

The impact of a lifestyle intervention program on managing menopausal symptoms and enhancing the quality of life for rural women

Devi K¹, Dr. Sumathy²

¹ Scholar in Nursing, Sri Balaji Vidyapeeth Deemed University, Bahour, India

² Vice Principal, Sri Balaji Vidyapeeth Deemed University, Bahour, India

Abstract

Menopause has a significant impact on rural women, requiring targeted management techniques. This review investigates the feasibility and efficacy of lifestyle interventions, such as dietary changes, exercise, and stress reduction, in treating menopausal symptoms. Rural women frequently face limited healthcare access and cultural barriers, making accessible interventions essential. According to studies, lifestyle changes can effectively reduce vasomotor and psychological symptoms, thereby improving quality of life. However, knowledge gaps and cultural beliefs necessitate individualized, community-based programs. Overcoming obstacles such as financial constraints and logistical challenges is critical to successful implementation. This review emphasizes the importance of culturally sensitive interventions for empowering rural women during menopause.

Keywords: Menopause, rural women, lifestyle interventions, cultural barriers, healthcare access

Introduction

Menopause, a natural biological transition that marks the end of a woman's reproductive years, is defined by the permanent cessation of menstruation, which usually occurs between the ages of 45 and 55 (Greendale *et al.*, 1999^[2]; S R Davis, 2015)^[7]. This physiological shift, caused by declining ovarian function and estrogen production, results in a series of symptoms that can have a significant impact on a woman's daily life. The severity and manifestation of these symptoms vary greatly, ranging from mild discomfort to debilitating conditions that affect physical, psychological, and social well-being (Monteleone *et al.* 2018^[10]; Mckinlay, 1996)^[8, 11].

During this phase, women face various symptoms including vasomotor symptoms such as hot flashes and night sweats, which are among the most common and disruptive experiences, often leading to sleep disturbances and decreased quality of life (Bruce & Rymer, 2009^[13]; J E Blümel *et al.*, 2012)^[48]. Psychological symptoms such as mood swings, irritability, anxiety, and cognitive changes are also common, highlighting the intricate relationship between hormonal fluctuations and mental health (Gava *et al.*, 2019^[14]; Bennetts, 2024)^[18]. Furthermore, urogenital changes like vaginal dryness and atrophy can impair sexual function and comfort. The biological aspects of menopause are complex and last a woman's entire life (Leidy, 1994^[1]; Iosif & Bekassy, 1984)^[6]. Menopause is also studied from a comparative life history perspective, which helps us understand the evolutionary context of this transition (Pavelka & Fedigan, 1991)^[3].

Awareness and understanding are required for better management of menopause symptoms. Studies have presented reports that rural women have less awareness compared to urban regions due to the spread of myths and misconceptions. Accurate information and education can dispel myths, reduce anxiety, and promote proactive symptom management. The need for hormone replacement therapy (HRT) and its efficacy in managing menopausal symptoms is also a key factor in menopause management (Al-Safi & Santoro, 2014^[9]; Lobo, 2017^[28]; Hammond,

1996^[23]; Hunter *et al.*, 1997^[27]; A m Kaunitz *et al.*, 2015)^[5]. Primary care practitioners and nurses can be a good source of information (Aggarwal *et al.* 2022)^[31].

Investigating lifestyle intervention techniques accessible to rural women is required. Dietary changes, regular exercise, and stress-reduction strategies are all effective and long-term ways to manage menopausal symptoms (Eliopoulos, 2009^[32]; Klimis-Zacas & Wolinsky, 2003^[33]; Cristina & Lucia, 2021)^[34]. Exercise has been shown to alleviate menopausal symptoms (Sternfeld *et al.*, 2014^[35]; Villaverde-Gutiérrez *et al.*, 2006)^[38]. Quitting smoking and limiting alcohol consumption are also important (Chollat-Traquet & World Health Organization, 1992^[39]; Anczak & Nogler, 2003^[40]; Thompson, 2002)^[41].

Understanding the knowledge gaps and lived experiences of rural women is critical for creating culturally sensitive and effective interventions (Lamani, 2018^[29]; O'Reilly *et al.*, 2023)^[30]. Health education programs customized to the specific needs of rural communities can help women make informed health decisions (Gebretatayos *et al.*, 2020^[45]; Pullen *et al.*, 2001; Ashenden *et al.*, 1997)^[46]. By investigating the feasibility and acceptability of lifestyle interventions, we can help rural women improve their quality of life during this critical period of their lives.

Background information

Menopause is a natural biological transition, signalling the end of reproductive capability by permanent discontinuance of maturation. This transition is spread across several phases namely; premenopause or perimenopause, menopause and postmenopause. Perimenopause represents the transitional period leading up to menopause. This phase is characterised by fluctuating hormone levels, irregular menstrual cycles, and the onset of symptoms like hot flashes and night sweats (Greendale *et al.*, 1999^[2]; McKinlay *et al.*, 1996)^[8, 11]. This is followed by menopause itself where the woman has not had a menstrual period for 12 consecutive months. Lastly, postmenopause includes all the later years following the

menopause, during this time the hormone stabilises, however, some symptoms may persist or diminish (Leidy, 1994^[1]; Ambikairajah, Walsh & Cherbuin, 2022)^[12].

In India, menopause experience varies significantly in varied cultures. Awareness of menopause between urban and rural populations is different as urban women tend to have greater access to information and healthcare, leading to increased awareness of menopausal symptoms and available treatments. However, in rural areas, this topic is often covered in secrecy and false information (Borker *et al.*, 2013^[4]; Dasgupta & Ray 2009)^[15]. Rural women face lots of challenges due to limited access to healthcare, social stigma, and cultural norms that may reduce or dismiss their symptoms (Price, Storey & Lake, 2008)^[16]. These challenges are often associated with socio-economic factors such as limited education and financial resources, which restrict their ability to seek medical help or adopt lifestyle changes to manage menopausal symptoms. Additionally, a comparative study has shown that menopause is not only a human experience, but that sociocultural variables play a significant role in how it manifests and affects people (Pavelka & Fedigan, 1991)^[3]. Thereby, women in rural areas frequently suffer in silence due to a lack of open conversation and conserved medical service, emphasising the need for interventions to raise menopause awareness and support in rural India.

Symptoms of menopause

Physiological symptoms

Menopause, during this phase, causes fluctuation in hormones, triggering a range of physiological symptoms resulting from estrogen deficiency including

- vasomotor symptoms such as hot flashes and night sweats, common from estrogen decline influencing thermoregulation (Monteleone *et al.*, 2018)^[10].
- Genitourinary symptoms such as vaginal dryness and atrophy, affect tissue elasticity and lubrication (Al-Safi & Santoro, 2014)^[9].
- Bone density loss increases the risk of osteoporosis due to inhibition in bone reabsorption (Bruce & Rymer, 2009)^[13].

Along with the above symptoms, menopause also brings mood changes, sleep disturbances, and cognitive shifts. These symptoms occur due to fluctuating estrogen and progesterone levels, affecting the neurotransmitters' balance (Bosse & Di Paolo, 1995)^[19]. Decreased estrogen can also lead to skin and hair changes, and joint pain. These hormonal shifts disrupt physiological homeostasis, manifesting as diverse symptoms impacting women's quality of life (Stachenfeld, 2014)^[20]. Understanding these hormonal connections is crucial for managing menopausal symptoms and implementing appropriate therapies.

Psychological symptoms

Along with physiological effects, menopause significantly affects psychological well-being, causing anxiety, despair, brain fog, sleeplessness, and irritability. These symptoms are also linked with hormonal fluctuations especially, estrogen and progesterone deficiency. Estrogen plays a role in regulating neurotransmitters like serotonin and norepinephrine. Fluctuating estrogen levels mean dysregulation of neurotransmitters, resulting in mood disturbance and anxiety (Gava *et al.*, 2019)^[14]. Additionally,

these fluctuations can cause brain fog and changes in cognitive functions (Northrup, 2021)^[17]. The decline in progesterone levels causes sleep disturbances, often accompanied by night sweats, further contributing to irritability and mood instability heightening anxiety. Qualitative research focuses on women's lived experiences throughout perimenopause and menopause, imploring the significant impact on mental health (Bennetts, 2024)^[18]. These hormonal alterations cause a complicated interplay affecting both mood and cognitive performance, indicating the necessity for comprehensive management techniques.

Awareness of menopause among rural women

Awareness and understanding of menopause among women in rural areas are often limited due to restricted access to information and norms shaped by the culture. Studies have shown a significant gap in knowledge in rural women compared to urban populations (Borker *et al.*, 2013)^[4]. This lack of awareness was due to the spread of myths and misconceptions. Rather than a normal biological process, menopause is often viewed as an illness or a symptom of aging and frailty in rural areas. Cultural taboos surrounding menstruation and women's health accelerate the problem, producing an environment of silence and stigma (Duffy *et al.*, 2011)^[21].

Myths surrounding menopause can include beliefs that it signifies the end of a woman's productive life or that it is associated with supernatural forces. These misconceptions often prevent women from seeking appropriate medical advice or adopting healthy lifestyle changes (D Nagaraj *et al.*, 2021)^[24]. The impact of this lack of awareness is profound. Women may suffer from untreated symptoms, leading to diminished quality of life and increased health risks (Furman, 1997)^[26]. For example, without understanding the link between menopause and bone density loss, women may not take preventive measures against osteoporosis. Furthermore, cultural beliefs can influence the management of menopause. In some rural communities, traditional remedies are preferred over modern medical interventions, which may not always be effective or safe (Ramakuela *et al.*, 2015)^[22]. The lack of access to healthcare facilities and trained professionals further limits the options available to rural women. This results in women enduring significant physical and psychological distress, highlighting the urgent need for culturally sensitive educational programs and improved access to healthcare services in rural areas.

Strategies available for the management of menopausal symptoms

Hormone replacement therapy

Hormone Replacement Therapy (HRT) involves administering hormones, typically estrogen and sometimes progesterone, to alleviate menopausal symptoms (Lobo, 2017^[28]; Hickey, Elliott & Davison, 2012)^[25]. It's considered when symptoms severely impact quality of life, as estrogen deficiency can lead to vasomotor symptoms, genitourinary atrophy, and bone loss (Hammond, 1996)^[23]. Benefits include symptom relief and osteoporosis prevention. However, HRT carries potential risks, including increased risks of certain cancers and cardiovascular events, necessitating careful patient selection and monitoring (Johnson, 1998)^[42].

Due to scarce healthcare resources, HRT availability is often limited in rural areas. Cultural beliefs and misinformation

also influence acceptance. Qualitative studies reveal complex decision-making processes, where women weigh symptom severity against perceived risks, often influenced by cultural and social factors (Hunter *et al.*, 1997) [27]. This disparity highlights the need for improved access and culturally sensitive information dissemination in rural communities.

Stress management techniques

Stress management is vital for mitigating menopausal symptoms and adopting specific techniques that can induce stress reduction be beneficial for rural women. Rural women often face unique sets of stressors, including limited access to healthcare and social support. Understanding their existing knowledge and experiences is crucial for effective interventions (O'Reilly *et al.*, 2023) [30]. It is well-established that mindfulness and meditation promote relaxation and reduce anxiety, therefore, these methods in the rural lifestyle can be beneficial. Simple breathing exercises and guided imagery can be easily incorporated into daily activities. Community-based support groups, led by local healthcare providers or community leaders, can offer women a safe space to share their experiences and learn coping strategies. Yoga and gentle stretching, performed in readily available spaces such as community halls or outdoor areas, can help to relieve physical tension and improve mood. Furthermore, promoting traditional stress-relieving activities such as gardening or spending time outdoors can be culturally appropriate and accessible (S S Coughlin, 2015) [44]. Research also found that urban and rural post-menopausal women have different levels of knowledge about bio-psychological problems and how to manage them, so interventions should be tailored to these differences (Lamani, 2018) [29].

Lifestyle Intervention Strategies

Lifestyle changes can effectively relieve stress for rural women going through menopause. Walking and gardening are activities that can help relieve symptoms and improve mood, making them ideal for rural living. Dietary changes, such as reducing caffeine intake and increasing phytoestrogen levels, are simple to implement. Stress-reduction techniques, such as mindfulness and breathing exercises, are simple to incorporate into one's daily routine. Support groups in the community, led by local leaders, can provide emotional support and share experiences. Because awareness of bio-psychological issues and their management varies between urban and rural post-menopausal women, interventions must be tailored to meet the specific needs of these groups (Lamani, 2018) [29]. In rural areas, these approaches are frequently more advantageous than hormone therapy because they are less expensive and more widely accepted. Primary care providers and nurses can be valuable resources for menopausal women (Aggarwal, N., Meeta, M., & Chawla, N., 2022) [31]. These interventions' practicality and cultural relevance help to ensure their long-term success.

Lifestyle intervention strategies

Diet and nutrition

It is very crucial for women who are going through menopause to maintain a nutritionally balanced diet to promote optimal health which in turn aids in mitigating the

severity of symptoms associated with menopause. A diet rich in fruits, vegetables, and whole grains provides essential vitamins and minerals, supporting overall health and potentially reducing hot flashes, this shows the association between diet and overall well-being (Eliopoulos, 2009 [32]; Cassidy, 2004) [43]. Additionally, it is recommended to incorporate calcium and vitamin D as these are vital to bone health, which can be compromised during menopause (Klimis-Zacas & Wolinsky, 2003) [33]. Plant products such as soy milk are rich in phytoestrogen which may have estrogen's effect on one's body, offering symptom relief. Gastrointestinal health is also of concern as the decline in estrogen and progesterone can affect its normal functionality, thereby it is recommended to have a balanced diet to mitigate any associated symptoms (Cristina & Lucia, 2021) [34]. It is well known that processed foods, sugary drinks, and excessive saturated fats can have adverse effects on health, limiting these products is quite essential for the management of weight and cardiovascular health as both are important to be considered during menopause. Consuming whole, unprocessed food is commended as it ensures comprehensive nutrition, preventing deficiencies and fostering resilience during this transitional phase.

Physical exercise

Research indicates that exercise significantly aids in managing menopausal symptoms, providing both physical and mental benefits. Randomised controlled trials confirm the effectiveness of exercise in reducing these symptoms (Sternfeld *et al.*, 2014 [35]; T M Nguyen, 2020) [37]. Regular physical activity can improve metabolism, and sleep quality and enhance mood due to dopamine secretion. Additionally, studies have shown regular exercise such as brisk walking or cycling, and strength training can help reduce heat flashes. It is recommended that a combination of aerobic exercise such as brisk walking or cycling, and strength training to have an optimal outcome (A Daley, 2014) [36]. Studies have shown that customised exercise programs have positive impacts on the quality of life of rural menopausal women (Villaverde-Gutiérrez *et al.*, 2006) [38]. As tailored exercise programs may not be viable in every rural area, practical exercises like walking, gardening, and participating in community-based fitness groups can be an option to maintain physical well-being. These are readily accessible, require minimal equipment, and can be integrated into daily routines, making them sustainable and beneficial for managing menopausal symptoms.

Limiting unhealthy habits

Smoking, drinking, and tobacco use have a negative impact on health, particularly in women going through menopause, so raising awareness is critical, especially in rural communities. These habits can accelerate menopausal symptoms which increases the risk of chronic diseases. While precise percentages may vary depending on the region, studies have consistently shown increases in percentages for rural women's alcohol and tobacco addictions as rural women face unique challenges due to limited access to resources and social factors (Chollat-Traquet & WHO, 1992) [39]. Similarly, reports from general surgeons have also highlighted the risks of smoking for women (Thompson, 2002) [1]. Awareness can be raised through community-based programs and educational workshops. Simultaneously, proper healthcare services

should be made available in these areas for better management. Community interventions such as counseling and support as primary care, are effective strategies for tobacco cessation (Anczak & Nogler, 2003) ^[40]. Rural women should be motivated to adopt positive lifestyle changes by explaining the effects of the above practices on their health as well as the detrimental links between these habits and accelerated menopausal symptoms. Tailored interventions that address the specific needs of rural women are vital for successful outcomes.

Effect of lifestyle intervention strategies on quality of life

Awareness programs in rural areas have been shown to significantly improve menopausal coping. Health education sessions for teachers can provide accurate information about menopause and how it can be managed (Gebretatayos *et al.*, 2020 ^[45]; Shukla, Ganjiwale, & Patel, 2018) ^[49]. Practical lifestyle change is offered during Community-based workshops, led by healthcare professionals or trained community members. Additionally, these workshops could cover dietary changes, exercise regimens, and stress-reduction techniques which will aid in managing menopause symptoms.

The effectiveness of lifestyle intervention programs in improving the quality of life for rural women is well established (Pullen *et al.*, 2001) ^[47]. Regular physical activity, healthy eating habits, and stress management can help relieve menopausal symptoms and improve overall well-being. General practice is an excellent place to encourage lifestyle changes (Ashenden *et al.*, 1997 ^[46]; E K Barnidge, 2013) ^[50].

However, there are several limitations to carrying out these awareness campaigns. Rural areas frequently have limited access to healthcare professionals, making it difficult to schedule regular appointments. Adopting new lifestyle habits can be difficult due to cultural beliefs and traditions. Financial constraints may limit access to healthy foods and fitness facilities. Language barriers and low literacy levels can make it difficult to convey health information effectively. Furthermore, the rural population is spread out, making it difficult to reach all women. To address these limitations, programs should be customised to meet the specific needs and cultural contexts of rural communities, with the participation of local resources and leaders.

Conclusion

Menopause has a significant impact on rural women, which requires increased awareness and effective management techniques. Menopausal symptoms, which range from vasomotor issues to psychological changes, have an impact on quality of life (Montelone *et al.*, 2018; Borker *et al.*, 2013) ^[4]. Lifestyle interventions are critical for providing accessible and culturally appropriate solutions.

These interventions, which include dietary changes and exercise, are feasible and widely accepted in rural areas where traditional practices are prevalent (O'Reilly *et al.*, 2023 ^[30]; Villaverde-Gutiérrez *et al.*, 2006) ^[38]. They are a viable alternative to hormone therapy, which may be less widely available (Hammond, 1996) ^[23]. Rural women's understanding of menopausal issues varies, so interventions must be tailored (Lamani, 2018) ^[29].

However, limitations such as limited access to healthcare, financial constraints, and cultural barriers can all hinder the execution of these interventions (Gebretatayos *et al.*, 2020)

^[45]. Dispersed populations, as well as logistical issues, present challenges. Overcoming these requires community engagement and culturally sensitive programs that improve the well-being of rural menopausal women.

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