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STUDY OF MENOPAUSAL SYMPTOMS IN URBAN WOMEN

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ABSTRACT

Background: Menopause is a natural biological transition characterized by the permanent cessation of menstruation due to ovarian follicular depletion and estrogen deficiency. The menopausal transition is often accompanied by somatic, psychological, and urogenital symptoms that can adversely affect women's health-related quality of life. With increasing life expectancy, women spend a substantial portion of their lives in the postmenopausal phase, making the assessment of menopausal symptoms a significant public health concern. **Methods:** A community-based cross-sectional study was conducted over six months among 200 urban women aged ≥40 years in Chandigarh, India. Perimenopausal and postmenopausal women were selected through simple random sampling. Data were collected through door-to-door visits using a structured sociodemographic questionnaire and the standardized Menopause Rating Scale (MRS), which assesses symptom severity across somatic, psychological, and urogenital domains. Data were analyzed using IBM SPSS Statistics version 29. Descriptive statistics summarized symptom prevalence and severity, while Chi-square and Mann–Whitney U tests assessed associations. A p-value <0.05 was considered statistically significant. **Results:** Among the participants, 71.5% were postmenopausal and 28.5% were perimenopausal. The mean age at menopause was 48.6 ± 3.11 years. Menopausal symptoms were predominantly of mild to moderate severity. Somatic symptoms were most common (66%), followed by psychological (60.75%) and urogenital symptoms (34.3%). Joint and muscular discomfort (81.5%) and hot flushes (73%) were the most frequent somatic symptoms. Physical and mental exhaustion (65%) was the most common psychological symptom, while vaginal dryness (37.5%) was the leading urogenital complaint. Psychological symptoms were significantly associated with age (p = 0.022), and somatic symptoms with duration of menopause (p = 0.029). Postmenopausal women had significantly higher psychological symptom scores. **Conclusion:** Menopausal symptoms were predominantly mild to moderate, with somatic and psychological symptoms being most common. Age and duration of menopause significantly influenced symptom severity, highlighting the need for targeted menopausal health interventions.

INTRODUCTION

Thus, menopause is a natural phase of aging characterized by estrogen deficiency and multidimensional health changes, necessitating comprehensive medical and psychosocial support. The World Health Organization (WHO) defines natural menopause as the permanent cessation of menstruation due to loss of ovarian follicular activity, diagnosed retrospectively after 12 consecutive months of amenorrhea without any pathological cause. Declining estrogen levels and follicular depletion are the key biological mechanisms underlying menopause.

The menopausal transition is often preceded by menstrual irregularities and is associated with several systemic changes, including increased cardiovascular risk, adverse alterations in body composition, loss of bone density leading to osteoporosis, and weakening of pelvic support structures, increasing the risk of pelvic organ prolapse.(1) Globally, women typically attain menopause between 45–55 years of age, marking the end of reproductive life and representing a natural phase in the aging continuum.(1). The average age at menopause in India, with least publication bias, is 46.6 years.(19)

Common menopausal symptoms include hot flushes and night sweats; menstrual irregularities progressing to cessation; urogenital symptoms such as vaginal dryness, dyspareunia, and incontinence; sleep disturbances; and psychological symptoms including mood changes, depression, and anxiety. According to the Indian Menopause Society, approximately 65 million Indian women above menopausal age currently experience menopausal symptoms, with wide individual variation in severity and impact on quality of life.(18)

According to the Stages of Reproductive Aging Workshop (STRAW) +10, menopause is classified into premenopause, perimenopause, and postmenopause based on menstrual patterns.(2) The mean age of menopause in India is 47.5 years, compared to 48.8 years in Western countries. (7)

With increasing life expectancy, women spend a substantial proportion of their lives in the postmenopausal stage. Menopause represents a significant biological and psychosocial transition, influenced by cultural, social, and familial factors, and the global population of postmenopausal women continues to rise.(1)

The Menopause Rating Scale (MRS) is a standardized health-related quality of life (HRQoL) instrument developed to assess the severity of menopausal symptoms and their impact. It comprises 11 items across three domains—psychological, somato-vegetative, and urogenital—with each symptom scored from 0 (none) to 4 (severe). The MRS allows symptom comparison across populations, over time, and before and after interventions. (4)

An Indian study using the MRS reported fatigue (92.9%) as the most common symptom, followed by headache (88.8%), joint and muscular discomfort (76.2%), exhaustion (60.9%), sleep disturbances (54.4%), depressive mood (37.3%), irritability (36%), vaginal dryness (36%), hot flushes (35.8%), and anxiety (34.5%).(5)

The present study aims to assess the prevalence and severity of menopausal symptoms among women residing in urban area of Chandigarh using the Menopause Rating Scale.

METHODOLOGY

Study Population and Area

This study was conducted among urban women aged ≥40 years residing in Chandigarh, India, including perimenopausal and postmenopausal women experiencing menopausal symptoms. The study areas comprised Panjab University Quarters (Sectors 14 and 25) and Sector 22, Chandigarh.

Sample Size and Sampling Technique

Based on a previously reported prevalence of menopausal symptoms of 87.7% (Kalhan et al.(24)), with a 5% margin of error, the calculated sample size using the formula $n = z^2p(1–p)/e^2$ was 173. Accounting for a 20% non-response rate, a final sample of 200 women was included. Simple random sampling was employed.

Inclusion and Exclusion Criteria

Women aged ≥40 years who had attained natural menopause and consented to participate were included. Women with surgically induced or unnatural menopause, those on hormone replacement therapy or antidepressants, and those who were severely ill were excluded.

Study Tool and Data Collection

Data were collected through door-to-door visits using a self-administered Menopause Rating Scale (MRS) along with a sociodemographic questionnaire. The MRS is a validated tool comprising 11 items across psychological, somato-vegetative, and urogenital domains, scored on a 5-point scale (0–4). Total scores range from 0–44, categorizing symptom severity from none to very severe.(5) Illiterate participants were assisted by the investigator, and no time limit was imposed.

Statistical Analysis

Data were analyzed using IBM SPSS Statistics version 29. Continuous variables were summarized using mean and standard deviation, while categorical variables were expressed as frequency and percentage. Associations between menopausal symptoms and sociodemographic variables were assessed using Chi-square and Mann–Whitney U tests. A p value <0.05 was considered statistically significant

RESULTS

A total of 200 urban women aged ≥40 years were included in the study. The population is predominantly Hindu (79.5%), with a small proportion of Muslims (0.5%) and a significant minority of Sikhs (20.0%). Majority of the women, 56% (112) were Homemaker followed by Retired women (16%) while Professionals were 9.0%, Semi Professionals were 8.0% and Clerical/shop (6.5%) constituted the smaller proportions.

Table 1- Socio-demographic Profile of the Study Population

Variable	Category	Number (n)	Percentage (%)
Age group (years)	40–44	25	12.5
	45–49	35	17.5
	50–54	40	20.0
	55–59	41	20.5
	60–64	32	16.0
	65–69	19	9.5
	70–74	06	3.0
	≥80	02	1.0
Education	Professional degree	10	5.0
	Post graduate	31	15.5
	Graduate	62	31.0
	Diploma	05	2.5
	High school	54	27.0
	Secondary school	16	8.0
	Primary school	10	5.0
	No formal education	12	6.0
Socioeconomic Class (Modified Kuppuswamy Scale 2023)	Class I (Upper)	15	7.5
	Class II (Upper middle)	66	33.0
	Class III (Lower middle)	58	29.0
	Class IV (Upper lower)	60	30.0
	Class V (Lower)	01	0.5

(*Table* 1). In the present study, 20.5% of the participants belonged to the age group of 55-59 years followed by 50-54 years (20.0%). Only 1% belonged to the age group of above 80 years. Most participants were literate (94%), with graduates forming the largest group (31%), followed by those with high school education (27%). According to the Modified Kuppuswamy Scale (2023), the majority belonged to upper-middle socioeconomic class (33%), followed by upper-lower (30%) and lower-middle class (29%).

Most women were married (80.5%) and lived in nuclear families (69.5%)

Table 2 - Distribution of Participants as per Menopause Status

Menopause status	Number	Percentage
Perimenopause	143	71.5%
Postmenopausal	57	28.5%

Table 2 shows the distribution of participants according to menopause status. The mean age of attainment of the menopause was 48.6 years with standard deviation of 3.11. Most of the participants were Postmenopausal women (143;71.5%) followed by Perimenopausal women (57;28.5%)

Table 3- Distribution of Participants on the Basis of Period Elapsed Since Menopause

Duration of Menopause	Number	Percentage (%)
Upto 5 years	39	27.3
>5 years [up to 10 years]	54	37.8
>10 years	50	35

Among postmenopausal women, 37.8% had attained menopause 5–10 years earlier and 35.0% for more than 10 years (*Table 3*).

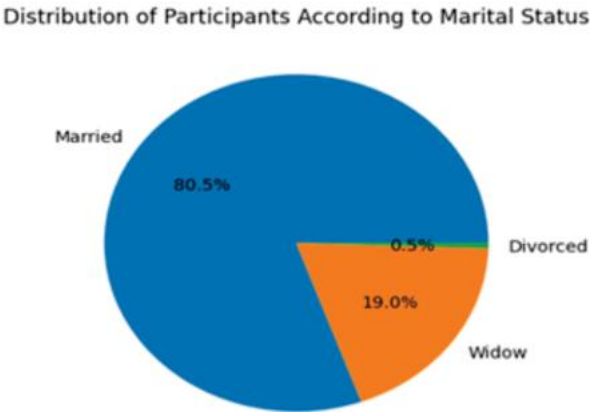


Figure 1 Suggests the Distribution of the Participants According to Marital Status. Majority of the Participants Were Married (80.5%) Followed by Widow (19%). Only 1 Woman was Divorced.

Table 4- Severity of Symptoms- Domains as per Menopausal Rating Scale

Domains	None		Mild		Moderate		Severe		Very severe	
	No.	%	No.	%	No.	%	No.	%	No.	%
Somatic										

Hot flushes [vasomotor symptoms]	54	27	74	37	48	24	17	8.5	07	3.5
Sleep Problems	54	27	35	17.5	71	35.5	23	11.5	17	8.5
Heart Discomfort	126	63	51	25.5	14	7.0	04	2.0	05	2.5
Joint and Muscular Discomfort	37	18.5	33	16.5	48	24	55	27.5	27	3.5
Psychological										
Depressive mood	83	41.5	49	24.5	40	20	24	12	04	2.0
Irritability	79	39.5	41	20.5	45	22.5	29	14.5	06	3.0
Anxiety	82	41	48	24	41	20.5	22	11	07	3.5
Physical and mental exhaustion	70	35	47	23.5	58	29	19	9.5	06	3.0
Urogenital										
Sexual Problems	142	71	43	21.5	13	6.5	02	1.0	0	0
Bladder Problems	127	63.5	37	18.5	22	11	12	6.0	02	1.0
Dryness of vagina	125	62.5	45	22.5	23	11.5	06	3.0	01	0.5

Based on the Menopause Rating Scale (MRS), somatic symptoms were the most prevalent (66%), followed by psychological (60.75%) and urogenital symptoms (34.3%) (Table 4). Joint and muscular discomfort was the most common symptom (81.5%), followed by hot flushes [vasomotor symptoms] and sleep problems (73% each). Physical and mental exhaustion was the predominant psychological symptom (65%), while vaginal dryness was the most frequent urogenital complaint (37.5%). Sexual problems were the least reported symptom (29%).

Table 5- Distribution of Participants Based on their Severity Score and Menopausal Status

Severity score	Perimenopause (n=57)		Postmenopause (n=143)	
	Number	Percentage (%)	Number	Percentage (%)
None (0)	02	3.5	02	1.3
Mild (1-11)	24	42.1	82	57.3
Moderate (12-22)	23	40.3	51	35.6
Severe (23-33)	06	10.5	08	5.5
Very Severe (33-44)	02	3.5	0	0

Perimenopausal women predominantly had mild to moderate symptoms, whereas postmenopausal women showed higher proportions of mild symptoms; very severe symptoms were absent in post-menopausal women (Table 5).

A statistically significant association was observed between age and psychological symptoms (p = 0.022), while somatic and urogenital symptoms showed no significant association with age. Duration of menopause showed a significant association with somatic symptoms (p = 0.029), but not with psychological or urogenital symptoms. No significant association was found between menopausal symptoms and socioeconomic status, marital status, or type of family.

Comparison between perimenopausal and postmenopausal women using the Mann-Whitney U test (Figure 2) revealed a statistically significant difference in psychological symptom scores (p = 0.012), with postmenopausal women experiencing greater psychological impairment. No significant difference was observed for somatic or urogenital symptoms

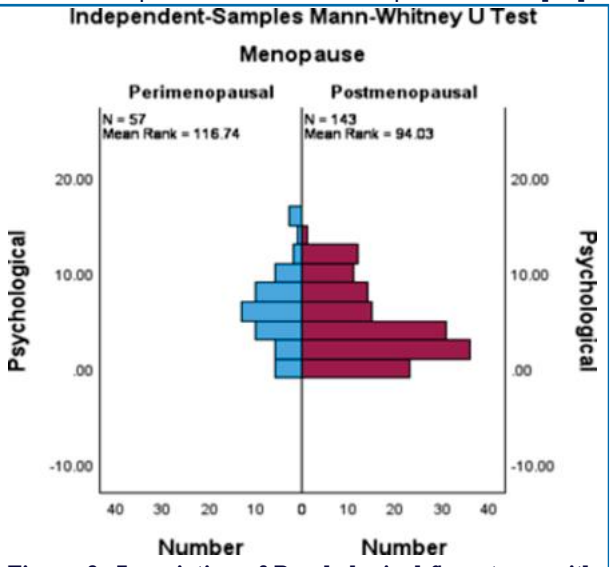


Figure 2 -Association of Psychological Symptoms with Menopausal Status

DISCUSSION

Menopause is a universal physiological transition that is frequently accompanied by a constellation of somatic, psychological, vasomotor, and urogenital symptoms, many of which have a substantial impact on a woman's quality of life (1). In the present study, women aged 40 years and above, including both perimenopausal and postmenopausal groups, were assessed using the Menopause Rating Scale (MRS), a validated and widely used tool for evaluating symptom severity (4).

The age distribution of participants showed that the largest proportion (40.5%) belonged to the 50–59-year age group, which is comparable to observations by Khatoon et al. (21). The predominance of Hindu participants is consistent with regional demographic patterns, similar to findings reported by Kalhan et al. (24). In contrast to studies from Hyderabad where a majority of women had no formal education (16), a relatively higher level of education was observed in the present study, likely reflecting the urban setting and better access to educational opportunities.

Most participants were homemakers (56%), which aligns with findings from North Indian populations (5). A higher proportion of women belonged to the upper middle socioeconomic class, similar to the study conducted in Haryana (24), although studies from other regions have reported a greater representation of women from lower socioeconomic strata (16). The majority of women were married (80.5%), comparable to findings from rural West Bengal (17). Notably, a higher proportion of nuclear families was observed, which may reflect the influence of urbanization and changing social structures.

In the present study, postmenopausal women constituted the majority (71.5%). The mean age at menopause was 48.6 years, which is consistent with findings from Mangalore (12) and falls within the widely reported range of 45–50 years across Indian studies (21,26,27). Differences in the duration since menopause, when compared with other studies such as those from Hyderabad (27), may be attributed to variations in study populations and sampling.

A high prevalence of menopausal symptoms was observed, although the severity was predominantly mild to moderate, which is in agreement with findings from similar hospital-based studies in Pakistan (3). Somatic symptoms were the most commonly reported (66%), followed by psychological (60.75%) and urogenital symptoms (34.33%). This pattern is

comparable to findings from South India (18). However, higher prevalence across all domains has been reported in studies from central India (10), which may reflect differences in awareness, reporting behaviour, and healthcare access.

Joint and muscular discomfort was the most frequently reported symptom (81.5%), followed by hot flushes (73%). These findings are consistent with studies from Gujarat and Karnataka (12,19,22), where musculoskeletal symptoms were also predominant. In contrast, several studies have identified hot flushes as the most common symptom (2,9,20,21), suggesting that symptom patterns may vary across populations due to differences in lifestyle, occupational workload, and cultural perception. Rural studies have further reported a greater burden of musculoskeletal complaints (17), possibly reflecting higher levels of physical strain.

Among psychological symptoms, physical and mental exhaustion and irritability were the most commonly reported, findings that are consistent with studies from Karnataka (2,12). These symptoms indicate a considerable psychological burden during the menopausal transition. Additionally, previous research has demonstrated a strong association between menopausal symptoms and sleep disturbances, which may further exacerbate psychological stress (13).

Urogenital symptoms were comparatively less frequent, with vaginal dryness being the most common complaint. The lower reporting of sexual problems observed in the present study may be influenced by sociocultural factors and underreporting, which has been noted in similar Indian studies.

A statistically significant association was found between menopausal symptoms and age, as well as duration of menopause. Psychological symptoms were significantly associated with age, while somatic symptoms showed a significant association with duration since menopause. These findings are in line with those reported by Khatoon et al. (21) and studies from South India (27). No significant association was observed with education, occupation, marital status, or type of family, which is consistent with some North Indian studies (5), although variations in these associations have been reported in other settings.

Overall, the findings of the present study are largely consistent with existing literature, demonstrating a high prevalence of menopausal symptoms with predominantly mild to moderate severity. The observed variations across studies highlight the influence of socio-demographic, cultural, and regional factors, emphasizing the need for a more contextual and population-specific approach to menopausal health.

Limitations

1. It is a cross-sectional study and hence long term follow up of patient is lacking;
2. It includes only urban women.

CONCLUSION

To conclude, out of 200 participants, 71.5% were post-menopausal women and 28.5% were perimenopausal women. The mean age of menopause in our study was 48.6± 3.11 years. The age and duration of menopause were found statistically significant with psychological symptoms and somatic symptoms respectively. The prevalence of menopausal symptoms was high with mild to moderate severity. Somatic symptoms were the maximum (66%) followed by psychological symptoms (60.75%) and 34.3% experienced urogenital symptoms. Women in the perimenopausal and postmenopausal stage experienced severe Joint and Muscular discomfort (81.5%) as well as psychological symptoms. Therefore, Menopausal Rating Scale was found useful in assessing the menopausal symptoms in both perimenopausal and postmenopausal women. These findings underscore the importance of increasing awareness, promoting early screening, and integrating menopausal health services into routine healthcare to improve the overall well-being and quality of life of midlife women.

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