasil, Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Atenção Básica. Práticas Integrativas e Complementares em saúde: uma realidade no SUS. *Revista Brasileira Saúde da Família*, Brasília, v. 9, n. especial, p. 70-76, maio, 2008a.
 27. Brasil. Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Ações Programáticas Estratégicas. Manual de Atenção à Mulher no Climatério/Menopausa. Brasília: Ministério da Saúde, 2008b.
 28. Kenda M, Glavač NK, Nagy M, Sollner Dolenc M, On Behalf Of The Oeconom. *Herbal Products Used in Menopause and for Gynecological Disorders*. *Molecules*. 2021 Dec 8;26(24):7421. doi: 10.3390/molecules26247421.
 29. Tumsutti P, Maiprasert M, Sugkraroek P, Wanitphakdeedecha R, Bumrungpert A. Effects of a combination of botanical actives on skin health and antioxidant status in post-menopausal women: A randomized, double-

blind, placebocontrolled clinical trial. J Cosmet Dermatol. 2022 May;21(5):2064-2072. doi: 10.1111/jocd.14345.

30. [Lello S, Capozzi A, Xholli A, Cagnacci A; Italian Society of Menopause (SIM) and Italian Society of Gynecology of the Third Age of Women (SIGiTE), and of Writing Group of the Pollen Extract in Menopause Italian Study Group. The benefits of purified cytoplasm of pollen in reducing menopausal symptoms in peri- and post-menopause: an Italian multicentre prospective observational study. Minerva Obstet Gynecol. 2021 Nov 26. doi: 10.23736/S2724-606X.21.04964-2.
31. Hyun SH, Han CK, So SH, Park SK, Park CK, In G, Lee JY. Safety of red ginseng and herb extract complex (RHC) in menopausal women: A randomized, doubleblind, placebo-controlled trial. J Ginseng Res. 2022 Jul;46(4):601-608. doi: 10.1016/j.jgr.2021.11.008.
32. Wong ELY, Cheung AWL, Haines CJ, Wang CC, Wong CK, Tsim KWK, Cheng WKF, Leung PC. The Efficacy of Herbal Supplement *Danggui Buxue Tang* for Relieving Menopausal Symptoms. J Menopausal Med. 2022 Apr;28(1):33-39. doi: 10.6118/jmm.21024.