

# Menopausal Transition and Symptom Burden: A Community-Based Study In Urban India

Banisha Sulthana, Tanveer Bano, Seema Jain, Ganesh Singh

Department of Community Medicine, Lala Lajpat Rai Memorial Medical College, Meerut, Uttar Pradesh

## CORRESPONDING AUTHOR

Banisha Sulthana, Department of Community Medicine, Lala Lajpat Rai Memorial Medical College, Meerut, Uttar Pradesh, PIN: 250004

Email: [sultana.bans@gmail.com](mailto:sultana.bans@gmail.com)

## CITATION

Sulthana B, Bano T, Jain S, Singh G. Menopausal Transition And Symptom Burden: A Community-Based Study In Urban India. Indian J Comm Health. 2026;38(2):427-430. <https://doi.org/10.47203/IJCH.2026.v38i02.037>

## ARTICLE CYCLE

Received: 20/02/2026; Accepted: 16/03/2026; Published: 31/03/2026

This work is licensed under a Creative Commons Attribution 4.0 International License.

©The Author(s). 2026 Open Access

## ABSTRACT

**Background:** A woman's life span can be divided into three broad phases- reproductive, menopausal transition and postmenopause. Menopausal transition is a finite period of physiologic changes that eventually culminates in reproductive senescence. **Aim & Objective:** To estimate the prevalence of menopausal symptoms among middle-aged women in an urban area of Meerut and to assess the distribution of menopausal symptoms according to their menopausal status.

**Methods and Material:** A community-based survey of 300 middle-aged women was carried out in urban area of Meerut by multistage sampling. Data was collected using a pre-tested and validated questionnaire. **Statistical analysis used:** Data collected was analysed and statistically evaluated using Jamovi 2.3.28 software. **Results:** Overall prevalence of menopausal symptoms among middle-aged women in the study was 92.7% while it was 86.9% in early menopausal transition stage women, 86.2% in late menopausal transition stage women and 95.5% in postmenopausal women. **Conclusions:** Menopausal women overall and in all menopausal categories showed high prevalence of menopausal symptoms. Symptoms like 'Accomplishing less than used to', 'Aching in muscles and joints', 'Dissatisfied with personal life' and 'Avoiding intimacy' were significantly higher in postmenopausal women than menopausal transition stage women, while 'Hot flushes or flashes' and 'Being impatient with other people' were seen more associated with menopausal transition stage women than postmenopausal women.

## KEYWORDS

Menopausal symptoms, Burden, Prevalence, Urban, India

## INTRODUCTION

A woman's life span can be divided into three broad phases- reproductive, menopausal transition and postmenopause. Menopausal transition is a finite period of physiologic changes that eventually culminates in reproductive senescence. It is divided into two stages- early menopausal transition and late menopausal transition. Early menopausal transition is marked by increased variability in menstrual cycle length. Late menopausal transition is marked by the occurrence of amenorrhea of 60 days or longer. Symptoms, most notably vasomotor symptoms, are likely to occur during this stage. Postmenopause phase is divided into early postmenopause and late postmenopause. Early postmenopause lasts approximately 5 to 8 years. Symptoms, most notably vasomotor symptoms, are most likely to occur during this stage(1). In a study conducted in East Delhi, the prevalence of menopausal symptoms were found to be 89.5% with physical symptoms, 70.5% having psychosocial symptoms, 36.2% experiencing vasomotor symptoms and sexual symptoms were present in 11.4% of women(2). Menopausal period is positively correlated with noncommunicable diseases

such as diabetes, hypertension, osteoporosis, cervical cancer, and breast cancer. Thus, the transition through menopause can be very challenging.

## Aim & Objective(s)

- To estimate the prevalence of menopausal symptoms among middle-aged women (40-60 years) in an urban area of Meerut
- To assess the distribution of symptoms according to their menopausal status.

## MATERIAL & METHODS

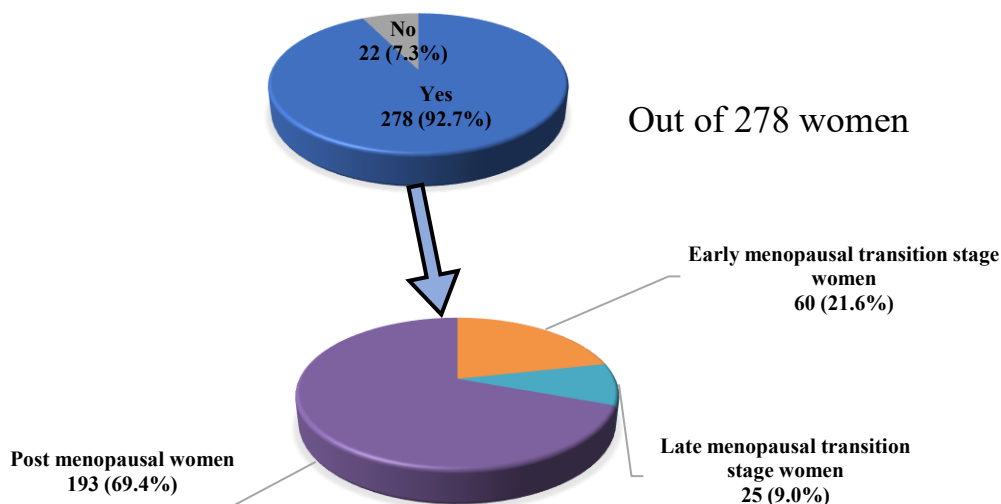
A community-based survey of middle-aged women was carried out in urban area of Meerut for a time period of one year from September, 2023 to September, 2024. Sample size was calculated to be 289 with prevalence of menopausal symptoms taken as 89.5% as per Madan et al (2019)(2), 95% confidence interval and 5% absolute precision, which was rounded off to 300. Out of 90 wards in urban Meerut, ward number 58 was chosen through simple random sampling, which had 10 mohallas, namely Vanshipura, Lakshminagar, Hanumanpuri, Gandhinagar, Saraswati mandir, Devinagar, Aryanagar, Surajkund road, Budh Vihar and Rambagh. Budh vihar, being a

commercial area, was excluded since there were no registered residents in the ward data. Door to door survey by pencil drop method was done in each of the 9 localities to select the households with size proportionate to population size for the survey. Kish sampling was used to decide the participant, if there was more than one eligible participant in a household.

Middle-aged women who are in menopausal transition phase and are postmenopausal were included in the study and others were excluded. Those who didn't have natural menopause, those on hormone replacement therapy or hormonal medications for the past 6 months and those who are known case of chronic systemic diseases like diabetes mellitus, thyroid diseases, any genital pathology or illiterate women were also excluded from the survey.

Data collection was done using a pretested schedule and Menopause-specific Quality of Life (MENQOL) questionnaire(3). The schedule collected information about the menopausal status of each study subject. MENQOL questionnaire measures both the degree and

**Figure 1: Prevalence of menopausal symptoms (n=300)**



Distribution of vasomotor, psychosocial, physical and sexual symptoms according to menopausal status were studied among 300 middle-aged women. For ease of analysis, they were categorised into two groups- menopausal transition women and postmenopausal women.

Vasomotor symptoms prevalence among middle-aged women was 53% 'Hot flushes or flashes', followed by 46.3% 'sweating' and the least prevalent 38.7% 'night sweats'. When analysed according to their menopausal

the severity of menopausal symptoms experienced by middle aged women during the past month. Women in early and late menopausal transition stage were grouped together as menopausal transition stage women. The data collected was analysed and statistically evaluated using Jamovi 2.3.28 software. Descriptive statistics such as frequency and percentages were used. Association was assessed using Chi square test and logistic regression analysis.

**RESULTS**

According to revised STRAW+10 reproductive age staging system, the study subjects were categorized into early menopausal transition stage, late menopausal transition stage and postmenopausal stage. 67.3% of them were postmenopausal, 23% in early menopausal transition stage and only 9.7% were in late menopausal transition stage. Figure 1 illustrates the prevalence of menopausal symptoms among urban women in Meerut.

status, 'Hot flushes or flashes' was the most common vasomotor symptom shown by both the menopausal transition women (60.2%) and postmenopausal women (49.5%). 44.9% menopausal transition stage women had sweating while 35.7% displayed night sweats. Among postmenopausal women, 47% had sweating and 40.1% showed night sweats.

Table 1 and 2 illustrates the distribution of psychosocial and physical symptoms among middle-aged women, respectively.

**Table 1: Distribution of psychosocial symptoms according to menopausal status among middle-aged women (multiple responses)**

Psychosocial Symptoms	Menopausal transition n (%)	Postmenopause n (%)	Total n (%)	P value
Dissatisfied with personal life	24(24.5)	73(36.1)	97(32.3)	0.04
Feeling anxious or nervous	68(69.4)	119(58.9)	187(62.3)	0.07
Poor memory	52(53.1)	118(58.4)	170(56.7)	0.38
Accomplishing less than used to	58(59.2)	159(78.7)	217(72.3)	<b>0.0004</b>
Feeling depressed, down or blue	57(58.2)	110(54.5)	167(55.7)	0.54
Being impatient with other people	74(75.5)	111(54.9)	185(61.7)	<b>0.0005</b>
Feelings of wanting to be alone	45(45.9)	92(45.5)	137(45.7)	0.95
Base	98	202	300	

**Table 2: Distribution of physical symptoms according to menopausal status among middle-aged women (multiple responses)**

Physical Symptoms	Menopausal transition n (%)	Postmenopause n (%)	Total n (%)	P value
Flatulence or gas pains	54(55.1)	106(52.5)	160(53.3)	0.66
Aching in muscles and joints	68(69.4)	171(84.7)	239(79.7)	<b>0.002</b>
Feeling tired or worn out	75(76.5)	173(85.6)	248(82.7)	0.05
Difficulty sleeping	27(27.6)	58(28.7)	85(28.3)	0.83
Aches in back of neck or head	50(51.0)	103(50.9)	153(51.0)	0.99
Decrease in physical strength	67(68.4)	169(83.7)	236(78.7)	<b>0.002</b>
Decrease in stamina	68(69.4)	164(81.2)	232(77.3)	<b>0.022</b>
Feeling lack of energy	69(70.4)	155(76.7)	224(74.7)	0.23
Dry skin	21(21.4)	58(28.7)	79(26.3)	0.17
Weight gain	28(28.6)	48(23.8)	76(25.3)	0.36
Increased facial hair	6(6.1)	5(2.5)	11(3.7)	0.11
Changes in appearance, texture or tone of your skin	7(7.1)	16(7.9)	23(7.7)	0.81
Feeling bloated	36(36.7)	72(35.6)	108(36.0)	0.85
Low backache	49(50)	118(58.4)	167(55.7)	0.16
Frequent urination	25(25.5)	68(33.7)	93(31.0)	0.15
Involuntary urination while laughing or coughing	8(8.2)	26(12.9)	34(11.3)	0.22
Base	98	202	300	

Overall prevalence of sexual symptoms were 60.7% 'avoiding intimacy', followed by 48.3% with 'Change in sexual desire' and only 20% having 'vaginal dryness'. Menopausal category-wise analysis showed similar pattern in postmenopausal women, but in menopausal transition stage women, only 35.7% avoided intimacy, 36.7% had change in sexual desire, while 19.3% had

vaginal dryness. 'Change in sexual desire' (p value- 0.005) and 'Avoiding intimacy' (p value- <0.001) revealed statistically significant association with menopausal status on chi square analysis.

Table 3 illustrates the regression analysis of menopausal symptoms among the study subjects taking menopausal transition women as the reference group.

**Table 3: Menopausal symptoms according to menopausal status (n=300)**

Variables	Odds ratio		95% CI		SE	Z	P value	
	Unadjusted	Adjusted	lower	upper				
<b>Vasomotor Symptoms</b>								
Hot flushes or flashes	No	1.543	2.269	1.215	4.237	0.319	2.570	0.010
	Yes	Reference	-	-	-	-	-	-
<b>Psychosocial Symptoms</b>								
Dissatisfied with personal life	Yes	Reference	-	-	-	-	-	-
	No	0.573	0.352	0.183	0.677	0.334	-3.128	0.002
Accomplishing less than used to	No	2.550	0.244	0.123	0.487	0.352	-4.00	<0.001
	Yes	Reference	-	-	-	-	-	-
Being impatient with other people	No	0.396	2.602	1.387	4.882	0.321	2.980	0.003
	Yes	Reference	-	-	-	-	-	-
<b>Physical Symptoms</b>								
Aching in muscles and joints	No	0.411	0.422	0.205	0.868	0.368	-2.344	0.019
	Yes	Reference	-	-	-	-	-	-
<b>Sexual Symptoms</b>								
Avoiding intimacy	No	0.208	0.153	0.076	0.308	0.358	-5.252	<0.001
	Yes	Reference	-	-	-	-	-	-

CI- Confidence Interval; SE- Standard Error

Logistic regression analysis showed that postmenopausal women had 2.269 times odds of not having hot flushes or flashes than menopausal transition women. Among psychosocial symptoms, 'Dissatisfied with personal life' [AOR: 0.352, (CI:0.183-0.677)], 'Accomplishing less than used to' [AOR: 0.244, (CI:0.123-0.487)], and 'Being impatient with other people' [AOR: 2.602, (CI:1.387-4.882)] were the significant symptoms according to menopausal status. Regression analysis showed postmenopausal women had more risk of having 'Aching in muscles and joints' than menopausal transition women [AOR: 0.422, (CI:0.205-0.868)] with a p value of 0.019.

Out of sexual symptoms, 'Avoiding intimacy' was significantly higher in postmenopausal women than menopausal transition women [AOR: 0.153, (CI:0.076-0.308)].

## DISCUSSION

Even though some studies were carried out in India to estimate the prevalence of menopausal symptoms among middle-aged women, studies which explored about the symptom distribution and menopausal status of women are very few. In the current study, middle-aged women were categorised into early menopausal

transition stage, late menopausal transition stage and postmenopausal stage, according to revised STRAW+10 reproductive age staging system. 67.3% of them were postmenopausal, 23% in early menopausal transition stage and only 9.7% were in late menopausal transition stage. Patel et al (2017)(4) found that among middle-aged women of Western India in their study, 12.7% were in premenopausal state, 28.5% were perimenopausal while 58.8% were postmenopausal, which was comparable to the proportions in the present study. Singh et al (2023)(5) also found similar results in Uttarakhand, where 189 (47.3%) were premenopausal and 211 (52.7%) were postmenopausal. Menopausal category-wise distribution in a research by N and B et al (2023)(6) was in a slightly different pattern with 39.9% premenopausal women, 23.5% perimenopausal women and 36.6% postmenopausal women in South India.

Present research revealed the prevalence of menopausal symptoms (experienced at least one menopausal symptom in the past one month) in the study participants as 92.7%. This is consistent with the observations by Gaikwad et al (2020)(7) that the menopausal symptom prevalence among the participants as 97.68%. However, the current study differs from Patel et al (2017)(4), where it was observed that a prevalence of 71.5% for menopausal symptoms in their study on middle-aged women of Western India. Their study subjects included 5.3% premenopausal women, 30.3% perimenopausal and 64.5% postmenopausal women with the menopausal symptoms, which was comparable to the current study (21.6%, 9% and 69.4% of women in early menopausal transition, late menopausal transition and postmenopausal stages, respectively). Prevalence of menopausal symptoms in early menopausal transition stage women was 86.9%, in late menopausal transition stage women was 86.2% and in postmenopausal women was 95.5%. High prevalence of menopausal symptoms among women of all the menopausal categories needs to be addressed effectively.

#### CONCLUSION

Menopausal women overall and in all menopausal categories showed high prevalence of menopausal symptoms. Symptoms like 'Accomplishing less than used to', 'Aching in muscles and joints', 'Dissatisfied with personal life' and 'Avoiding intimacy' were significantly higher in postmenopausal women than menopausal transition stage women, while 'Hot flushes or flashes' and 'Being impatient with other people' were seen more associated with menopausal transition stage women than postmenopausal women.

#### RECOMMENDATION

Early identification and management of menopausal symptoms and integration of menopausal transition education into routine healthcare services is necessary in Indian scenario.

#### LIMITATION OF THE STUDY

The study design was cross-sectional and hence has a limitation of having no follow up of study findings.

#### RELEVANCE OF THE STUDY

The study highlights the importance of menopausal symptoms in the life of middle-aged women of Urban India.

#### AUTHORS CONTRIBUTION

All authors have contributed equally.

#### FINANCIAL SUPPORT AND SPONSORSHIP

Nil

#### CONFLICT OF INTEREST

There are no conflicts of interest.

#### DECLARATION OF GENERATIVE AI AND AI ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

The authors haven't used any generative AI/AI assisted technologies in the writing process.

#### REFERENCES

1. Harlow, S. D. *et al*. Executive summary of the Stages of Reproductive Aging Workshop + 10: addressing the unfinished agenda of staging reproductive aging. *Menopause* **19**, 387–395 (2012).
2. Madan, U., Chhabra, P., Gupta, G. & Madan, J. Menopausal symptoms and quality of life in women above 40 years in an urban resettlement colony of East Delhi. *Int J Med Sci Public Health* **1** (2019) doi:10.5455/ijmsph.2019.0203012052019.
3. Lewis, J. E., Hilditch, J. R. & Wong, C. J. Further psychometric property development of the Menopause-Specific Quality of Life questionnaire and development of a modified version, MENQOL-Intervention questionnaire. *Maturitas* **50**, 209–221 (2005).
4. Patel, M., Shah, V., Kamani, H. & Sonaliya, K. Current scenario of menopause-related symptoms using menopause rating scale among middle-aged women of Western India: A cross-sectional study. *Int J Med Sci Public Health* **1** (2017) doi:10.5455/ijmsph.2018.0719814112017.
5. Singh, P. *et al*. A Study to Assess the Prevalence and Factors Affecting Menopausal Symptoms among Middle-Aged Females in the Garhwal Region of Uttarakhand. *J Midlife Health* **14**, 237–245 (2023).
6. N, L. & B, S. Physical activity, anthropometric measurements, quality of life and menopausal symptoms among South-Indian women. *Prz Menopausalny* **22**, 191–195 (2023).
7. Gaikwad, M., Gupta, S. A., Sharma, M., Verma, N. & Shalini, S. A cross-sectional study to assess the prevalence of menopausal symptoms among middle aged female teachers in schools of Raipur city. (2020).