

Role of Alternate Therapies to Improve the Quality of Life in Menopausal Women: A Systematic Review

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INTRODUCTION

Menopause occurs when the ovaries tend to stop producing a hormone called estrogen which results at the end of the menstruation cycle.^[1,2] According to the Indian Menopausal Society, the typical period of menopause in Indian women is 48 years, regardless, western studies expressed that the meantime of menopause among western women is 51 years. Indian census 2011 stated that there were about 96 million women aged 45 years and this number will increase to 401 million in 2026.^[3]

Research studies substantiate that there are diverse reasons directly or indirectly linked with menopause

ABSTRACT Middle aged women in majority undergoing menopausal symptoms are unaware of the physiological changes happening in their body, necessary lifestyle changes and alternate therapies to overcome the symptoms. All major electronic sources of relevant information were systematically searched and collected data were pooled under specific subheadings. From the reviewed papers, the awareness on symptoms and related complications of menopause in the middle aged women were consolidated. Studies helped to identify alternative therapies replacing or in parallel with the Hormone Replacement Therapy to overcome the menopausal symptoms. Reduced oestrogen and progesterone level causes physiological, psychological, and genitourinary symptoms. Prolonged consequences cause libido, osteoporosis, and cardio vascular diseases. Hypo-estrogenic status is well managed with alternative therapies including dietary intervention, acupuncture, aromatherapy, exercise, and yoga. Dietary interventions involving foods like Fennel, Soy, Black Cohash, St. John Wort, Red Clover and Date Pollen were found to be managing vasomotor symptoms and sexual dysfunction. Non-Hormonal and Non-Pharmacological impact behind acupuncture treatment was well accepted. Various studies proved inhaling and massaging with Lavender, Neroli oil, Fennel, Rose, and Geranium essential oils balance cortisol hormone and reduce stress and anxiety. Impact of yoga therapy on neurohormonal pathways reduce both psychological and physiological symptoms. Reviews summarizes various symptoms and complications during menopausal transition and alternate ways of better management with dietary intervention, yoga, exercise, aromatherapy, and acupuncture to improve the quality of menopausal women's life.

KEYWORDS: *Acupuncture, alternative therapies, aromatherapy, dietary interventions, exercise and physical fitness, menopause, yoga therapy*

transition. The main factors associated with natural menopause are genetic, environmental, socioeconomic, and lifestyle.^[4] Nutritional status before, during, and after pregnancy is one of the major factors determining the number and severity of menopausal symptoms leading to their holistic living.^[5] Various studies validate the role of alternative therapies in overcoming/

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managing the severity of the symptoms associated with menopause.

ALTERNATIVE THERAPIES

Various alternate therapies were found to be available for menopausal women instead of hormone replacement therapy (HRT). Most of the research works validated that women need awareness about the alternate therapies which are accessible for reducing menopausal symptoms. In order to overcome the risk factors of HRT women look forward for more secure alternate therapies such as dietary intervention, acupuncture, aromatherapy, and aerobic exercises. All these therapeutic methods are nonpharmacologic and harmless against climacteric symptoms. Various studies share the evidence on the impact of alternative therapies (massage therapy, dietary soy, acupuncture, naturopathy or homeopathy, and herbal medicines) in managing and healing menopausal symptoms.^[6]

DIETARY MANAGEMENT

Nutrition can play an important role in the management of menopausal symptoms. The diet ought to be planned in such a way that an adequate nutrient-dense and phytoestrogen-rich diet help to manage menopausal symptoms. Phytoestrogens are plant substances with a structure and function similar to estradiol, which is responsible for estrogenic effect. There are two classes of phytoestrogens present in plant foods such as isoflavones and non-isoflavones (coumestans and lignin).^[7] It applies their estrogenic impacts fundamentally though authoritative to estrogenic receptors (ERs) α and β , with a higher liking for ER β , and going about as agonists, partial agonists, and antagonists.^[8] Phytonutrient and phytoestrogen-rich foods could help to prevent menopausal symptoms such as vaginal dryness, insomnia, memory loss then to help reduce following complications such as osteoporosis and cardiovascular diseases.^[9] Table 1 provides a list of food sources that are useful active substances for relieving menopausal symptoms.

A combination of herbs like St John's Wort (*Hypericum perforatum*) and fennel holding phytoestrogens such as isoflavones, coumestan, and lignan was found to be more effective for managing climacteric symptoms and sexual dysfunction caused due to estrogenic effects.^[10] Hypiran an alternate name of *H. perforatum* is an herbal drug used for neurological diseases for over 2000 years. Together with phytoestrogen, Hyperion contains flavonoids, xanthone derivatives (chlorogenic acid and caffeic acid), tannins (catechin), and phloroglucin hyperforin. The estrogenic effect of phytoestrogen

presents in the Hyperion act as an antidepressant to reduce psychological symptoms.^[11] Fennel (*Foeniculum vulgare*) containing isoflavones and phenolic compounds such as flavonoids (flavonoid glycosides and flavonoid aglycones), phenolic acids, hydroxycinnamic acids, coumarins, and tannins had a vital impact against the vasomotor symptoms, vaginal tingling, and dryness, dyspareunia, sexual fulfillment, and sleeping disorder.^[12] The consumption of 100 mg of fennel capsules contained fennel essence packed with a basis of 71–90 mg of Anethole in a base of sunflower oil for 8 weeks helps to reduce menopausal symptoms significantly.^[13]

To maintain balance of hormones in menopausal women and also to alleviate postmenopausal symptoms in women, the standardized hydroethanolic extract of fenugreek seeds (*Trigonella foenum*) was used.^[14]

Randomized, placebo-controlled, clinical trial revealed that postmenopausal women taking 40 mg dried leaves of red clover (*Trifolium pratense*) daily for 3 months were found to be more effective in reducing the severity of menopausal symptoms.^[15] Genistein and Daidzein were the main isoflavonoids found in red clover. An observational study proved that intake of Black cohosh extract containing isopropanol (2.5 mg/day) for 180 days showed improvement in reducing hot flashes, sweating, sleep problems, and anxiety.^[16]

The combination of herbal plants including Shatavari (*Asparagus racemosus*), Amrith (*Tinospora cardifolia*), Guggul (*Commiphora mukul*), and Ashwagandha (*Withania somnifera*) decreased menopausal side effects in postmenopausal ladies over a period of 3 months.^[17] Dates (*Phoenix dactylifera*) comprise natural antioxidants, such as flavonoids, glycosides, saponins, and estrogens. Oral administration of date palm pollen improved vaginal lubrication and reduce dyspareunia in the postmenopausal women.^[18] Ginkgo biloba a phytoestrogen contains active compounds namely flavone glycosides which improve sexual function in postmenopausal women.^[19]

Ethnic postpartum traditional formulations (formulated with edible herbs, medicinal plants, and edible plant foods) holding active compounds address major postpartum functional properties including rejuvenation, improving immunity, lactation, nourishment, strengthening of muscles and bones, intervening with blood loss, improving nervous, and digestive system and depression.^[5] Studies have proven that certain plants and herbs such as Shatavari, Amrith, guggul, Ashwagandha, long piper, garlic, fennel, sesame, and moringa holding phytoestrogen and phytonutrients added in the preparation during the postpartum care not only address

Table 1: Food sources as functional active compounds in the management of menopausal symptoms

Dietary sources	Botanical name	Recommendation/day	Active compounds	Effects on menopausal symptoms
St John's Wort and fennel ^[9]	<i>H. perforatum</i> and <i>F. vulgare</i>	The fennel group consume daily dose of 30 mg/tablets and the Hypiran group 30 mg	Flavonoids (flavonoid glycosides and flavonoid aglycones), phenolic acids, hydroxycinnamic acids, coumarins, and tannins	Improved the sexual activity of postmenopausal women
St John's Wort ^[20]	<i>H. perforatum</i>	900 mg 0.3% hypericin per day	Flavonoids, xanthone derivatives chlorogenic acid and caffeic acid), tannins (catechin), and phloroglucin hyperforin	Act as an antidepressant
Fennel ^[21]	<i>F. vulgare</i>	Soft capsule contained 30% fennel	Isoflavones and phenolic compounds such as flavonoids (flavonoid glycosides and flavonoid aglycones), phenolic acids, hydroxycinnamic acids, coumarins, and tannins	Reduced vasomotor symptoms, vaginal tingling, dryness, dyspareunia, sexual fulfillment, and sleeping disorder
Fennel essence packed with sunflower oil ^[7]	<i>F. vulgare</i> and <i>H. annuus</i>	100 mg of fennel capsules	Anethole, fenchone, estragole, and phenolic combinations	Reduced vasomotor symptoms, psychological symptoms, and sexual problems
Fenugreek ^[22]	<i>Trigonella foenum-graecum</i>	Capsule contain 250 mg×2/day	Protodioscin and trigonelline	Significant reduction in vasomotor effects and leg pain
Red clover ^[23]	<i>T. pretense</i>	40 mg dried leaves for 3 months	Genistein and daidzein	The severity of menopausal symptoms reduced
Black cohosh ^[24]	<i>C. racemosa</i>	2.5 mg/day for 180 days	Polyphenols such as formononetin, cimigenol	Reduced hot flashes, sweating, sleep problems, and anxiety
Amrith, satavari, Ashwagandha, Guggul ^[25]	<i>T. cordifolia</i> (75 mg), <i>A. racemosus</i> (100 mg), <i>W. somnifera</i> (100 mg), <i>C. mukul</i> (225 mg)	2-piece opaque gelatin capsule	Aliphatic compounds, alkaloids, steroids, lactones, glycosides, sesquiterpenoids, polysaccharides (arabinogalactan), various fatty acids, and essential oils	Relieved vasomotor symptoms and sexual dysfunction
Dates ^[26]	<i>P. dactylifera</i>	Date palm pollen consumed as such	Flavonoids, glycosides, saponins, and estrogens	Vaginal lubrication improved and reduced dyspareunia
Ginkgo biloba ^[27]	-	-	Flavone glycosides	Improved sexual function in postmenopausal women
Fortified yoghurt ^[28]	-	5 mcg of Vitamin D3 twice a day for 2 months	-	Improved 25OHD level of menopausal women

25OHD: 25 hydroxy Vitamin D, *H. perforatum*: *Hypericum perforatum*, *F. vulgare*: *Foeniculum vulgare*, *H. annuus*: *Helianthus annuus*, *C. racemosa*: *Cimicifuga racemosa*, *T. pretense*: *Trifolium pretense*, *T. cordifolia*: *Tinospora cordifolia*, *A. racemosus*: *Asparagus racemosus*, *W. somnifera*: *Withania somnifera*, *C. mukul*: *Commiphora mukul*, *P. dactylifera*: *Phoenix dactylifera*

the same but also helps to address upcoming health issues including menopausal symptoms in women.^[20]

Consumption of fortified yogurt containing 5 mcg Vitamin D3 twice a day for 2 months improved 25 Hydroxy Vitamin D level of menopausal women from 36.4 to 48.6 nmol/L.^[20] A randomized control study revealed that oral dose of 0.4 g of isoflavone along with Vitamin D (300 UI), Calcium (5 g), and inulin (300 mg) for 12 months showed a significant reduction in vasomotor symptoms, sexual dysfunction, and improved the overall quality of life for the postmenopausal women.^[21,22] Menopausal women needed special attention in consuming micro-nutrients such as calcium,

Vitamin D, iron, zinc, magnesium, folate, Vitamin B-6, B-12, and E.^[23]

Boron was identified to be an essential mineral to reduce urinary calcium loss and increases estrogen circulation in postmenopausal women. He also stated that boron helps to hold on to estrogen and prevent the depletion of calcium in the bones of menopausal women.^[24] Calcium, Vitamin D, and adequate dietary protein intakes were required for healthy bone maintenance in menopausal women.^[25] According to the European Guidance for the Diagnosis and Management of Osteoporosis, 1000 mg/day for calcium, 800 IU/day for Vitamin D, and 1 g/kg body weight of protein are recommended for all

women aged over 50 years.^[24] Due to rich phytoestrogen diet consumption, vasomotor symptoms are not predominant in Asian women as in Western women.^[26]

AROMATHERAPY

Essential oils used in aromatherapy influence through two unique ways such as through the sense of smell so that by breathing in the scent particles, olfactory receptors send impulses to the olfactory area of the brain. This is firmly related to control systems such as memory, emotions, hormones, sexual feelings, and heart rate. Signals trigger the hormone-releasing substances to have the capacity to calm down and creating euphoria that leads to physical and mental changes. Moreover, the second way is skin absorption. During massaging with volatile oils, it penetrates in skin and can go through the capillaries of blood and reach the derma to apply their belongings. The pain-relieving effect of essential oil is applied through four mechanisms including oil compound-complex impacts on behavioral areas and memory and its effect on the various hormones such as cerebrum dopamine, serotonin, and norepinephrine and stimulates the endocrine opioid system.^[25,26]

The breathing of neroli oil diminished menopausal side effects, improved sexual desire, and decreased circulatory strain among postmenopausal women. Neroli oil has the potential to decrease blood pressure and enhance the internal secretion system.^[27] Fragrance-based treatment with lavender or neroli oil and the combination of geranium, fennel, rose and lavender altogether enhanced menopausal women's sexual capacity.^[28] The main active compounds in lavender (*Lavandula angustifolia*) were linalool (38.6%–76.9%), followed by lavandulol (4.1%–8.6%), coumarin (2.2%–21.8%), and terpinen-4-ol (0.3%–14.3%).^[29] The lavender plays a sedative role similar to narcotic materials. There are several mechanisms of action for lavender to improve sleep disorders, such as the acetylcholine secretion blocking and gamma-aminobutyric acid receptors interaction in the central nervous system.^[30] The mechanism of action of lavender in alleviating hot flashes can be attributed to a decrease in stress hormone and stimulation of beta-endorphin secretion.^[31]

ACUPUNCTURE

Acupuncture includes embedding slight needles through an individual's skin at explicit focuses on the body, to different profundities and it has been used for 1000 years in China to treat various diseases including sleep disorders. The use of acupuncture acts as an adjunctive or stand-alone treatment to reduce menopause-related vasomotor symptoms.^[32] Fu *et al.*

in 2017 did 10 sessions of acupuncture at bilateral Shenshu (BL 23) and Ganshu (BL 18) with unilateral Qimen (LR 14) and Jingmen (GB 25) or Streitberger needles for over 3 weeks. Pittsburgh sleep quality index questionnaire was used for assessing the quality of sleep for this study and identified that acupuncture improves the quality of sleep in menopausal women.^[33] Electronic acupuncture treatment for 12 weeks declined body mass index, waist-hip ratio, and fat percentage in menopausal women.^[34] Based on overall evidence from the study stated that acupuncture reduces menopausal hot flashes disturbances.^[35] An investigation of the efficacy of a standardized brief acupuncture approach for women with moderate-to-severe menopausal symptoms. The intervention group received treatment for 5 weeks with predefined acupuncture points CV-3, CV-4, LR-8, SP-6, and SP-9. The outcome of this study is the acupuncture intervention significantly decreased hot flashes.^[36]

EXERCISE AND PHYSICAL FITNESS

The moderate volume of aerobic exercise improves the quality of life, psychosocial effects, and sleep quality in perimenopausal women.^[37] Early postmenopausal women showed increased insulin sensitivity, intake of insulin-stimulated glucose, and high-intensity exercise/training for 12 weeks reduced insulin sensitivity among pre and postmenopausal women.^[38] Aerobic exercise helped to improve the cardiovascular, respiratory system, and increase lean muscle mass in menopausal women.^[39] Researchers observed that capoeira exercises and walking were more effective for keeping in the good physical shape of the lumbar spine and total femur bone mineral density in postmenopausal women.^[40] A cross-sectional study with 151 menopausal women to investigate was done the difference in climacteric symptoms by introducing regular exercise, demographic, and lifestyle changes. Greene's climacteric scale was used for observing the variations in their symptoms. They examined that regular physical activity reduces menopausal vasomotor symptoms than any other demographic and lifestyle factors.^[41]

YOGA THERAPY

Yoga was identified as a healing tool to achieve positive well-being to control and cure menopause side effects.^[42] An intervention study proved that yoga therapy helps in improving menopausal symptoms, lowering blood glucose level, low-density lipoprotein, total cholesterol, serum triglyceride concentration, and glycated hemoglobin level among perimenopausal women.^[43] Yoga therapy also improved cognitive functions such as remote memory, mental balance, attention and concentration, delayed and immediate verbal retention,

and recognition.^[44] Yoga therapy alone or as an adjunct to the conventional treatment can be effective in decreasing oxidative stress, risk of cardiovascular diseases, metabolic syndrome, and in ameliorating the quality of life among perimenopausal women.^[38] Yoga therapy could improve hot flashes, night sweats,^[43] and total antioxidant activity in perimenopausal women.^[37] A similar study revealed that a shorter period of 6–12 weeks of yoga practice did not demonstrate any clinical improvement in vasomotor symptoms, anxiety, and depression but furthermore yoga helps to reduce sleeping problems among menopausal women.^[45]

CONCLUSION

Effective treatments and alternative therapies in the majority help to overcome symptoms or problems during the menopausal transition. Affordable, cost-effective individual or combined alternative therapies including dietary interventions, yoga, acupuncture, and aroma therapies were advised to be the better options.

Acquiring early awareness and nutritional care during vulnerable stages including prepartum and postpartum nutritional care helps to reduce the severity of the menopausal symptoms. This study throws light on the effective management of menopausal symptoms with a collective approach including dietary, yoga, exercise, aromatherapy, and acupuncture interventions.

Recommendation

The study is recommending for emerging a convergent research model of combined alternative therapies with guidelines for practice in consultation with the concerned line workers, medical practitioners, and experienced women.

Authors' contributions

All authors read and approved the final manuscript.

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Conflicts of interest

There are no conflicts of interest.

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