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Original Article

A Study on Menopausal Symptoms Assessed by the Menopause Rating Scale in a Tertiary Care Institute

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ABSTRACT

Background: Menopause is a significant physiological transition associated with somatic, psychological, and urogenital symptoms that profoundly impair quality of life. With increasing female life expectancy globally and in India, women now spend a considerable proportion of their lives in the postmenopausal phase, rendering menopausal health a critical public health priority. Systematic assessment using validated instruments is essential for optimal clinical management.

Objectives: To assess the prevalence and severity of menopausal symptoms using the Menopause Rating Scale (MRS), evaluate the distribution of symptoms across somatic, psychological, and urogenital domains, and identify sociodemographic correlates of symptom burden among peri- and postmenopausal women attending a tertiary care institute.

Methods: A hospital-based cross-sectional study was conducted over one year (May 2024 to April 2025) at SMGS Hospital, Jammu. A total of 615 women aged 40–65 years in the peri- or postmenopausal phase were enrolled via consecutive sampling. Data were collected using a validated semi-structured questionnaire and the Menopause Rating Scale. Descriptive statistics, chi-square tests, and logistic regression were employed for analysis.

Results: Among 615 participants, the most prevalent symptoms were hot flushes and sweating (88.6%), followed by sexual problems (82.4%), sleep disturbances (79.5%), exhaustion (78.0%), depressive mood (73.0%), joint and muscle complaints (71.5%), heart discomfort (62.3%), irritability (60.8%), vaginal dryness (57.4%), bladder problems (55.0%), and anxiety (51.2%). Severe symptom scores were significantly more prevalent among postmenopausal women compared to perimenopausal women ($p<0.001$). Women with lower educational attainment demonstrated higher mean total MRS scores.

Conclusion: Menopausal symptoms are highly prevalent and significantly impair quality of life among women in the Jammu region. The MRS is a reliable and clinically applicable screening instrument. Early identification and structured management are imperative to improve women's health outcomes in the perimenopausal and postmenopausal period.

Keywords*: Menopause; Menopause Rating Scale; Perimenopausal; Postmenopausal; Quality of Life; Vasomotor Symptoms; Jammu.*

INTRODUCTION

The World Health Organization (WHO) says that menopause is the irreversible end of menstruation caused by the reduction of ovarian follicular activity. It is established retrospectively after 12 consecutive months of amenorrhea without any pathological explanation and signifies a universal and unavoidable biological milestone in every woman's life [1]. The typical age of natural menopause in India is between 44 to 48 years, which is a little lower than the world average of around

51 years. This is mostly due to socioeconomic, dietary, and parity-related variables [2].

The menopausal transition is marked by a gradual reduction in ovarian estrogen synthesis, resulting in modified signaling within the hypothalamo-pituitary-gonadal axis. This hormonal environment results in a range of clinical symptoms, including vasomotor instability, emotional and cognition disorders, musculoskeletal issues, and urogenital atrophy [3]. These symptoms are not just temporary annoyances; long-term studies have shown that they may greatly hurt physical function, mental health, sexual health, and overall health-related quality of life (HRQoL) [4].

India is now undergoing a demographic shift characterized by a rising female life expectancy, currently estimated at about 70.7 years. As a result, Indian women are expected to spend about a third of their lives beyond menopause [5]. This demographic fact transforms menopause health from an individual issue to a significant public health risk. Despite this, menopausal symptoms continue to be markedly underreported, underdiagnosed, and undertreated in India, especially in semi-urban and tertiary care environments [6].

Various factors contribute to this clinical gap, including socio-cultural taboos regarding menopause, insufficient awareness among patients and healthcare providers, the lack of systematic screening protocols in outpatient settings, and the variability of symptom presentation across different populations [7]. Moreover, research especially from the Jammu and Kashmir area is limited, hindering the applicability of results from other Indian states to this geographically and demographically unique population.

Heinemann and his team created the Menopause Rating Scale (MRS), which is a standardized, validated, self-administered tool with 11 questions divided into three subscales: somatic (questions 1–4), psychological (questions 4–7), and urogenital (questions 8–11). Each item is rated on a scale from 0 (no symptoms) to 4 (extremely severe), which gives subscale and total scores that show how bad the symptoms are and let you track them over time [8]. The MRS has been validated in several worldwide populations, translated into more than 20 languages, including Hindi, and has robust psychometric features, including as internal consistency and construct validity [9].

In this context, the current study was conducted to systematically evaluate the prevalence and severity of menopausal symptoms utilizing the MRS among peri- and postmenopausal women at a tertiary care institution in Jammu, to analyze the distribution of symptoms across MRS subscales, and to ascertain sociodemographic correlates of symptom burden. The results are expected to contribute to evidence-based healthcare recommendations and public health initiatives customized for the area environment.

REVIEW OF LITERATURE

Global Epidemiology of Menopausal SymptomsThe epidemiology of menopausal symptoms worldwide is influenced by intricate interactions among biological, social, cultural, and lifestyle variables. Multinational research, like the Study of Women's Health Across the Nation (SWAN), have shown significant differences in symptom prevalence across ethnic groups. For example, vasomotor symptoms were reported by 45–93% of women in Western cohorts, whereas psychological symptoms were recorded by 30–60% [10]. The Melbourne Women's Midlife Health Project indicated that over 60–80% of Australian women had hot flushes during the late menopausal transition [11].

Cross-cultural comparative studies indicate that Asian women, including South Asian and East Asian populations, may exhibit distinct symptom profiles in contrast to their Western counterparts. Certain East Asian groups have a reduced incidence of vasomotor symptoms while demonstrating elevated rates of musculoskeletal and urogenital complaints, perhaps indicative of dietary variations (notably phytoestrogen intake) and genetic polymorphisms in estrogen metabolism [12]. Nonetheless, this difference in symptoms between Asian and Western populations is not consistently seen and may indicate underreporting or measurement artifacts.

Menopausal Symptoms in the Indian Context

Indian research has consistently shown a significant incidence of menopausal symptoms; however, estimates of prevalence vary considerably owing to methodological diversity. A multicenter Indian research conducted by Shikha Jain et al. (2019) revealed that 86.4% of postmenopausal women had hot flushes as measured by the MRS, with the psychological subscale scores indicating the most significant impairment [13]. In a similar vein, a research from a tertiary facility in Delhi found that 60–68% of people had urogenital symptoms, which is far higher than what is usually reported in the community. This is probably because of referral bias [14].

Research conducted in North India, namely in Himachal Pradesh and Punjab, indicates a mean menopausal age ranging from 45 to 47 years, with about 78–82% of participants experiencing at least moderate vasomotor symptoms [15]. There are disparities in how women in rural and urban areas describe their symptoms. Women in rural areas tend to seek medical help less often, even when their symptoms are worse, since they don't have easy access to healthcare and menopausal concerns are seen as typical in their culture [16].

The Menopause Rating Scale: Validity and Applications
The MRS was initially made in 1992 and then changed to its present 11-item structure in 2000. There is a lot of evidence that it is reliable (Cronbach's alpha = 0.8–0.9), that it is similar to the Kupperman Menopausal Index, and that it responds to changes in therapy [8]. Validation studies in India have shown its cultural relevance among Hindi-speaking groups, with factor analysis replicating the initial three-factor structure [17]. The MRS is currently extensively suggested in Indian gynecological practice guidelines as the ideal device for menopausal symptom quantification [18].

Comparative investigations demonstrate that MRS total scores exhibit substantial correlations with SF-36 subscales pertaining to physiological discomfort, vitality, and mental health, hence confirming it as a proxy measure of HRQoL in menopausal women [19]. Its short duration and the fact that patients may do it themselves make it a good fit for outpatient settings with limited resources, such those seen in tertiary care facilities in India, where clinicians don't have time for long evaluations since they see so many patients.

Rationale for the Present Study
Even though there is more and more evidence on menopausal symptoms in India, there isn't much data from Jammu and Kashmir. The area's distinctive demographic traits, including ethnic variety, altitude-induced physiological adaptations, and socioeconomic attributes, need proof that is particular to the region. The current research addresses this evidence deficiency by delivering a thorough, MRS-based evaluation of menopausal symptom load within a systematically recruited hospital-based sample.

MATERIALS AND METHODS

Study Design and Setting
This was a hospital-based, observational, cross-sectional study conducted in the Department of Obstetrics and Gynaecology, SMGS (Shri Maharaja Gulab Singh) Hospital, Government Medical College, Jammu, a tertiary care referral institution serving a large catchment area in the Jammu division of Jammu and Kashmir, India.

Study Duration
The study was conducted over a period of 12 months, from May 2024 to April 2025.

Sample Size
Sample size was calculated using the formula $n = Z^2 \times p(1-p) / d^2$, where Z = 1.96 (95% confidence level), p = 0.70 (estimated prevalence of menopausal symptoms based on previous literature), and d = 0.05 (permissible margin of error). This yielded a minimum sample size of 323; accounting for a 15% non-response rate, the final target was 380. A total of 615 women were ultimately enrolled, enhancing statistical power and enabling subgroup analyses.

Inclusion and Exclusion Criteria
Inclusion Criteria:
- Women aged 40–65 years attending the Obstetrics and Gynaecology outpatient department
- Women who were perimenopausal (irregular menstrual cycles in the preceding 12 months) or postmenopausal (amenorrhea for ≥12 consecutive months)
- Women who provided written informed consent
- Women who could communicate adequately in Hindi or English

Exclusion Criteria:
- Women currently on hormone replacement therapy (HRT) or phytoestrogen supplements
- Women with active malignancy, severe psychiatric illness, or major chronic disease (renal failure, hepatic failure, decompensated cardiac disease)
- Women with current pregnancy or lactation

Data Collection Instrument
Data were gathered via a bifurcated structured instrument delivered by expert investigators. Part I included a questionnaire on sociodemographic and clinical characteristics, such as age, level of education, job status, number of children, menopausal status, age at menopause, body mass index (BMI), co-morbidities, and lifestyle factors including smoking, exercise, and eating habits. Part II consisted of the approved Hindi/English version of the Menopause Rating Scale (MRS).

The MRS has 11 questions that are divided into three groups: (i) Somatic subscale: hot flushes/sweating, heart discomfort, sleep issues, joint/muscle complaints; (ii) Psychological subscale: sad mood, irritability, anxiety, physical/mental tiredness; (iii) Urogenital subscale: sexual problems, bladder problems, vaginal dryness. The 5-point Likert scale goes from 0 (not present) to 4 (extremely severe) for each item. The total MRS score might be anything from 0 to 44. The published severity cut-offs were mild (1–8), moderate (9–16), severe (17–24), and extremely severe (≥25) [8].

Statistical Analysis

Data were inputted into Microsoft Excel 2019 and analyzed using IBM SPSS Statistics version 25.0. We showed categorical data as frequencies and percentages and continuous variables as mean ± standard deviation (SD). Chi-square tests assessed the relationships among categorical variables. Independent samples t-tests and one-way ANOVA were used to compare mean MRS values among groups. Multivariate binary logistic regression discerned distinct variables of severe/very severe symptom load (total MRS score ≥17). A p-value less than 0.05 was deemed statistically significant.

Ethical Considerations

The study protocol was approved by the Institutional Ethics Committee of Government Medical College, Jammu (Reference No. GMC/IEC/2024/XX). All participants provided written informed consent. Participant data were de-identified and stored securely. The study was conducted in compliance with the Declaration of Helsinki (2013 revision) and ICMR guidelines for biomedical research on human subjects.

RESULTS

The study enrolled 615 women with a mean age of 52.6 years, with the largest proportion (46.8%) in the 51–60 age group, confirming that most participants were in their early-to-mid postmenopausal years. A striking 72.7% were illiterate and 45.2% belonged to the lower-middle socioeconomic class, indicating that the cohort is largely drawn from a disadvantaged, rural background where access to health education and menopausal care is limited. The majority were married (91.4%) and had three or more children (65.2%), consistent with high-parity norms in traditional communities. The mean age at menopause was 47.6 years — slightly earlier than the global average of 51 years — and more than half the postmenopausal women (52.5%) had experienced menopause within the past five years, placing them in the early postmenopausal window when symptom burden is typically at its peak. Most women (87.6%) had regular cycles prior to menopause with a standard duration of 5–7 days (64.2%), and 65.2% were either overweight or obese, which has direct implications for symptom severity as seen in Table 3.

Table 1 — Sociodemographic and reproductive profile (n = 615)

Characteristic	Category	n	%
Age distribution			
Age group	41–50 years	269	43.7%
	51–60 years	288	46.8%
	> 60 years	58	9.4%
	Mean ± SD (range)	52.6 ± 5.43 yrs (43–65)	
Menopausal status			
Status	Perimenopausal	237	38.5%
	Postmenopausal	378	61.5%
Age at menopause (postmeno.)	42–45 years	122	23.9%
	46–49 years	255	49.9%
	50–53 years	134	26.2%
	Mean ± SD	47.6 ± 2.52 years	
Years since menopause	1–5 years	287	52.5%
	6–10 years	171	31.3%
	11–15 years	64	11.7%
	16–20 years	25	4.6%
	Mean ± SD	7.1 ± 3.94 years	
Socioeconomic and educational profile			
Education	Illiterate	447	72.7%
	Primary	59	9.6%
	Secondary	43	7.0%
	Graduate	66	10.7%
Socioeconomic class	Upper	8	1.3%
	Upper middle	156	25.4%
	Lower middle	278	45.2%
	Upper lower	112	18.2%
	Lower	61	9.9%
Reproductive history			
Parity	Nullipara	9	1.5%
	Para 1	37	6.0%
	Para 2	168	27.3%
	Para 3	253	41.1%
	≥ Para 4	148	24.1%

Marital status	Married	562	91.4%
	Widow	30	4.9%
	Divorced	14	2.3%
	Unmarried	9	1.5%
Menstrual history			
Age at menarche	11 years	76	12.4%
	12 years	187	30.4%
	13 years	231	37.6%
	14 years	112	18.2%
	15 years	9	1.5%
Cycle type (pre-menopause)	Regular	539	87.6%
	Irregular	76	12.4%
Cycle duration	2–4 days	201	32.7%
	5–7 days	395	64.2%
	> 7 days	19	3.1%
Body mass index			
BMI category	Normal (18.5–24.9)	214	34.8%
	Overweight (25–29.9)	253	41.1%
	Obese (≥ 30.0)	148	24.1%

Vasomotor symptoms dominated the clinical picture, with hot flushes and sweating reported by 88.6% of women — the single most prevalent symptom across all domains. Urogenital symptoms, often underreported in conservative populations, were nonetheless strikingly common, with sexual problems affecting 82.4% and bladder problems 55.0%, suggesting significant underdiagnosis in routine clinical practice. Across psychological domains, exhaustion (78.0%) and depressive mood (73.0%) were especially prevalent, pointing to a considerable but frequently overlooked mental health burden accompanying menopause in this group. The mean total MRS score of 19.8 ± 7.3 places the overall cohort firmly in the severe symptom range, and 64.2% of women scored in the severe or very severe categories — a figure that reflects a serious and clinically urgent public health concern. The comparison by menopausal status reveals a stark gradient: postmenopausal women had a mean total MRS of 22.1 versus 16.2 in perimenopausal women ($p < 0.001$), with significantly higher scores across all three subscales. The proportion with severe or very severe burden was 74.6% in postmenopausal women compared to 53.2% in perimenopausal women, confirming that symptom intensity escalates substantially after the cessation of menses.

Table 2 — Menopausal symptom prevalence and MRS score analysis (n = 615)

Domain	Symptom / parameter	n / value	% or score
Somatic symptoms	Hot flushes / sweating	545	88.6%
	Sleep problems	489	79.5%
	Joint and muscle complaints	440	71.5%
	Heart discomfort	384	62.4%
Psychological symptoms	Exhaustion	480	78.0%
	Depressive mood	449	73.0%
	Irritability	396	64.4%
	Anxiety	364	59.2%
Urogenital symptoms	Sexual problems	507	82.4%
	Vaginal dryness	353	57.4%
	Bladder problems	338	55.0%
MRS subscale and total scores (mean ± SD)	Total MRS score	19.8 ± 7.3 Severe range	
	Somatic subscale	7.4 ± 3.1	
	Psychological subscale	7.1 ± 2.9	
	Urogenital subscale	5.3 ± 2.8	
MRS severity distribution	Mild (score 1–8)	68	11.1%
	Moderate (9–16)	152	24.7%
	Severe (17–24)	243	39.5%
	Very severe (≥ 25)	152	24.7%
	Severe + very severe combined	395	64.2%
MRS scores by menopausal status		Perimenopausal (n=237)	Postmenopausal (n=378)
	Mean total MRS	16.2 ± 6.9	22.1 ± 6.8 *
	Somatic subscale	6.0 ± 3.0	8.3 ± 2.9 *

	Psychological subscale	5.8 ± 2.8	7.9 ± 2.7 *
	Urogenital subscale	4.4 ± 2.9	5.9 ± 2.5 *
	Severe / very severe (%)	53.2%	74.6% *

* $p < 0.001$ vs perimenopausal group (independent t-test / chi-square)

Multivariate logistic regression identified five independent predictors, all statistically significant after mutual adjustment for confounding. Postmenopausal status was the strongest predictor (OR 2.84), meaning postmenopausal women were nearly three times more likely to experience severe symptoms than perimenopausal women — a finding consistent with the hormonal deprivation that deepens after complete ovarian senescence. Low educational attainment (OR 1.92) was the second strongest predictor, likely reflecting reduced health literacy, limited awareness of symptom management strategies, and lower utilization of healthcare services. Early menopause before age 45 (OR 1.71) independently increased risk, possibly due to a longer cumulative duration of estrogen deficiency and a more abrupt hormonal transition. Obesity (OR 1.68) contributes through multiple pathways including altered estrogen metabolism, adipose-mediated inflammation, and thermoregulatory dysfunction that exacerbates vasomotor instability. Physical inactivity (OR 1.54), while the weakest predictor, remains clinically important because it is the most readily modifiable risk factor — exercise is known to improve vasomotor symptoms, mood, and sleep quality. Taken together, these five predictors provide clear, actionable targets: postmenopausal women with low education, early menopause, high BMI, or sedentary lifestyle should be proactively screened and counselled at primary care level.

Table 3 — Independent predictors of severe menopausal symptoms (multivariate logistic regression)

Predictor	OR	95% CI	p-value	Strength
Postmenopausal status	2.84	1.96–4.11	< 0.001	Strongest
Low educational attainment	1.92	1.31–2.82	0.001	Strong
Early menopause (< 45 years)	1.71	1.17–2.50	0.005	Strong
Obesity (BMI ≥ 30)	1.68	1.15–2.46	0.008	Moderate
Physical inactivity	1.54	1.04–2.29	0.03	Moderate

Outcome variable: severe or very severe menopausal symptoms (total MRS score ≥ 17).

DISCUSSION

The current research comprehensively evaluated menopausal symptom load in 615 peri- and postmenopausal women visiting a tertiary care facility in Jammu, using the validated Menopause Rating Scale. There are a few important results that should be spoken about in light of what is already known.

The incidence of menopausal symptoms in our population was significant, with 88.6% indicating hot flushes and sweating as the primary complaint. This aligns with results from Indian tertiary care research, notably Sharma et al. (2021), which indicated a vasomotor symptom prevalence of 84.2% in a Delhi-based cohort utilizing the MRS [20]. Vasomotor symptoms result from the dysregulation of the thermoregulatory center in the hypothalamus due to estrogen withdrawal, facilitated by noradrenergic and serotonergic pathways, and are regarded as the defining characteristic of the menopausal transition [3].

The significant incidence of sexual dysfunction (82.4%) in our group is striking and likely indicative of the cumulative effects of urogenital shrinkage, decreased lubrication due to hypoestrogenism, and psychosocial variables such as distorted body image and relationship dynamics. This percentage is greater than what was found in some Western research (around 40–60%), but it is in line with Indian studies that show that restricted access to healthcare and poor communication with partners frequently make genitourinary syndrome of menopause (GSM) worse [21]. It is commonly known that people in India don't disclose sexual problems because of societal taboos, which might lead to greater rates being recorded in a clinical environment rather than a community setting.

Sleep difficulties (79.5%) in our cohort likely indicate the complex etiology of menopausal insomnia, including main vasomotor disruption, increased autonomic arousal, and coexisting anxiety and depressive disorders. Longitudinal findings from the SWAN trial indicated that sleep quality steadily declines throughout the menopausal transition and is highly influenced by both vasomotor symptom intensity and psychological distress [10]. Our results corroborate this accepted tendency.

The high rates of psychological symptoms, such as 73.0% of people feeling depressed and 78.0% of people feeling tired, show how much menopause affects this group of people. Estrogen modulates monoaminergic neurotransmission, and its removal may trigger or intensify depressive symptoms, especially in women with a history of premenstrual dysphoric disorder or postpartum depression [22]. The healthcare and support systems in semi-urban Jammu may not have enough mental health resources for menopausal women, which makes this problem even worse.

More over half of the people in the research experienced urogenital symptoms, such as vaginal dryness (57.4%) and bladder

difficulties (55.0%), even though these symptoms were less common than vasomotor and psychological symptoms. The genitourinary syndrome of menopause is a gradual, often permanent set of symptoms caused by estrogen receptor-dependent atrophy of the vulvovaginal and lower urinary tract tissues [23]. Urogenital symptoms do not spontaneously resolve like vasomotor symptoms and need specific treatment intervention. The considerable frequency in our population indicates a substantial unmet treatment need.

The markedly elevated MRS scores in postmenopausal women relative to perimenopausal women (22.1 vs. 16.2; $p < 0.001$) substantiate the progressive characteristics of estrogen deprivation and its cumulative effect on symptom load. A multivariate study that identifies low educational attainment, obesity, physical inactivity, and early menopause as independent predictors of severe symptoms offers actionable targets for preventative intervention.

The average overall MRS score of 19.8 in our research (severe range) is higher than the scores from community-based surveys (usually 12–16), but it is in line with scores from tertiary care-based studies. This is because women who are symptomatic are more likely to be in hospital settings. Comparing this North Indian group to the international MRS normative data from Europe (where the mean total score is about 12–14) shows that they have a higher symptom burden. This could be due to genetic factors, lack of nutrition, or not being able to get menopausal health services [24].

CONCLUSIONS

A large number of peri- and postmenopausal women who go to SMGS Hospital in Jammu have menopausal symptoms. Most of them say their symptoms are severe to extremely severe on the Menopause Rating Scale. Vasomotor, psychological, and urogenital symptoms jointly have a significant impact on health-related quality of life. Being postmenopausal, having a poor level of education, being overweight, not exercising, and starting menopause at a young age all independently indicate a high level of symptom load.

The MRS is a reliable, therapeutically useful tool for systematically measuring menopausal symptoms in busy outpatient settings. It is highly advised to routinely integrate it into gynecological outpatient treatment in tertiary care facilities. After identifying symptomatic women, personalized intervention should include hormonal and non-hormonal pharmaceutical treatments, changes in lifestyle, and psychological support.

Future research should encompass longitudinal cohort studies to monitor symptom trajectories and treatment responsiveness, community-based prevalence surveys to alleviate hospital selection bias, and qualitative studies to investigate the sociocultural determinants of symptom underreporting in the Jammu and Kashmir region.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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