

International Journal of Advanced Biochemistry Research



ISSN Print: 2617-4693
 ISSN Online: 2617-4707
 NAAS Rating (2025): 5.29
 IJABR 2025; SP-9(11): 1286-1293
www.biochemjournal.com
 Received: 03-10-2025
 Accepted: 10-11-2025

Dr. Aditi Vohra
 Assistant Professor,
 Dronacharya Degree College,
 Kurukshetra, Haryana, India

Dr. Tarvinder Jeet Kaur
 Professor & Chairperson,
 Department of Home Science,
 Kurukshetra University,
 Kurukshetra, Haryana, India

Corresponding Author:
Dr. Aditi Vohra
 Assistant Professor,
 Dronacharya Degree College,
 Kurukshetra, Haryana, India

Nutritional status and perimenopausal symptom recognition in women during perimenopause: An assessment study

Aditi Vohra and Tarvinder Jeet Kaur

DOI: <https://www.doi.org/10.33545/26174693.2025.v9.i11Sp.6852>

Abstract

Perimenopause, the transitional phase to menopause, involves significant hormonal changes and can last from months to years. It is crucial due to its impact on women's health and their caregiving roles. A study on ninety perimenopausal women in Ambala (Haryana) assessed awareness and prevalence of perimenopausal symptoms using a predesigned questionnaire. Nutritional status was also assessed using anthropometric measurements. Results showed only one-fourth were aware of this phase. Common symptoms included physical exhaustion (89%), muscle and joint pain (76%), sleep disruptions (86%), and mood swings (77%). Vasomotor symptoms like hot flushes (76%) and sweating (91%) were prevalent. Sexual issues, such as decreased desire (57%) and intimacy avoidance (31%), were also noted. Urogenital symptoms included vaginal dryness (41%) and bladder problems (52%), while 56 percent reported heart discomfort. The study emphasizes the need for better awareness and education about perimenopause to enhance women's quality of life and support their roles in family and community health.

Keywords: Perimenopause, hot flushes, vasomotor, vaginal dryness, urogenital, psychosomatic

Introduction

Perimenopause, or the menopausal transition, is a significant phase in a woman's life characterized by hormonal fluctuations and physiological changes. This transition, lasting approximately four to nine years, precedes menopause, the complete cessation of menstruation typically occurring around 45.5 years of age, though individual variations exist (Kalita *et al.*, 2024; Srivastava & S, 2024) ^[1, 2]. Fluctuations in estradiol and progesterone levels during this period contribute to a wide range of symptoms, affecting physical, psychological, and sexual health. Women frequently experience irregular menstrual cycles, hot flashes, night sweats, sleep disturbances, cognitive difficulties, and musculoskeletal discomfort (Bagga *et al.*, 2024; Joffe *et al.*, 2020) ^[3, 4]. Additionally, issues such as vaginal dryness, dyspareunia, and reduced libido significantly impact emotional well-being and relationship satisfaction (Manisha, 2024; Ibeachu & Uahomo, 2024; Andrews *et al.*, 2024) ^[5, 6, 7].

Beyond physical symptoms, perimenopause is often associated with heightened psychological distress, including anxiety and depression, necessitating routine mental health screening (Dar *et al.*, 2020) ^[8]. Studies indicate that strained familial relationships further exacerbate emotional distress, highlighting the importance of strong support systems (Johnson *et al.*, 2018) ^[9]. Broader socio-demographic factors, such as education level and access to healthcare, also influence perimenopausal well-being. Culturally sensitive and equitable healthcare models are essential for ensuring effective management strategies tailored to diverse populations (Evans *et al.*, 2024; Manisha, 2024) ^[10, 5].

With the global population of perimenopausal women projected to reach 1.2 billion by 2030, the demand for effective healthcare interventions is increasing, particularly in developing nations (Siusiuka *et al.*, 2024) ^[11, 15]. Studies from China and India report a high prevalence of moderate to severe perimenopausal symptoms, including hot flashes, fatigue, and mood swings (You *et al.*, 2024; Umamaheshwari & Anitha, 2024) ^[12, 13]. An integrated approach combining medical interventions, lifestyle modifications and counselling is essential for

symptom management and overall well-being (Kuruville & Sagare, 2024) ^[14]. Engaging in regular physical activity, maintaining a healthy weight and managing stress have been shown to alleviate symptoms and promote long-term health benefits (Siusiuka *et al.*, 2024) ^[11, 15]. Furthermore, participation in religious and social networks enhances emotional resilience and mental well-being (Yingngam, 2024; Kalita *et al.*, 2024) ^[16, 1].

Hormonal changes during perimenopause also increase the risk of cardiovascular disease and osteoporosis (Vohra & Kaur, 2024) ^[17]. However, research suggests that midlife mood disturbances are often linked to daily stress, poor health, and a history of depression rather than hormonal fluctuations alone (Vohra & Kaur, 2024) ^[17]. These findings underscore the need for comprehensive healthcare approaches that address both physiological and psychological aspects of perimenopause.

Lifestyle-based strategies, including a balanced diet, regular exercise and cognitive behavioural therapy, have demonstrated effectiveness in managing perimenopausal symptoms (Bagga *et al.*, 2024) ^[3]. Alternative therapies, such as Ayurvedic treatments, have also shown promise in mitigating symptoms with minimal side effects (Manisha, 2024) ^[5]. A multidisciplinary approach integrating medical, psychological and lifestyle interventions is crucial for holistic care. Educational initiatives, social support and individualized healthcare empower women to navigate this transition more effectively (Manisha, 2024; Ibeachu & Uahomo, 2024) ^[5, 6]. Addressing sexual health concerns through therapeutic interventions further enhances intimacy and overall quality of life (Bagga *et al.*, 2024) ^[3]. By adopting a holistic and inclusive approach, healthcare providers can improve the overall health and well-being of perimenopausal women, ensuring they receive the necessary support to manage this life stage effectively.

Methodology

Sample selection – Purposive sampling technique was employed to select 90 perimenopausal women in the age group of 35-50 years from different areas of Ambala (Haryana).

Inclusion Criteria

- Women aged between 35 to 50 years, residents of Ambala, Haryana
- Self-reportedly undergoing perimenopause
- Having elevated lipid profiles and hypertensive status

Exclusion criteria

- Women outside the specified age range, not undergoing perimenopause and pregnant or breastfeeding
- Individuals with a history of cardiovascular disease/ renal failure/ diabetic/ neuromuscular diseases or using medications affecting neuromuscular function.
- Use of hormone replacement therapy or other medications potentially altering body composition.
- Women who are either unwilling to participate in the study or have not provided their consent.

Informed Consent

Written informed consent was obtained from all participants prior to their inclusion in the study.

Ethical Approval and Trial Registration

Ethical approval for the study was obtained in accordance with the guidelines of the Clinical Trial Registry of India (CTRI). The trial was duly registered with the Clinical Trial Registry of India (CTRI) under the registration number CTRI/2022/06/043481, CTRI Reference No.: REF/2022/06/055102 (Date of registration: 24 June 2022) and is accessible at <https://trialsearch.who.int/Trial2.aspx?TrialID=CTRI/2022/06/043481>.

The study was conducted in compliance with the ethical standards prescribed by the Clinical Trial Committee, which functions as an authorized Ethics Committee. All research procedures involving human participants were reviewed and approved by the Ethics Committee of Kurukshetra University, Kurukshetra, Haryana, India. The study adhered strictly to ethical principles governing human research throughout its execution.

Data collection

A predesigned and pretested questionnaire-cum-interview schedule was utilized to collect information regarding sociodemographic characteristics, awareness and attitudes towards perimenopause, nutritional status, food habits and dietary patterns and various perimenopausal symptoms categorized under physical, psychosomatic, vasomotor, psychological, sexual, urogenital symptoms, and others.

Assessment of body measurements

Anthropometric data, such as weight, height and the circumferences of the waist and hip, were systematically documented. Following this, the body mass index (WHO, 2004) ^[19] and waist-to-hip ratio (WHO, 2008) ^[20] were calculated.

Statistical analysis:

Data collected was organized, compiled and analysed in terms of mean and percentage.

Findings and Discussion

The study involved 90 perimenopausal women. Table 1 presents their socio-demographic characteristics. Approximately half of the participants were aged between 41 to 45 years, one-third were between 46 and 50 years old and the remaining 21 percent were between 36 and 40 years old. Half of the subjects were Hindu, while the rest were Sikh (49%). More than half of the subjects were postgraduates, followed by graduates and those with higher secondary education. Three-fourths of the subjects were housewives, while one-fourth were employed. Marital status showed that 88 percent were married, 3 percent were widows and 8 percent were divorced. Lastly, 80 percent of the participants belonged to nuclear families and 20 percent were from joint families

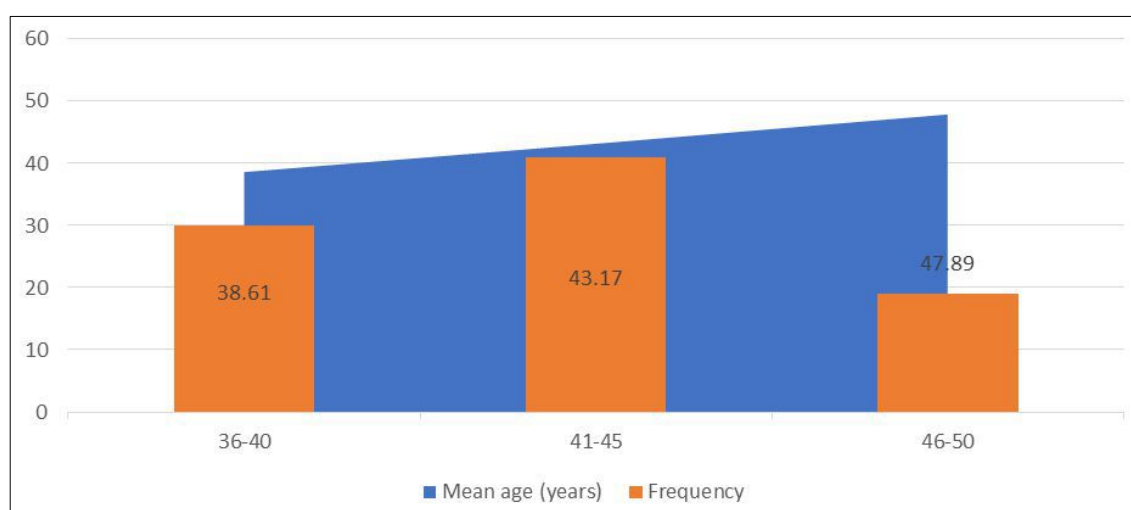
Table 1: Sociodemographic characteristics of the subjects

	Frequency (n = 90)	Percentage (%)
Age of women (in years)		
36-40	19	21
41-45	41	46
46-50	30	33
Religion		
Hindu	46	51
Sikh	44	49
Education		
Higher Secondary	10	11
Graduate	32	36
Postgraduate	48	53
Occupation		
Working Women	22	24
Housewife	68	76
Marital Status		
Married	79	88
Widow	3	3
Divorced	8	8
Type of Family		
Nuclear	72	80
Joint	18	20

Table 2 shows the percentage distribution of women according to their age at perimenopause. It is evident that 33 percent of the women experienced perimenopause between 36 and 40 years of age, with a mean age of 38.61 ± 1.33 years. Meanwhile, 46 percent experienced perimenopause between 41 and 45 years, with a mean age of 43.17 ± 1.28 years, and 21 percent experienced it between 46 and 50 years, with a mean age of 47.89 ± 1.48 years (Figure 1).

Table 2: Perimenopausal age of the subjects

Age group (in years)	Mean age (years)	Frequency	Percentage (%)
36-40	38.61 ± 1.33	19	21
41-45	43.17 ± 1.28	41	46
46-50	47.89 ± 1.48	30	33
36-50	41.8 ± 3.91	90	100

**Fig 1:** Mean perimenopausal age of the subjects

The mean perimenopausal age reported in this study was 41.8 ± 3.91 years. The exact age at which perimenopause occurs varies across populations.

Table 3 of the study, which surveyed 90 subjects, presents findings on awareness and attitudes regarding perimenopausal symptoms. Among the participants, 27 percent (n = 24) were aware of perimenopause, while the majority (73%) lacked awareness (Figure 2). Insufficient knowledge often leads to inadequate coping strategies and

poor healthcare-seeking behaviours. This is evident in a Chinese study where only a small percentage of women sought medical care for menopausal symptoms (You *et al.*, 2024) [12]. Research emphasizes the importance of education and support in effectively managing perimenopausal symptoms, suggesting that increased awareness could significantly enhance women's quality of life (Manisha, 2024; Soumya *et al.*, 2024) [5, 21].

Table 3: Awareness and attitude regarding perimenopause symptoms among subjects

	Frequency n = 90	Percentage (%)
Awareness about perimenopause		
Aware	24	27
Not aware	66	73
Attitude towards perimenopause		
Positive	18	67
Negative	9	33

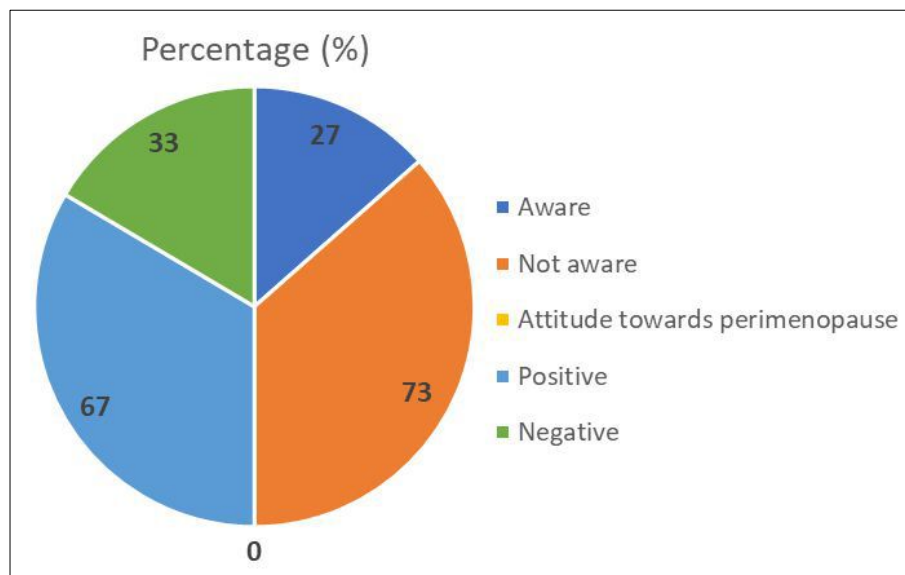
**Fig 2:** Percentage of awareness and attitude regarding perimenopause symptoms among subjects

Table 4 depicts the nutritional status of the respondents based on Body Mass Index (BMI) and Waist Hip Ratio (WHR). Comparisons were made using the BMI classification table (WHO, 2004) [19] and WHR table (WHO, 2008) [20]. The data revealed that only 14 percent of the respondents had a normal BMI. Among the remaining 86 percent, 2 percent were underweight. Of the rest, 54 percent

were overweight, 16 percent were classified as grade I obese, 20 percent as grade II obese, and 4 percent as grade III obese. When classified according to WHR, the majority of the subjects (92%) were obese. These findings underscore the prevalent obesity trends among the study population, highlighting the need for targeted interventions in managing nutritional health.

Table 4: Nutritional status of respondents

Body mass index	Frequency n = 90	Percentage (%)
Underweight (<18.5)	2	2
Normal (18.5 - 24.9)	13	14
Overweight (>25)	48	54
Obese grade I (30.0 - 34.9)	14	16
Obese grade II (35.0 - 39.9)	9	10
Obese grade III (>40.0)	4	4
Waist hip ratio		
Normal (< 0.80)	7	8
Obese (> 0.80)	83	92

Source: WHO, 2004 and WHO, 2009 [19]

Table 5 investigated the food habits and dietary patterns of 90 respondents. More than two-thirds of the respondents (73%) were vegetarian, while approximately one-fifth (19%) were non-vegetarian and the remaining 8 percent were ova-vegetarian. Regarding daily meal frequency, about two-thirds (70%) consumed two meals a day, whereas the other third (30%) had three meals. When it came to skipping meals, roughly one-quarter (24%) did so regularly, while three-quarters (76%) skipped meals occasionally.

Among those who skipped meals, around one-seventh (14%) did so daily, more than three-quarters (77%) skipped meals 2-3 times a week and about one-tenth (9%) skipped meals weekly. Breakfast was the most frequently skipped

meal, with two-thirds (66%) skipping it, followed by dinner (20%) and lunch (14%). The data reveals that breakfast is the most frequently skipped meal, with a significant portion of individuals skipping it daily or multiple times a week, highlighting the need for interventions to promote regular breakfast consumption and address the associated health and lifestyle consequences.

The primary reasons for skipping meals included lack of time (79%), dieting (17%), and absence of company (4%). A significant majority, over four-fifths (82%), reported fasting regularly, with the frequency being monthly for more than half (53%), weekly for nearly one-third (32%), and fortnightly for 15 percent of respondents.

Table 5: Food habits and dietary pattern of the respondents

Particulars	Categories	Frequency (N = 90)	Percentage (%)
Food habit	Vegetarian	66	73
	Non vegetarian	17	19
	Ova vegetarian	7	8
Meals in a day	Two	63	70
	Three	27	30
Skipping of meals	Regular	22	24
	Skipped	68	76
Frequency of skipping meals	Daily	13	14
	2-3 times a week	69	77
	Weekly	8	9
Meal most skipped	Breakfast	59	66
	Lunch	13	14
	Dinner	18	20
Reason for skipping meals	Lack of time	71	79
	Dieting	15	17
	No company	4	4
Keeping fast	Yes	74	82
	No	16	18
Frequency of fasting	Weekly	24	32
	Fortnightly	11	15
	Monthly	39	53

Table 6 of the study examined the prevalence of perimenopausal symptoms among the subjects, revealing a wide range of physical, psychosomatic, vasomotor, psychosocial, sexual and urogenital issues. Among the physical symptoms, 89 percent of the participants reported a decrease in strength and stamina, while 76 percent experienced aching muscles and joints. Psychosomatic symptoms were also prevalent, with 86 percent reporting disruptions in sleep and 77 percent experiencing mood swings.

Vasomotor symptoms were prevalent among the respondents, with 76 percent experiencing hot flashes and 91 percent reporting sweating. Psychosocial symptoms were notably high, with 86 percent of the participants reporting

anxiety, 95 percent feeling depressed and 91 percent experiencing irritability. Sexual symptoms included changes in sexual desire (57%) and avoidance of intimacy (31%). Urogenital symptoms were also reported, with 41 percent experiencing vaginal dryness and 52 percent having bladder problems. Additionally, 56 percent of the respondents reported heart discomfort (Figure 3)

Sexual and urogenital symptoms, such as decreased sexual desire and vaginal dryness, align with findings (Taziki *et al.*, 2024) ^[22] from a Middle Eastern study, where 71.3 percent of women reported sexual problems. These data underscore the multifaceted nature of perimenopausal symptoms and highlight the need for comprehensive care and support during this transitional phase

Table 6: Prevalence of perimenopausal symptoms among subjects

Symptoms	Frequency	Percentage
Physical		
Decreased in strength/stamina	80	89
Aching muscles and joints	68	76
Psychosomatic		
Disruptions in sleep	77	86
Mood swings	69	77
Vasomotor Symptoms		
Hot Flashes	70	76
Sweating	82	91
Psychosocial		
Anxiety	77	86
Depressed	86	95
Irritability	82	91
Sexual		
Changes in sexual desire	51	57
Avoids intimacy	29	31
Urogenital		
Vaginal dryness	37	41
Bladder problems	47	52
Others		
Heart discomfort	51	56

*Multiple responses

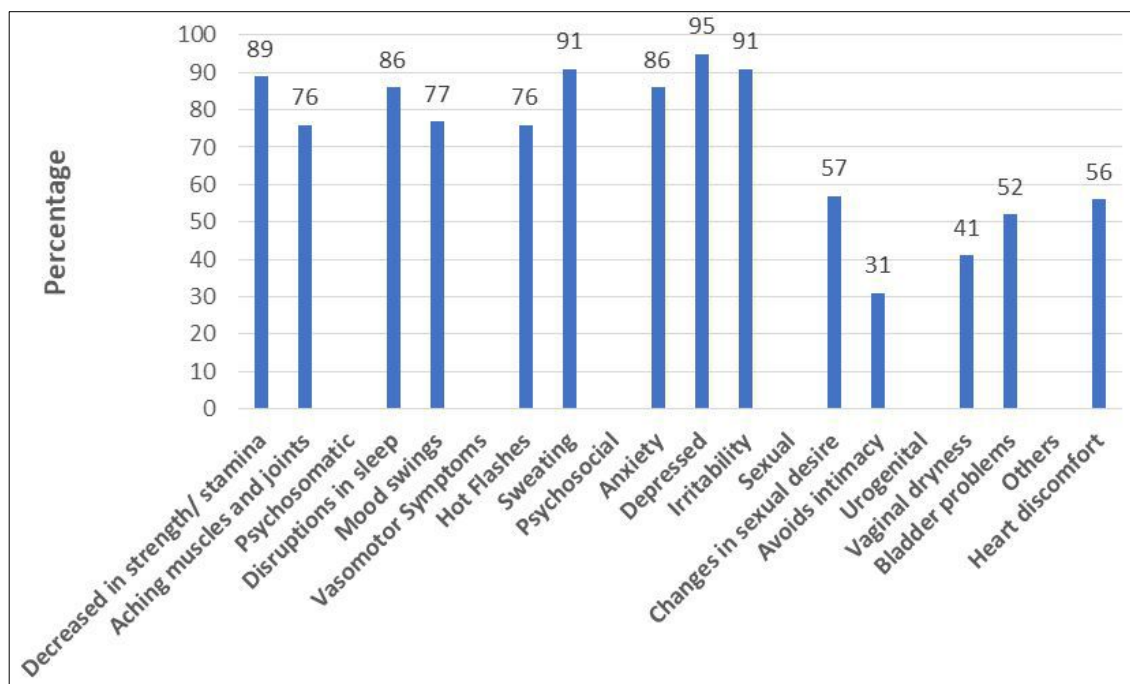


Fig 3: Percentage of perimenopausal symptoms

Conclusion

The lack of awareness surrounding perimenopause highlights a crucial gap in knowledge that must be addressed through targeted education and improved healthcare support. Enhancing understanding of perimenopause can significantly improve women's quality of life during this transition, benefiting not only individuals but also their families and communities. Despite the widespread prevalence of symptoms such as hot flashes, mood changes, and joint pain, many women report limited knowledge about menopause management, emphasizing the urgent need for accessible, evidence-based healthcare services and educational resources¹. Implementing comprehensive educational programs and accessible healthcare services tailored to perimenopausal women is essential, as these initiatives can improve symptom management and promote healthier lifestyle choices. The lack of open discussions and inadequate guidance from healthcare professionals, particularly regarding symptoms affecting sexual health, underscores the need for enhanced medical education and training (Simic *et al.*, 2024) ^[23]. A biopsychosocial approach that integrates both pharmacological and non-pharmacological strategies such as cognitive behavioural therapy, yoga, and mindfulness has shown potential in alleviating symptoms like hot flashes, depression, and anxiety, ultimately improving overall well-being (Evans *et al.*, 2024) ^[10]. Additionally, health coaching interventions have demonstrated effectiveness in enhancing self-management abilities and satisfaction with healthcare services (Wan *et al.*, 2024) ^[24].

Furthermore, incorporating contraceptive consultations into perimenopausal care can help manage symptoms while reducing the risk of unplanned pregnancies, ensuring a more individualized approach to treatment (Belcher *et al.*, 2024) ^[25]. The need for culturally sensitive and personalized care is particularly evident among women from diverse backgrounds, as healthcare systems often fail to accommodate non-Western populations, exacerbating barriers to effective management (Kirchengast, 2024) ^[26].

Online communities have emerged as valuable platforms for women to share experiences and coping strategies, yet many still feel unprepared for the intensity and duration of perimenopausal symptoms. This highlights the importance of bridging knowledge gaps through structured education, healthcare support and proactive symptom management (Shepherd *et al.*, 2024) ^[27]. By integrating education, medical support, and diverse treatment options, a more holistic and inclusive approach to perimenopausal care can be achieved. Addressing these gaps through comprehensive healthcare strategies will not only enhance the quality of life for perimenopausal women but also contribute to broader societal well-being (Manisha, 2024; Evans *et al.*, 2024; Simic *et al.*, 2024; Kirchengast, 2024; Shepherd *et al.*, 2024) ^[5, 10, 23, 26, 27].

Recommendations

Increasing awareness and education through comprehensive programs is crucial, as these initiatives have been shown to improve knowledge, alleviate symptoms, and enhance overall well-being by providing accurate and accessible information on perimenopause (McFeeters *et al.*, 2024) ^[28]. Strengthening healthcare support by establishing specialized clinics and training healthcare providers is vital, as nurses and other professionals play a key role in counselling and guiding women through this transition with evidence-based care (Flanagan & Fantasia, 2024) ^[29]. In addition, non-pharmacological interventions including regular exercise, a balanced diet, clinical yoga, and mindfulness-based cognitive therapy have been empirically supported to reduce symptoms and improve quality of life (Evans *et al.*, 2024; Abd Elmoneem *et al.*, 2024) ^[10, 30].

For women experiencing severe symptoms, pharmacological options such as hormonal contraceptives and menopausal hormone therapy should be considered based on individual risk profiles and preferences, as these treatments can provide effective relief (Flanagan & Fantasia, 2024) ^[29]. Addressing mental health is also essential, with counselling and cognitive behavioural therapy for insomnia playing a crucial role in psychological well-being during menopause

(Evans *et al.*, 2024) ^[10]. Encouraging research and innovation in new treatments and management strategies will further improve care options. Simultaneously, strengthening community and family support through social programs can foster greater understanding and assistance within households (Manisha, 2024) ^[5]. Finally, policy reforms ensuring comprehensive insurance coverage and workplace accommodations for women experiencing severe perimenopausal symptoms are critical to creating a more supportive environment that enhances their overall quality of life (Evans *et al.*, 2024) ^[10].

Conflicts of interest: The authors have no conflicts of interest.

References

- Kalita K, Raina D, Mall P. The basics of perimenopause. *Advances in Medical Technologies and Clinical Practice Book Series*. 2024;1-25. doi:10.4018/979-8-3693-2342-7.ch001.
- Srivastava S, S S. Perimenopause: review article. *J Gynaecol Obstet Res*. 2024;2:13. doi:10.61440/jgor.2024.v2.13.
- Bagga S, Tayade S, Lohiya NK, Tyagi A, Chauhan A. Menopause dynamics: from symptoms to quality of life, unraveling the complexities of the hormonal shift. *Multidisciplinary Reviews*. 2024;8(2):2025057. doi:10.31893/multirev.2025057.
- Joffe H, de Wit AE, Coborn JE, Crawford SL, Freeman MP, Wiley A, *et al.* Impact of estradiol variability and progesterone on mood in perimenopausal women with depressive symptoms. *Journal of Clinical Endocrinology and Metabolism*. 2020;105(3). doi:10.1210/clinem/dgz181.
- Manisha B. Perimenopausal symptoms and its coping. *International Journal of Science and Research*. 2024;13(10):221-223. doi:10.21275/sr24421175145.
- Ibeachu CP, Uahomo PO. Quality of life in menopausal women: effects of sociodemographic factors and symptoms. *South Asian Research Journal of Medical Sciences*. 2024;6(5). doi:10.36346/sarjms.2024.v06i05.006.
- Andrews R, Lacey A, Bache K, Kidd EJ. The role of menopausal symptoms on future health and longevity: a systematic scoping review of longitudinal evidence. *Maturitas*. 2024;190:108130. doi:10.1016/j.maturitas.2024.108130.
- Dar SA, Wani ZA, Bhat BA, Sheikh S, Nabi J, Khanam A, *et al.* Anxiety and depression in menopausal transition: a hospital-based study from Kashmir. *Medical Journal of Dr DY Patil Vidyapeeth*. 2020;13(1):37. doi:10.4103/mjdrdypu.mjdrdypu_68_19.
- Johnson AR, George M, Goud BR, Sulekha T. Screening for mental health disorders among pregnant women availing antenatal care at a government maternity hospital in Bengaluru City. *Indian Journal of Psychological Medicine*. 2018;40(4):343-348. doi:10.4103/IJPSYM.IJPSYM_41_18.
- Evans S, Van Niekerk L, Orellana L, O'Shea M, Druitt M, Jones S, *et al.* The need for biopsychosocial menopause care: a narrative review. *Menopause*. 2024. doi:10.1097/gme.0000000000002441.
- Siusiuka VH, Vizir VA, Serhienko MY, Demidenko OV, Deinichenko OV. Perimenopause period and menopause: cardiovascular and metabolic risks. *Zaporizhzhia Medical Journal*. 2024;26(5):424-429. doi:10.14739/2310-1210.2024.5.303438.
- You Y, Lin L, Yu Q. Exploring menopausal symptoms, attitudes, and behaviors among menopausal women in China: an online research perspective. *Menopause*. 2024. doi:10.1097/gme.0000000000002428.
- Umamaheswari V, Anitha J. A study to assess the prevalence of menopausal symptoms among perimenopausal women in urban community, Coimbatore, Tamil Nadu. *Global Journal for Research Analysis*. 2024;15-17. doi:10.36106/gjra/7300672.
- Kuruvilla SE, Sagare SS. An analysis of psychological issues during menopause and its integrative management. *Journal of Ayurveda and Integrated Medical Sciences*. 2024;8(12):101-104. doi:10.21760/jaims.8.12.14.
- Siusiuka VG, Sergienko MY, Pavliuchenko MI, Demidenko O, Deinichenko O, Onopchenko S. Short- and long-term impact of vasomotor symptoms in menopause and modern approaches to their correction. *Reproductive Health of Woman*. 2024;4. doi:10.30841/2708-8731.4.2024.306540.
- Yingngam B. Perimenopause. *Advances in Medical Technologies and Clinical Practice Book Series*. 2024;26-69. doi:10.4018/979-8-3693-2342-7.ch002.
- Vohra A, Kaur TJ. Transforming perimenopausal health: nutritional and movement-based interventions. *ShodhKosh: Journal of Visual and Performing Arts*. 2024;5(4):288-300. doi:10.29121/shodhkosh.v5.i4.2024.1945.
- Vohra A, Kaur TJ. Management of perimenopausal symptoms. *European Chemical Bulletin*. 2023;12(Special Issue 10):2226-2231.
- World Health Organization Expert Consultation. Appropriate body mass index for Asian populations and its implications for policy and intervention strategies. *Lancet*. 2004;363:157-163.
- World Health Organization. Waist circumference and waist-hip ratio: report of a WHO expert consultation. Geneva: World Health Organization; 2008.
- Soumya A, Nageswaran K, Purohit N. Assess perimenopausal symptoms among women. *Journal of Preventive Medicine and Holistic Health*. 2024;10(1):19-23. doi:10.18231/j.jpmmh.2024.006.
- Taziki M, Borzu ZA, Zarvekanloo S, Jahanfar S, Rahimi Z, Shirzadi S. Investigating the frequency and intensity of menopausal symptoms and contributing factors in postmenopausal women in a Middle Eastern nation. *BMC Women's Health*. 2024;1(3):161-169. doi:10.34172/bshj.15.
- Simić Stanojević I, Piatt J, Herbenick D, Stanojević Č, Shields T, Harnoy T, *et al.* She said, "Really, you're just going to have to suffer through it": the lack of discussion of perimenopause between women and healthcare professionals. *Journal of Sex and Marital Therapy*. 2024;1-16. doi:10.1080/0092623X.2024.2418545.
- Wan H, Yao WC, Ma J, Zhang X, Bai Y, Liu G. Support community perimenopausal women's health education: health coaching intervention study. 2024. doi:10.21203/rs.3.rs-4799930/v1.

25. Belcher R, Farmer L, Manley K. Tales from the clinic: contraception and perimenopause. *British Menopause Society Journal*. 2024. doi:10.1177/20533691241297189.
26. Kirchengast S. Menopause in a globalized world: a systematic literature review focusing on health problems associated with menopausal transition among women with a migration background. *Maturitas*. 2024;187:108045. doi:10.1016/j.maturitas.2024.108045.
27. Shepherd JA, Shiozawa A, Schild AL, Singh D, Mancuso S. Survey of patient experience and management of vasomotor symptoms due to menopause from the PatientsLikeMe community. *Menopause*. 2024. doi:10.1097/gme.0000000000002427.
28. McFeeters C, Pedlow K, McGinn D, McConnell K. A rapid review of menopausal education programmes. *Journal of Object-Oriented Programming*. 2024. doi:10.1007/s00737-024-01476-8.
29. Flanagan M, Fantasia HC. Comprehensive management of menopausal symptoms. *Nursing for Women's Health*. 2024;28(5):381-392. doi:10.1016/j.nwh.2024.04.007.
30. Abd Elmoneem HG, Khamis MA, Abbas AM. Effect of lifestyle modifications on improving women's perimenopausal symptoms. *Assiut Scientific Nursing Journal*. 2024. doi:10.21608/asnj.2024.309658.1882.