


The Role of Medicinal Plants in Relieving Menopausal Symptoms: A Traditional Iranian Medicine Perspective

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Article Info	ABSTRACT
<p>Article type: Review Article</p> <p>Article History: Received: Sep 14, 2025 Revised: Jan 13, 2026 Accepted: Jan 13, 2026 Published Online: Apr 20, 2026</p> <p> Correspondence to: Susan Soufizadeh Balaneji</p> <p>Email: suzan_ph@yahoo.com</p>	<p>Objective: Menopause represents a significant endocrinological transition characterized by declining estrogen levels, leading to vasomotor symptoms (e.g., hot flashes and night sweats), sleep disturbances, and affective changes. Given the growing interest in non-hormonal management strategies, complementary therapies, particularly the use of medicinal plants, have received increasing attention.</p> <p>Methods: This study systematically reviews and identifies the evidence regarding medicinal plants employed in Traditional Iranian Medicine (TIM) for the management of menopausal symptoms. This review involved a structured examination of authoritative TIM texts, alongside pharmacognosy references and established scientific databases. Inclusion criteria mandated explicit mention of plants in traditional sources as remedies for menopause-related symptoms, excluding those cited in non-authoritative references or lacking direct symptomatic relevance.</p> <p>Results: Analysis of the literature identified several key medicinal plants traditionally utilized for this purpose, most notably: <i>Foeniculum vulgare</i>, <i>Trifolium pratense</i>, <i>Vitex agnus-castus</i>, <i>Glycyrrhiza glabra</i>, <i>Salvia officinalis</i>, and <i>Matricaria chamomilla</i>.</p> <p>Conclusion: Traditional reports primarily attribute therapeutic effects to these plants, including hormonal modulation, alleviation of vasomotor symptoms, improvement in sleep quality, and anxiolytic or sedative properties. The evidence from Traditional Iranian Medicine suggests considerable potential for specific medicinal plants in alleviating menopausal distress. However, rigorous clinical efficacy and safety trials are essential to validate these traditional claims, establish optimal therapeutic dosages, and evaluate potential drug-herb interactions. When supported by scientific evidence, these plants could be integrated as valuable adjunctive interventions to enhance the quality of life for women navigating the menopausal transition.</p> <p>Keywords: Menopause, Women, Medicinal Plants, Traditional Iranian Medicine, Phytoestrogens, Menopausal Symptoms</p>
<p>➤ How to cite this paper Kamkari S, Soufizadeh Balaneji S. The Role of Medicinal Plants in Relieving Menopausal Symptoms: A Traditional Iranian Medicine Perspective. <i>Plant Biotechnology Persa</i>. 2026; 8(2): 29-39.</p>	

Introduction

Menopause is a natural and inevitable physiological transition, typically occurring between the ages of 45 and 55, characterized by the permanent cessation of menstrual cycles and a progressive decline in ovarian function [1]. This period marks a profound reduction in the production of estrogen and progesterone, giving rise to a constellation of vasomotor, physical, and psychological manifestations,

including hot flashes, night sweats, sleep disturbances, vaginal atrophy, mood fluctuations, and decreased libido [2]. Furthermore, menopause is associated with an increased long-term risk of conditions such as osteoporosis, cardiovascular disease, metabolic disorders, and alterations in skin integrity [3,4].

The pathophysiology underlying these changes is primarily linked to the exhaustion of follicular reserves and subsequent dysregulation of the hypothalamic–pituitary–ovarian axis [5]. This hormonal shift results in elevated levels of follicle-stimulating hormone (FSH) and luteinizing hormone (LH) [6], accompanied by a marked decline in estrogen, which collectively drives the common menopausal symptoms [7,8].

In conventional medicine, hormone replacement therapy (HRT) remains the most effective intervention for controlling severe vasomotor symptoms, alleviating urogenital atrophy, and preventing osteoporosis [9]. However, enduring concerns regarding potential adverse effects such as an increased risk of breast cancer and thromboembolic events have prompted many women to seek non-hormonal alternatives [10]. Pharmacological options, including selective serotonin reuptake inhibitors (SSRIs), serotonin–norepinephrine reuptake inhibitors (SNRIs), gabapentin, and anti-osteoporotic agents (e.g., bisphosphonates and selective estrogen receptor modulators (SERMs), have been explored for symptom management [11]. Despite these options, a significant need for safe, low-risk, and accessible therapeutic approaches persists.

Traditional Iranian Medicine (TIM) approaches menopause as a natural physiological phenomenon, emphasizing management through principles of temperament regulation and the application of natural resources, particularly medicinal plants [12]. Plants utilized in this context contain various bioactive compounds, including flavonoids, saponins, and lignans, which are posited to exert phytoestrogenic, antioxidant, and sedative effects, thereby modulating hormonal and neural pathways [13]. Historically, TIM has employed numerous botanicals such as *Valeriana officinalis*, *Achillea millefolium*, *Matricaria chamomilla*, *Crocus sativus*, *Cimicifuga racemosa*, and *Glycyrrhiza glabra* to reduce hot flashes, improve sleep, regulate mood, and support bone health. These traditional remedies are generally regarded as having a more favorable risk profile compared with conventional hormone-based treatments [14].

This review aims to identify and evaluate medicinal plants employed in Traditional Iranian Medicine for the management of menopausal symptoms, and to compare traditional evidence with contemporary scientific findings, with the goal of providing safe and effective therapeutic options for women undergoing the menopausal transition.

Methods

This study presents a systematic review of medicinal plants employed in TIM for the management of menopausal symptoms. The review process was designed in accordance with PRISMA guidelines and comprised three main stages: identification of sources, screening and selection, and data extraction and analysis.

Information Sources and Search Strategy
To identify plants traditionally used in TIM, classical texts including *Canon of Medicine*, *Al-Hawi*, *Zakhireh Khwarazmshahi*, *Tohfah al-Hakim Mo'men*, and *Makhzan al-Adwiah* as well as authoritative pharmacognosy references were systematically consulted [15-22].

Subsequently, a comprehensive search of electronic databases including PubMed, Scopus, Web of Science, and Google Scholar was conducted to identify recent studies and scientific evidence regarding the effects of medicinal plants on menopausal symptoms. The search strategy employed a combination of keywords, including “Menopause,” “Climacteric,” “Herbal Medicine,” “Phytotherapy,” “Iranian Traditional Medicine,” “Medicinal Plants,” “Hot Flashes,” and “Phytoestrogen.” Searches were performed without date restrictions, and both Persian and English sources were considered.

Inclusion Criteria

Sources were included if they met the following criteria

- Explicit reference to the use of medicinal plants for alleviating menopausal symptoms or promoting the health of menopausal women;
- Provision of information on bioactive compounds, therapeutic functions, mechanisms of action, or traditional methods of use;
- Publication as authoritative library resources, research articles, reviews, or other scientifically relevant documents;
- Availability in Persian or English.

Exclusion Criteria

Sources were excluded if they

- Lacked direct relevance to menopause or included only general, unsupported mentions in traditional medicine;
- Provided insufficient information on therapeutic properties or bioactive constituents;

Represented duplicates, low-quality studies, or lacked reliable historical or scientific evidence;

Cited plants solely for general or unrelated treatments.

Data Extraction and Analysis

Data from eligible sources were systematically extracted, including

Scientific and common names of the plants;

Plant parts used and methods of administration;

Bioactive compounds and potential mechanisms of action;

Traditional evidence and modern research findings regarding the effects of plants on menopausal symptoms.

Extracted data were organized into tables, and a descriptive analysis was conducted to examine patterns of use, scientific support, and reported mechanisms. This structured approach enabled a comprehensive overview of the role of medicinal plants in managing menopausal symptoms within TIM and facilitated the identification of gaps for future experimental and clinical research.

Results

Comprehensive details on these medicinal plants, including their traditional applications and therapeutic indications for alleviating menopausal symptoms, are presented in Table 1.

Table 1: Medicinal Plants Traditionally Used in Iranian Medicine for Managing Menopausal Symptoms

Plant Family	Common Name	Scientific Name	Plant Part Used	Traditional Use
Apiaceae	Fennel	<i>Foeniculum vulgare</i>	Seed, leaf	Infusion, decoction
Asteraceae	Chamomile	<i>Matricaria chamomilla</i>	Flower	Infusion, herbal tea
	Greater burdock	<i>Arctium lappa</i>	Root, leaf	Root decoction, leaf infusion
	Milk thistle	<i>Silybum marianum</i>	Seed, leaf	Seed decoction, extract
	Yarrow	<i>Achillea millefolium</i>	Flower, leaf	Infusion, tincture
Boraginaceae	Borage	<i>Borago officinalis</i>	Flower, leaf	Infusion, herbal tea
Brassicaceae	Descurainia	<i>Descurainia sophia</i>	Seed	Seed decoction, mixed with syrup
	Garden cress	<i>Lepidium sativum</i>	Seed, leaf	Seed powder, leaf infusion
Cannabaceae	Hops	<i>Humulus lupulus</i>	Cone	Infusion, tincture
Caprifoliaceae	Valerian	<i>Valeriana officinalis</i>	Root	Root infusion, tincture

Fabaceae	Alfalfa	<i>Medicago sativa</i>	Leaf, flower	Infusion, fresh consumption
	Fenugreek	<i>Trigonella foenum-graecum</i>	Seed	Seed decoction, powdered
	Licorice	<i>Glycyrrhiza glabra</i>	Root	Root decoction, extract
	Red clover	<i>Trifolium pratense</i>	Flower	Flower infusion
	Soy	<i>Glycine max</i>	Seed	Decoction, soy milk
Iridaceae	Saffron	<i>Crocus sativus</i>	Stigma	Infusion, culinary additive
Lauraceae	Cinnamon	<i>Cinnamomum verum</i>	Bark	Bark decoction, culinary spice
Lamiaceae	Holy basil	<i>Ocimum sanctum</i>	Leaf	Infusion, herbal tea
	Lavender	<i>Lavandula angustifolia</i>	Flower	Infusion, aromatherapy
	Lemon balm	<i>Melissa officinalis</i>	Leaf	Infusion, herbal tea
	Mint	<i>Mentha</i> spp.	Leaf	Infusion, tea additive
	Peppermint	<i>Mentha piperita</i>	Leaf	Infusion, culinary essence
	Sage	<i>Salvia officinalis</i>	Leaf	Infusion, tincture
	Chaste tree	<i>Vitex agnus-castus</i>	Fruit	Fruit decoction, tincture
	Wild thyme	<i>Thymus serpyllum</i>	Leaf, flower	Infusion, herbal tea
Malvaceae	Marshmallow	<i>Althaea officinalis</i>	Root, flower	Infusion, root decoction
Moraceae	Fig	<i>Ficus carica</i>	Fruit	Fresh consumption, decoction
	Mulberry	<i>Morus alba</i>	Leaf, fruit	Leaf infusion, fruit consumption
Ranunculaceae	Black cohosh	<i>Actaea racemosa</i>	Root	Root infusion, extract

Rhamnaceae	Jujube	<i>Ziziphus jujuba</i>	Fruit	Fresh consumption, decoction
Rutaceae	Zanthoxylum	<i>Zanthoxylum bungeanum</i>	Fruit	Fruit decoction, culinary spice
Theaceae	Green tea	<i>Camellia sinensis</i>	Leaf	Infusion, daily tea
Violaceae	Violet	<i>Viola odorata</i>	Flower, leaf	Infusion, tincture
Zingiberaceae	Ginger	<i>Zingiber officinale</i>	Root	Decoction, culinary spice
Onagraceae	Evening primrose	<i>Oenothera biennis</i>	Seed, flower	Infusion, extracted oil
Berberidaceae	Barberry	<i>Berberis vulgaris</i>	Fruit, root bark	Decoction, syrup

Traditional Effects and Applications of Medicinal Plants in Women's Health

This section summarizes the traditional uses and reported effects of the medicinal plants listed above, with a focus on

their applications in women's health. Emphasis is placed on their roles in alleviating menopausal symptoms such as hot flashes, sleep disturbances, mood fluctuations, and hormonal imbalances as well as in supporting overall female well-being, including reproductive and bone health.

Table 2: Indigenous Iranian Medicinal Plants with Traditional Effects on Women's Health

Scientific Name	Traditional Effects and Women's Health Applications	Ref.
<i>Matricaria chamomilla</i>	Sedative, anti-inflammatory; alleviates anxiety and menstrual pain	[23]
<i>Achillea millefolium</i>	Anti-inflammatory, diuretic; regulates menstrual bleeding	[24]
<i>Valeriana officinalis</i>	Sedative, hypnotic; reduces anxiety and insomnia	[25]
<i>Lavandula angustifolia</i>	Sedative, antiseptic; reduces anxiety and hot flashes	[26]
<i>Melissa officinalis</i>	Sedative, anxiolytic; improves mood and sleep	[27]
<i>Berberis vulgaris</i>	Liver and digestive tonic, anti-inflammatory; regulates menstrual cycle	[28]
<i>Borago officinalis</i>	Anti-inflammatory, sedative; reduces menstrual pain and fatigue	[29]
<i>Descurainia sophia</i>	Laxative, anti-inflammatory; reduces swelling and fluid retention	[30]
<i>Trigonella foenum-graecum</i>	Tonic, promotes lactation; alleviates hot flashes	[31]

<i>Lepidium sativum</i>	Tonic, digestive aid; improves menstrual bleeding and anemia	[32]
<i>Crocus sativus</i>	Sedative, mood enhancer; reduces anxiety and depression	[33]
<i>Salvia officinalis</i>	Antiseptic, memory enhancer; reduces night sweats and hot flashes	[34]
<i>Actaea racemosa</i>	Hormone regulator, sedative; alleviates hot flashes and menopausal symptoms	[35]
<i>Vitex agnus-castus</i>	Hormone regulator, anti-inflammatory; reduces PMS and premenstrual pain	[36]
<i>Oenothera biennis</i>	Anti-inflammatory, skin tonic; reduces breast pain and inflammation	[37]

The potential mechanisms of medicinal plants in menopause are presented in Table 3.

Table 3: Medicinal Plants and Their Mechanisms of Action in Alleviating Menopausal Symptoms

Scientific Name	Mechanism in Menopause
<i>Foeniculum vulgare</i>	Exhibits phytoestrogenic activity; alleviates hot flashes and mood swings
<i>Matricaria chamomilla</i>	Mild sedative and anti-inflammatory; improves sleep quality and reduces anxiety
<i>Arctium lappa</i>	Antioxidant; supports liver function and may alleviate fatigue and hormonal imbalance
<i>Silybum marianum</i>	Hepatoprotective; supports estrogen metabolism and reduces menopausal symptoms
<i>Achillea millefolium</i>	Mild estrogenic and anti-inflammatory effects; reduces vasomotor symptoms
<i>Borago officinalis</i>	Source of gamma-linolenic acid; may reduce hot flashes and improve mood
<i>Descurainia sophia</i>	Potential phytoestrogenic effects; alleviates mild vasomotor symptoms
<i>Lepidium sativum</i>	Antioxidant with mild hormonal modulatory effects
<i>Humulus lupulus</i>	Contains 8-prenylnaringenin, a potent phytoestrogen; reduces hot flashes
<i>Valeriana officinalis</i>	Sedative; improves sleep disturbances and reduces anxiety
<i>Medicago sativa</i>	Isoflavone-rich; exhibits phytoestrogenic activity and relieves vasomotor symptoms
<i>Trigonella foenum-graecum</i>	Phytoestrogenic; improves sexual function and reduces hot flashes
<i>Glycyrrhiza glabra</i>	Mild estrogenic effect; supports mood and reduces hot flashes
<i>Trifolium pratense</i>	Isoflavones; alleviates vasomotor symptoms and supports bone health

<i>Glycine max</i>	Isoflavones; reduces hot flashes and improves bone density
<i>Crocus sativus</i>	Mood-enhancing; mild antidepressant; improves sleep and reduces hot flashes
<i>Cinnamomum verum</i>	Antioxidant and metabolic support; alleviates metabolic disturbances
<i>Ocimum sanctum</i>	Adaptogenic; reduces stress and improves mood
<i>Lavandula angustifolia</i>	Anxiolytic and sedative; improves sleep and stress-related symptoms
<i>Melissa officinalis</i>	Mild sedative; enhances sleep quality and mood
<i>Mentha spp.</i>	Mild digestive and calming effects; may reduce headaches and fatigue
<i>Mentha × piperita</i>	Soothing; provides minor relief of hot flashes and digestive discomfort
<i>Salvia officinalis</i>	Estrogenic and antioxidant; reduces hot flashes and excessive sweating
<i>Vitex agnus-castus</i>	Modulates prolactin; supports mood stabilization and regulates menstrual irregularities
<i>Thymus serpyllum</i>	Mild phytoestrogenic and antioxidant effects
<i>Althaea officinalis</i>	Soothing and mildly anti-inflammatory; supports urinary and vaginal comfort
<i>Ficus carica</i>	Phytoestrogenic; may reduce vasomotor symptoms
<i>Morus alba</i>	Isoflavone content; supports bone and cardiovascular health
<i>Actaea racemosa</i>	Modulates serotonergic pathways; reduces hot flashes and mood disturbances
<i>Ziziphus jujuba</i>	Sedative and antioxidant; improves sleep quality and reduces anxiety
<i>Zanthoxylum bungeanum</i>	Mild phytoestrogenic and antioxidant properties
<i>Camellia sinensis</i>	Antioxidant and metabolic support; alleviates weight gain and mood disturbances
<i>Viola odorata</i>	Mild sedative and anti-inflammatory; improves sleep and reduces stress
<i>Zingiber officinale</i>	Anti-inflammatory; alleviates hot flashes and joint pain
<i>Oenothera biennis</i>	Rich in gamma-linolenic acid; reduces breast tenderness and vasomotor symptoms
<i>Berberis vulgaris</i>	Antioxidant; may improve mood and metabolic function

Discussion

The findings of this review collectively indicate that medicinal plants hold considerable therapeutic potential in managing the symptomatology associated with menopause. However, the observed efficacy is highly dependent on critical variables, including the specific plant species, dosage, and pharmaceutical formulation employed. Clinical evidence, for instance, strongly suggests that *Foeniculum vulgare* can significantly improve the physical, psychological, and genitourinary dimensions of menopausal syndrome. This efficacy is particularly evident when standardized extracts are administered at clinically adequate or higher dosages [38,39]. These observations emphatically underscore the necessity of extract standardization and dose optimization to ensure reliable and reproducible clinical outcomes.

Other clinical studies have reported beneficial effects of *Silybum marianum* and *Humulus lupulus* in reducing the frequency and severity of hot flashes and enhancing quality-of-life indicators [40,41]. Certain natural compounds, such as isoflavones, valerian, vitamin E, and ashwagandha, may contribute to improved sleep quality, although heterogeneity among studies and methodological limitations preclude definitive conclusions [42].

Preclinical evidence from animal models demonstrates that phytoestrogenic extracts from alfalfa, sage, fenugreek, and fig can modulate hormonal and histological changes in the ovaries and uterus, mitigating metabolic and inflammatory disturbances associated with menopause [43-46]. These findings suggest that, in addition to managing vasomotor symptoms, medicinal plants may exert beneficial effects on bone health, ovarian function, and metabolism. However, some plants, such as *Trifolium pratense*, do not show significant effects on hot flashes, and there is insufficient data on their long-term impact on breast and uterine tissues. The presence of active compounds such as coumarins in certain species also highlights the need for safety assessments and coagulation studies in future research [46].

Phytoestrogens, including soy isoflavones and *Crocus sativus*, may modulate mood and metabolic complications associated with menopause, though further clinical investigation is warranted [33,46]. Combination herbal formulations including tribulus, ginger, saffron, and cinnamon, or lavender extracts have demonstrated synergistic effects in reducing somatic symptoms and improving sexual function [47-49]. Nevertheless, certain combinations, such as fennel, sage, and black cumin, did not show similar sexual health benefits, emphasizing the

importance of careful formulation design and evaluation of component interactions [50].

Systematic reviews and meta-analyses have confirmed the positive effects of sage and *Vitex agnus-castus* in reducing the frequency of hot flashes and other menopausal symptoms, although additional research is needed to assess long-term outcomes and effect magnitude [51,52]. Preclinical studies further indicate that fig and astragalus may enhance bone health and hormonal function by increasing estradiol and progesterone levels and reducing granulosa cell apoptosis [53-55].

Traditional plants such as *Actaea racemosa*, *Glycyrrhiza glabra*, *Ziziphus jujuba*, and *Viola odorata* have demonstrated sedative, antidepressant, and vaginal tissue-enhancing properties, suggesting therapeutic potential in managing psycho-physical symptoms and vaginal atrophy [56-58]. Overall, current evidence suggests that medicinal plants particularly those containing phytoestrogens and possessing anti-inflammatory and hormone-modulating properties may significantly improve the quality of life of menopausal women [59].

Nonetheless, study heterogeneity, variations in dosage and duration, diverse phytochemical compositions, and methodological limitations underscore the need for large-scale, randomized clinical trials with precise dose control and long-term follow-up. Such studies are essential for standardizing the use of medicinal plants and providing evidence-based, safe, and effective clinical recommendations.

Conclusion

A review of historical and contemporary evidence indicates that traditional Iranian medicinal plants, particularly those rich in phytoestrogenic and anti-inflammatory compounds, possess substantial potential to alleviate menopausal symptoms and enhance quality of life. Plants such as fennel, milk thistle, hops, fenugreek, and sage have demonstrated positive effects on hot flashes, sleep disturbances, mood fluctuations, and bone health. While some phytochemicals require further investigation, their long-term safety and efficacy should be evaluated through standardized clinical trials. Preclinical findings also suggest beneficial effects on ovarian and uterine health as well as metabolic function. Future research should focus on safety, efficacy, optimal dosing, and long-term outcomes to develop evidence-based clinical strategies for the management of menopausal symptoms.

Conflict of Interest

The authors have nothing to disclose.

Acknowledgments

The authors would like to express their gratitude to the clinical research development unit of Imam Khomeini Hospital, Urmia University of Medical Sciences, for English editing.

References

- Greendale GA, Lee NP, Arriola ER. The menopause. *Lancet*. 1999 Feb 13;353(9152):571-80.
- Salehi, A. M., Shahbazi, F., Garavand, R., Kamkari, S., & Jenabi, E. (2025). Global socioeconomic inequalities in breast, cervical, ovarian, and uterine cancers incidence, mortality, disability-adjusted life year's rates: a relative concentration index analysis. *BMC Women's Health*, 25(1), 433. doi: 10.1186/s12905-025-03961-3.
- Roberts H, Hickey M. Managing the menopause: An update. *Maturitas*. 2016 Apr 1;86:53-8.
- Burger HG, Dudley EC, Robertson DM, Dennerstein L. Hormonal changes in the menopause transition. *Recent Prog Horm Res*. 2002 Jan 1;57:257-76. doi: 10.1210/rp.57.1.257.
- Ashrafi, M., Farazmand, B., Soufizadeh Balaneji, S. and Dadkhah, M. (2023). Effects of aromatase inhibitors with human gonadotropin on polycystic ovary syndrome resistant to clomiphene: a randomized clinical trial. (e708117). *Journal of Obstetrics, Gynecology and Cancer Research*, (), e708117 https://www.jogcr.com/article_708117.html
- Karami, M., Amestejani, M., Zangouri V., et al. (2025). The effectiveness of local steroid injection for the treatment of breast-limited idiopathic granulomatous mastitis: A randomized controlled clinical trial study. *Pol Przegl Chir*, 97(4), 35-43. <https://doi.org/10.5604/01.3001.0055.0956>.
- Lobo RA, Kelsey J, Marcus R, editors. *Menopause: biology and pathobiology*. San Diego: Academic Press; 2000 May 22.
- Stefanska A, Bergmann K, Sypniewska G. Metabolic syndrome and menopause: pathophysiology, clinical and diagnostic significance. *Adv Clin Chem*. 2015 Jan 1;72:1-75.
- Fait T. Menopause hormone therapy: latest developments and clinical practice. *Drugs Context*. 2019 Jan 2;8:212551. doi: 10.7573/dic.212551.
- Palacios S, Mejias A. An update on drugs for the treatment of menopausal symptoms. *Expert Opin Pharmacother*. 2015 Nov 2;16(16):2437-47.
- Al-Azzawi F. The menopause and its treatment in perspective. *Postgrad Med J*. 2001 May;77(907):292-304.
- Scheid V. Traditional Chinese medicine—What are we investigating?: The case of menopause. *Complement Ther Med*. 2007 Mar 1;15(1):54-68. doi: 10.1016/j.ctim.2005.12.002.
- Shirwaikar A, Khan S, Kamariya YH, Patel BD, Gajera FP. Medicinal plants for the management of post menopausal osteoporosis: A review. *Open Bone J*. 2010;2(1):1-3.
- Kargozar R, Azizi H, Salari R. A review of effective herbal medicines in controlling menopausal symptoms. *Electron Physician*. 2017 Nov 25;9(11):5826-36. doi: 10.19082/5826
- Avicenna. *The Book of Healing (Al-Shifa)*. Tehran: Iranian Academy of Medical Sciences; 2001.
- Avicenna. *The Canon of Medicine (Al-Qanun fi al-Tibb)*. Beirut: Dar al-Kutub al-'Ilmiyya; 2005.
- Rhazes (Al-Razi). *Summary of Wisdom (Kholasat al-Hekmah)*. Tehran: Institute of Iranian Studies; 2002.
- Habibi H. *Traditional Iranian Medicine*. Tehran: Tehran University Press; 2010.
- Jorjani S. *Mafatih al-Hayat*. Tehran: Institute for Islamic Studies; 2005.
- Mirza Ali Akbar Esfahani. *Tuhfat al-Hakim*. Tehran: Iranian Traditional Medicine Research Center; 2008.
- Ibn Qayyim al-Jawziyyah. *Al-Tibb al-Nabawi*. Beirut: Dar al-Kutub al-'Ilmiyya; 2004.
- Aghili Khorasani M. *Makhzan al-Adwiya*. Tehran: Iranian Traditional Medicine Research Center; 2007.
- Miraj S, Alesaeidi S. A systematic review study of therapeutic effects of *Matricaria recuitta chamomile* (chamomile). *Electron Physician*. 2016 Sep 20;8(9):3024-33.
- Jangjoo M, Joshaghani A, Tahernejadgatabi F. The role of *Achillea millefolium* in traditional medicine: A review of its use in different cultures. *J Multidiscip Care*. 2023 Sep 29;12:152-6.
- Al-Attraqchi OH, Deb PK, Al-Attraqchi NH. Review of the Phytochemistry and Pharmacological Properties of *Valeriana officinalis*. *Curr Tradit Med*. 2020 Dec 1;6(4):260-77. DOI: 10.2174/2215083805666190314112755
- Shamabadi A, Hasanzadeh A, Ahmadzade A, Ghadimi H, Gholami M, Akhondzadeh S. The anxiolytic effects of *Lavandula angustifolia* (lavender): An overview of systematic reviews. *J Herb Med*. 2023 Aug 1;40:100672.
- Alimoradi Z, Jafari E, Abdi F, Griffiths MD. Therapeutic applications of lemon balm (*Melissa officinalis*) for obstetrics and gynecological health issues: A systematic review. *J Herb Med*. 2023 Dec 1;42:100751. DOI:10.1016/j.hermed.2023.100751
- Imenshahidi M, Hosseinzadeh H. *Berberis vulgaris* and berberine: an update review. *Phytother Res*. 2016 Nov;30(11):1745-64.
- Asadi-Samani M, Bahmani M, Rafieian-Kopaei M. The chemical composition, botanical characteristic and biological activities of *Borago officinalis*: a review. *Asian Pac J Trop Med*. 2014 Sep 1;7:S22-8. doi: 10.1016/S1995-7645(14)60199-1.
- Hsieh PC, Kuo CY, Lee YH, Wu YK, Yang MC, Tzeng IS, Lan CC. Therapeutic effects and mechanisms of actions of *Descurainia sophia*. *Int J Med Sci*. 2020 Aug 1;17(14):2163-74. doi: 10.7150/ijms.47357

31. Akhtari E, Ram M, Zaidi SM, Marques AM, Rahimi R, Bahramsoltani R. Fenugreek (*Trigonella foenum-graecum* L.) in Women's Health: A Review of Clinical Evidence and Traditional Use. *J Herb Med.* 2024 Feb 1;43:100816.
32. Moustafa MA, Mohamed AS, Dakrory AI, Abdelaziz MH. *Lepidium sativum* extract alleviates reproductive and developmental toxicity in polycystic ovary syndrome induced by letrozole and high-fat diet in rats. *Reprod Sci.* 2025 Apr;32(4):1338-61. doi: 10.1007/s43032-025-01820-y.
33. Irani M, Rahmanian A, Soltani N. Efficacy of Saffron (*Crocus sativus* L.) in Premenstrual Syndrome, Labor, Childbirth, and Menopause: A Systematic Review of Clinical Trials. *Modern Care J.* 2023 Jan 1;20(3).
34. Miraj S, Kiani S. A review study of therapeutic effects of *Salvia officinalis* L. *Der Pharmacia Lettre.* 2016 Oct 8;8(6):299-303.
35. Salari S, Amiri MS, Ramezani M, Moghadam AT, Elyasi S, Sahebkar A, Emami SA. Ethnobotany, phytochemistry, traditional and modern uses of *Actaea racemosa* L. (Black cohosh): a review. *Pharmacological Properties of Plant-Derived Natural Products and Implications for Human Health.* 2021 Apr 17:403-49. doi: 10.1007/978-3-030-64872-5_24.
36. Niroumand MC, Heydarpour F, Farzaei MH. Pharmacological and therapeutic effects of *Vitex agnus-castus* L.: A review. *Pharmacognosy Rev.* 2018 Jan 1;12(23).
37. Wen J, Xiang Q, Guo J, Zhang J, Yang N, Huang Y, Chen Y, Hu T, Rao C. Pharmacological activities of *Zanthoxylum* L. plants and its exploitation and utilization. *Heliyon.* 2024 Jun 30;10(12).
38. Lee HW, Ang L, Kim E, Lee MS. Fennel (*Foeniculum vulgare* Miller) for the management of menopausal women's health: A systematic review and meta-analysis. *Complement Ther Clin Pract.* 2021 May 1;43:101360. doi: 10.1016/j.ctcp.2021.101360.
39. Mahdavian M, Najmabadi KM, Hosseinzadeh H, Mirzaeian S, Aval SB, Esmaeeli H. Effect of the mixed herbal medicines extract (fennel, chamomile, and saffron) on menopause syndrome: a randomized controlled clinical trial. *J Caring Sci.* 2019 Sep 1;8(3):181-8.
40. Saberi Z, Gorji N, Memariani Z, Moeini R, Shirafkan H, Amiri M. Evaluation of the effect of *Silybum marianum* extract on menopausal symptoms: A randomized, double-blind placebo-controlled trial. *Phytother Res.* 2020 Dec;34(12):3359-66. doi: 10.1002/ptr.6789.
41. Feder E, Nyckowska J, Brzozowska J, Fiertek P, Szymańska E. The Potential Role of Selected Nutraceuticals (Melatonin, Isoflavones, Vitamin E, Valeriana *Officinalis*, *Withania somnifera*) in Mitigating Sleep Disturbances Among Menopausal Women. [Journal details missing].
42. Adaay MH, Al-Dujaily SS, Khazzal FK. Effect of aqueous extract of *Medicago sativa* and *Salvia officinalis* mixture on hormonal, ovarian and uterine parameters in mature female mice. *J Mater Environ Sci.* 2013;4(4):424-33. https://www.jmaterenviromsci.com/Document/vol4/vol4_N4/64-JMES-348-2013-Adaay.pdf
43. Asgari P, Bahramnezhad F, Golitaleb M, Salehi F, Mokhtari R, Rafiei F. Effect of *Glycyrrhiza glabra* extract and aerobic exercise on the attitude of postmenopausal women to menopause. *J Basic Res Med Sci.* 2017 Sep 10;4(4):1-7.
44. Abedinzade M, Nasri S, Omodi MJ, Ghasemi E, Ghorbani A. Efficacy of *Trigonella foenum-graecum* seed extract in reducing metabolic and inflammatory alterations associated with menopause. *Iran Red Crescent Med J.* 2015 Nov 16;17(11): 26685. doi: 10.5812/ircmj.26685
45. Fugh-Berman A, Kronenberg F. Red clover (*Trifolium pratense*) for menopausal women: current state of knowledge. *Menopause.* 2001 Sep;8(5):333-7.
46. Sankar P, Bobby Z, Mirza AA. Soy isoflavones (from *Glycine max*) in menopause health and diseases. *Biochem Physiol.* 2017;6(3):2180-92.
47. Taavoni S, Ekbatani NN, Haghani H. Effect of *Tribulus terrestris*, ginger, saffron, and *Cinnamomum* on menopausal symptoms: a randomised, placebo-controlled clinical trial. *Menopause Rev.* 2017 Mar;16(1):19-22. doi: 10.5114/pm.2017.67366.
48. Karimi FZ, Hosseini H, Mazlom SR, Rakhshandeh H. The effect of oral capsules containing *Ocimum basilicum* leaf extract on menopausal symptoms in women: a triple-blind randomized clinical trial. *Eur J Med Res.* 2024 Jul 16;29(1):367.
49. Shirazi M, Jalalian MN, Abed M, Ghaemi M. The effectiveness of *Melissa officinalis* L. versus citalopram on quality of life of menopausal women with sleep disorder: A randomized double-blind clinical trial. *Rev Bras Ginecol Obstet.* 2021 Feb;43(02):126-30.
50. Afshar S, Afshar F, Rezazade A, Ardakani ZS, Azar ZJ, Amin G, Shariat M, Haghollahi F. Effects of a combination of *Foeniculum vulgare*, *Melissa officinalis* extract, and *Nigella saliva* powder on healthy menopausal women with sexual dysfunction: A randomized clinical trial. *Jundishapur J Nat Pharm Prod.* 2020 Jan 1;15: 89925. <https://doi.org/10.5812/jjnpp.89925>
51. Moradi M, Ghavami V, Niazi A, Shirvan FS, Rasa S. The effect of *salvia officinalis* on hot flashes in postmenopausal women: A systematic review and meta-analysis. *Int J Community Based Nurs Midwifery.* 2023 Jul;11(3):169.
52. Van Die MD, Burger HG, Teede HJ, Bone KM. *Vitex agnus-castus* (Chaste-Tree/Berry) in the treatment of menopause-related complaints. *J Altern Complement Med.* 2009 Aug 1;15(8):853-62.
53. Noh YH, Hong J, Lee JW, Kim SS, Lee JY, Kang IJ, et al. A complex of *Cirsium japonicum* var. *maackii* (Maxim.) Matisum. and *Thymus vulgaris* L. Improves menopausal symptoms and supports healthy aging in women. *J Med Food.* 2022 Mar 1;25(3):281-92. doi: 10.1089/jmf.2021.K.0127
54. Shamsir M, Nadia ME, MR MD. The effects of *Ficus carica* fruit on bone markers and oestrogen level of postmenopausal osteoporotic rats. *IIUM Med J Malaysia.* 2019 Apr;18(1).

55. Wei M, Mahady GB, Liu D, Zheng ZS, Lu Y. Astragalosin, a flavonoid from *Morus alba* (mulberry) increases endogenous estrogen and progesterone by inhibiting ovarian granulosa cell apoptosis in an aged rat model of menopause. *Molecules*. 2016 May 21;21(5):675. <https://doi.org/10.3390/molecules21050675>
56. Mahady GB. Black Cohosh (*Actaea/Cimicifuga racemosa*) Review of the Clinical Data for Safety and Efficacy in Menopausal Symptoms. *Treat Endocrinol*. 2005 Jun;4(3):177-84. doi: 10.2165/00024677-200504030-00006.
57. Coyle ME, Liu J, Yang H, Wang K, Zhang AL, Guo X, et al. Licorice (*Glycyrrhiza* spp.) and jujube (*Ziziphus jujuba* Mill.) formula for menopausal symptoms: classical records, clinical evidence and experimental data. *Complement Ther Clin Pract*. 2021 Aug 1;44:101432. doi: 10.1016/j.ctcp.2021.101432.
58. Amindehghan F, Shahbazzadegan S, Houshmandi S, Amani L. Effect of *Viola odorata* vaginal suppository on menopausal vaginal atrophy: a triple-blind randomised clinical trial. *J Herb Med*. 2024 Jun 1;45:100866. DOI:10.1016/j.hermed.2024.100866
59. Cianci A, Cicero AF, Colacurci N, Matarazzo MG, De Leo V. Activity of isoflavones and de Lima Pereira MC, Mariano MR, de Souza Maciel N. Use of medicinal plants in care of women with gynecological diseases: integrative review. *Int J Dev Res*. 2019;9(03):26373-80. doi: 10.1590/1806-9282.64.06.560.