

Research Article

Menopausal Symptoms In Urban Versus Rural Women Aged Above 40 Years in Central India: A Cross-Sectional Study

Dr. Shruti Agrawal^{1*}, Dr. Sonali S. Patil², Dr. Uday W. Narlawar³

^{1*}Assistant Professor, Department of Community Medicine, Chhattisgarh Institute of Medical Sciences, Bilaspur, C.G., India.

^{2,3}Professor, Government Medical College, Nagpur.

Corresponding Author: Dr Shruti Agrawal

Assistant Professor, Department of Community Medicine, Chhattisgarh Institute of Medical Sciences, Bilaspur, C.G., India Pin-495001,

Email: drshruti.0101@gmail.com

Received: 21.07.2026, Revised: 23.08.2026, Accepted: 25.08.2026

ABSTRACT

Background: Menopause is a critical period in a woman's life that not only marks the end of reproductive ability but is also associated with multiple physical, vasomotor, psychological, and sexual complaints.

Aim & objective: To compare menopausal symptoms among urban and rural women aged above 40 years using Menopausal Rating scale.

Materials & methods: A community based cross sectional study was carried out in urban and rural Field practice area of Government Medical College, Nagpur. This study included 180 women from both urban and rural area of age above 40 years and menopausal symptoms were assessed using Menopausal Rating Scale.

Result: The most prevalent symptom reported among urban & rural women was joint & muscular discomfort i.e. 140(77.8%) & 121(67.2%). Significantly higher proportions of urban women have moderate to severe scores for somatic and psychological domains like joint & muscular discomfort, sleep problem, irritability, physical & mental exhaustion whereas higher proportion of rural women have urogenital symptoms.

Conclusions: Higher proportions of women are suffering from menopausal symptoms with variation in prevalent symptoms among urban & rural women.

Keywords: Menopausal Symptoms, Urban, Rural, Somatic, Psychological, Urogenital.

INTRODUCTION

'Menopause' - Greek word 'men', means 'month' & 'pauis', means 'cessation'. Permanent cessation of menstruation at the end of reproductive life due to ovarian follicular inactivity.[1] Gradual depletion of ovarian gonadotropins i.e. oestrogen & progesterone in the body which leads to menopausal symptoms. Menopausal symptoms can appear as physical/ somatic, psychological or urogenital symptoms. Physical/ Somatic symptoms include hot flushes/ night sweats, palpitation, sleep problem, joint & muscular discomfort etc. Psychological symptoms can present as anxiety, depression, irritability, physical & mental exhaustion etc. Urogenital symptoms could appear as sexual & bladder problem, dryness of vagina etc.[2]

According to Indian Menopause Society, there are currently about 65 million Indian women over the age of 45 years affected with

menopause related health problems.[3] It is well documented that menopausal symptoms experienced by women affect their quality of life.[4] Also it affects the quality of life by being major cause of morbidity and acts as a risk factor for early mortality from subsequent chronic diseases like Ischaemic heart disease, Osteoporosis, etc. Lifestyle of the rural & urban people is varied. There is an economic imbalance between the poor, middle class, affluent and the multicultural, multi-ethnic, multi-religious composition of the population.[5] Although menopause is a universal reproductive phenomenon, there is a great diversity in nature of symptoms and frequencies across the countries, region and even in same culture.[6] In our health system, women of the reproductive age group are given more importance. The post-menopausal women (>45 years) in both the urban and the rural areas are neglected.[7] The problems related to menopause and those that occur in

the post-menopausal period have received a little attention. Few Indian studies have attempted to determine the rural-urban difference in menopausal symptoms. Therefore, the present study aims to compare menopausal symptoms among urban and rural women aged above 40 years using Menopausal Rating scale.

MATERIALS AND METHODS

The present study is a community based cross sectional study carried out in Urban and Rural Field practice area of UHTC and RHTC of Government Medical College Nagpur. Study was carried out from July 2017 to June 2018. Study subjects included were women above 40 years age willing to participate in this study. Women who have had surgical menopause, known case of hypertension, heart disease, diabetes, thyroid disorder, malignancy were excluded. Sample size was estimated by using proportion of most common symptom i.e. joint & muscular discomfort in urban (77.14 %) & rural women (88.57%). [8] By using formula

$$n = \frac{\left[\frac{Z_{\alpha}}{2} \sqrt{2PQ} + Z_{\beta} \sqrt{p_1q_1 + p_2q_2} \right]^2}{(p_1 - p_2)^2}$$

=180 for each group (CI-95% POWER- 80%)

Total 360 women above 40 years were included in the study i.e. 180 women from both urban and rural area. A pilot study was conducted in 50 women i.e. 25 each from urban and rural area. The necessary corrections were done in questionnaire.

Sampling method & Data collection: Urban area under urban health & training centre with population of 5125 & female population of 2460(48%) was selected. In rural area, 125 villages were covered by rural health & training centre area, 1 village was selected by simple random sampling with population of 2335 & female population constituted 1046(44.8%).

First house was selected randomly by rotating a pen at the centre of area & house to house survey was conducted in clockwise direction till sample size was achieved.

A predesigned, pretested questionnaire consisting of Socio- demographic details, Menstrual, obstetric and Menopausal status was filled by interview method after taking informed consent. As per WHO classification, Premenopausal women are those who have experienced regular menstrual bleeding within the last 12 months. Perimenopausal women are those who have experienced irregular menses within the last 12 months or the absence of menstrual bleeding for more than 3

months but less than 12 months. Postmenopausal women are those who have not experienced menstrual bleeding for 12 months or more.[1]

Menopausal symptoms were assessed by using Menopausal rating scale, (MRS).[9] This is composed of 11 items and was divided into three subscales i.e. Somatic, Psychological and Urogenital symptoms. It consists of 11 menopausal symptoms which includes 5 columns for responses (None, mild, moderate, severe and very severe) with a score of 0, 1, 2, 3 and 4 respectively and total score 44. Symptoms under each domain is presented in table 2 while score distribution and its classification as no symptoms, mild, moderate, and severe is presented in table 3. [8]

Menopausal rating scale (MRS) scale was validated by back translation and pilot study.

Ethical approval was taken from Institutional Ethics Committee. The data was collected, entered & analyzed using EPI Info 7.1. & open EPI. Pearson Chi square test was applied to observe the differences between proportions. t- test was applied to check any significant difference between the means of two groups. P value <0.05 was considered significant.

RESULT

A total of 360 women aged above 40 years, 180 from urban & 180 from rural were included in this study. Table 1 summarizes the baseline characteristics of the 360 study participants. The mean age of the participants was 49.6 ± 7.27 years. More than half of the participants (57.8%) had education up to primary school. Similarly, the majority of urban & rural women were homemakers (42.5%). Over half of the participants (53.3%) belonged to socioeconomic status below Class III. A parity of more than two children was observed in 55% of the women and was more common among urban women (60%) than rural women (50%). The mean body mass index (BMI) of the study population was 23.22 ± 4.23 kg/m². A significantly higher proportion of rural women (89.4%) reported moderate-to-severe physical activity compared with urban women (75%) ($p < 0.001$). Regarding menopausal status, 29.2% of participants were premenopausal, 13.9% were perimenopausal, and 56.9% were postmenopausal. The mean age at menopause was 45.17 ± 3.84 years overall and was significantly higher among rural women (45.87 ± 3.93 years) compared with urban women (44.54 ± 3.74 years) ($p = 0.001$). Overall, the two groups were

comparable with respect to most baseline characteristics, except for physical activity and age at menopause, which differed significantly between urban and rural women.

Table 2 presents the prevalence of menopausal symptoms among urban and rural women. Among the somatic symptoms, joint and muscular discomfort was the most commonly reported symptom, affecting 72.5% of the participants, followed by hot flushes and night sweats (51.4%), heart discomfort (47.2%), and sleep problems (45%). Sleep problems were significantly more prevalent among urban women (51.7%) compared to rural women (38.3%) ($p = 0.019$). Similarly, joint and muscular discomfort was reported significantly more often by urban women (77.8%) than rural women (67.2%) ($p = 0.031$).

Regarding psychological symptoms, anxiety (68.9%), irritability (66.1%), physical and mental exhaustion (65.3%), and depression (63.9%) were highly prevalent among the study participants. Urban women reported significantly higher levels of irritability (74.4% vs. 57.8%; $p = 0.001$) and physical and mental exhaustion (71.1% vs. 59.4%; $p = 0.020$) compared to rural women.

Among the urogenital symptoms, sexual problems were reported by 53.3% of women, followed by bladder problems (14.7%) and vaginal dryness (6.7%). Sexual problems were significantly more common among rural women (59.4%) than urban women (47.2%) ($p = 0.028$). Likewise, bladder problems were reported significantly more often in rural women (18.9%) compared to urban women (10.6%) ($p = 0.033$).

Table 3 presents the frequency and severity of menopausal symptoms among urban and rural women according to the Menopause Rating Scale (MRS). For the somatic domain, 42.8% of women had no or minimal symptoms, 28.3% had mild symptoms, 28.1% had moderate symptoms, and only 0.8% experienced severe symptoms. Moderate somatic symptoms were significantly more common among urban women (33.3%) than rural women (22.8%) ($p = 0.03$). In the psychological domain, 25.6% of participants had no psychological symptoms, 24.2% had mild symptoms, 36.9% had moderate symptoms, and 13.3% had severe symptoms. A significantly higher proportion of rural women had no psychological symptoms compared to urban women (32.8% vs. 18.3%; $p = 0.002$). Conversely, severe psychological

symptoms were significantly more prevalent among urban women (18.9%) than rural women (7.8%) ($p = 0.003$). Regarding the urogenital domain, 41.4% of participants reported no symptoms, 27.2% had mild symptoms, 28.6% had moderate symptoms, and 2.8% had severe symptoms.

The overall MRS score showed that 25.5% of women had no symptoms, 30.0% had mild symptoms, 43.3% had moderate symptoms, and 1.1% had severe menopausal symptoms. Moderate overall menopausal symptoms were significantly more common among urban women (51.1%) than rural women (35.5%) ($p = 0.004$).

DISCUSSION

Menopause is a natural biological transition characterized by a decline in ovarian function and hormonal changes that may result in a wide spectrum of somatic, psychological, and urogenital symptoms. The severity and pattern of menopausal symptoms vary considerably among women and are influenced by age, socioeconomic status, lifestyle, physical activity, cultural practices, and accessibility to healthcare services. The present cross-sectional study assessed menopausal symptoms among 360 women (180 urban and 180 rural) using the Menopause Rating Scale (MRS) and demonstrated significant differences in symptom patterns between urban and rural women.

The mean age at menopause was 45.17 ± 3.84 years, with urban women experiencing menopause significantly earlier than rural women (44.54 ± 3.74 years vs. 45.87 ± 3.93 years, $p=0.001$). Similar findings were reported by Saw Ohn Mar and Resni Mona (2020), who demonstrated a rural-urban difference in natural menopausal age. [10]

Recent evidence from Fang et al. (2024), through a systematic review and meta-analysis of menopausal symptoms worldwide, highlighted that demographic, environmental, and lifestyle-related factors contribute substantially to variations in menopausal experiences across populations [11]. Earlier Indian studies by Seeta Devi et al. (2015), Dasgupta (2009), and Sagdeo and Arora (2011) also reported differences in menopausal characteristics between urban and rural women, emphasizing the role of residence-related factors. [12,4,5]

In concordance to the findings of our study, Armo and Sainik (2020), reported a considerable burden of somatic complaints

among menopausal women.[13] Similarly, Beura et al. (2021), Shringarpure et al. (2022), found that musculoskeletal symptoms and vasomotor complaints were common among rural and urban women of Eastern India, although the distribution varied between groups. [14,15]

The higher frequency of somatic symptoms among urban women in the present study may be attributed to sedentary lifestyle, reduced physical activity, increased psychological stress, and occupational demands. In contrast, rural women in the present study demonstrated significantly higher moderate-to-severe physical activity, which may have contributed to reduced reporting of some somatic complaints.

Psychological symptoms were highly prevalent in the present study & urban women had significantly higher irritability and physical and mental exhaustion compared with rural women.

Similar findings were reported by Sharma and Mahajan (2015), who observed greater psychological symptom burden and poorer quality of life among urban menopausal women. [6] Singla et al. (2016) also demonstrated differences in psychiatric morbidity, coping mechanisms, and attitudes among rural and urban menopausal women. [16]

The increased psychological symptom burden among urban women in the present study may be explained by increased psychosocial stress, sedentary behavior, competing family and professional responsibilities, and reduced opportunities for social support.

In the present study, sexual problems & bladder problems were significantly higher among rural women compared with urban women

Goyal et al. (2017) and Kannur and Itagi (2018) highlighted differences in menopausal morbidity patterns between rural and urban postmenopausal women, with rural women often experiencing greater reproductive and urogenital health-related concerns. [17,18]

The higher prevalence of urogenital symptoms among rural women in the present study may be related to limited awareness regarding menopausal health, reluctance to discuss sensitive symptoms, delayed healthcare seeking, and reduced access to specialized healthcare services. Cultural barriers may also influence recognition and reporting of sexual and urinary symptoms.

According to MRS scoring, overall, 43.3% of women had moderate symptoms, with urban women showing significantly higher moderate MRS scores than rural women (51.1% vs. 35.5%, $p=0.004$). Severe psychological symptoms were also significantly higher among urban women (18.9% vs. 7.8%, $p=0.003$). The findings are comparable with Seeta Devi et al. (2015) Armo and Sainik (2020). [12,13]

CONCLUSION

The present study demonstrates that menopausal symptoms are highly prevalent among both urban and rural women, with significant differences in symptom patterns. Urban women experienced greater psychological symptoms, sleep disturbances, musculoskeletal complaints, and higher overall MRS severity, whereas rural women had greater urogenital complaints. These differences highlight the importance of considering residential background while planning menopausal health services. Community-based awareness programs, early identification of symptoms, and improved access to menopausal healthcare may help improve the quality of life of women during this transitional phase.

REFERENCES

1. World Health Organization. Research on Menopause in the 1990s: Report of WHO Scientific Group. WHO Technical Report Series 1996.Vol. 866:1-107.
2. AlDughaiter A, AlMutairy H, Alateeq M. Menopausal symptoms and quality of life among Saudi women visiting primary care clinics in Riyadh, Saudi Arabia. International Journal of Women's Health. 2015;7(june):645-53.
3. Alakananda, Das N, Das BP. Age of Menopause and Menopausal Symptoms among women attending Guwahati Medical College and Hospital, Guwahati, Assam: A cross-sectional study. Scholar Journal of Applied Medical Sciences. 2015;3(7C):2621-9.
4. Dasgupta D. Menopausal Problems Among Rural and Urban Women From Eastern India. Journal of Social, Behavioral, and Health Sciences. 2009;3(1):20-33.
5. Sagdeo MM, Arora D. Menopausal Symptoms: A Comparative Study in Rural and Urban Women. J K science.. 2011;13(1):23-6.
6. Sharma S, Mahajan N. Menopausal

- symptoms and its effect on quality of life in urban versus rural women: A cross-sectional study. *Journal of Mid-life Health*. 2015;6(1):16-20.
7. Dutta R, Dcruze L, Anuradha R, Rao S, Rashmi MR. A Population Based Study on the Menopausal Symptoms in a Rural Area of Tamil Nadu , India. *Journal of Clinical and Diagnostic Research*. 2012;6(4):597-601.
 8. Vadugu S, Kanna S. Comparision of Post-Menopausal Symptoms in Rural and Urban Women. *IOSR Journal of Dental and Medical Sciences* . 2016;15(8):53-7.
 9. Heinemann K, Ruebig A, Potthoff P et al. The Menopause Rating Scale (MRS) scale: a methodological review. *Health Quality of Life Outcomes*. 2004;2:45.
 10. Saw Ohn Mar, Mona R. Rural-Urban Difference in Natural Menopausal Age and the Correlating Factors. *International Journal of Women's Health and Reproduction Sciences*. 2020;8(2):112-118.
 11. Fang Y, et al. Mapping global prevalence of menopausal symptoms among middle-aged women: a systematic review and meta-analysis. *BMC Public Health*. 2024;24:1767.
 12. Seeta Devi A, Upendra S, Chavan R, Barde S. Assessment of menopausal symptoms using modified Menopause Rating Scale (MRS) among middle age women in selected urban and rural area of Pune district. *Journal of Advanced Scientific Research*. 2015;6(3):47-50.
 13. Armo M, Sainik S. Assessment of menopausal symptom using modified Menopause Rating Scale among rural women of Rajnandgaon in Chhattisgarh, a Central India region. *J South Asian Fed Obst Gynae*. 2020;12(4):209-14.
 14. Beura S, Patnaik L, Sahu M. Menopausal Symptoms: A Comparative Study among Rural and Urban Women of Eastern India. *National Journal of Community Medicine*. 2021;12(11):374-379
 15. Shringarpure KS, Kharawala A, Panchal PP, Brahme KM, Baxi SR, Baxi RK. Prevalence of menopausal symptoms among women in Vadodara, Central Gujarat: the urban-rural divide. *Journal of Family Medicine and Primary Care*. 2022;11:6049-6055.
 16. Singla M, Sharma A, Samuel C, George J. To compare sociodemographic profile, attitude, coping strategies and psychiatric morbidity among rural and urban menopausal women. *International Journal of Medical and Dental Sciences*. 2016;5(1):1016-26.
 17. Goyal A, Mishra N, Dwivedi S. A comparative study of morbidity pattern among rural and urban postmenopausal women of Allahabad, Uttar Pradesh, India. *International Journal of Research in Medical Sciences*. 2017;5(2):670-677.
 18. Kannur D, Itagi S. Influence of demographic characteristics on menopausal problems among rural and urban middle-aged women. *Journal of Nutrition & Food Sciences*. 2018;8(3):1-6.

TABLES

Table 1- Baseline Characteristics of Study Participants

VARIABLE	TOTAL (n=360)	URBAN (n=180)	RURAL (n=180)	P value #
Mean Age (yrs)	49.6 ± 7.27	49.51 ± 7.20	49.66 ± 7.00	0.70
Education- till pri. school	208 (57.8%)	102 (56.7%)	106 (58.9%)	0.67
Occupation- homemaker	153 (42.5%)	75 (41.7%)	78 (43.3%)	0.75
SES below class III	192 (53.3%)	88 (48.9%)	104 (57.8%)	0.09
Parity >2	198 (55%)	108 (60%)	90 (50%)	0.05
BMI (kg/m ²)	23.22 ± 4.23	23.11 ± 3.79	23.33 ± 4.63	0.14
Physical activity (mod- sev)	296 (82.2%)	135 (75%)	161 (89.4%)	<0.001*
Premenopausal	105 (29.2%)	49 (27.2%)	56 (31.1%)	0.42
Perimenopausal	50 (13.9%)	23 (12.8%)	27 (15%)	0.54
Postmenopausal	205 (56.9%)	108 (60%)	97 (53.9%)	0.24
Menopausal age (yrs)	45.17 ± 3.84	44.54 ± 3.74	45.87± 3.93	0.001*

#- chi-square test is used to find association between proportions.
*p-value<0.05 is considered statistically significant.

Table 2: Menopausal Symptoms in Urban and Rural Women

Menopausal symptoms	Total (n=360) No. (%)		Urban (n=180) No. (%)		Rural (n=180) No. (%)		p value#
SOMATIC							
1. Hot flushes & night sweats	185	51.4	91	50.6	94	52.2	0.831
2.Heart discomfort	170	47.2	83	46.1	87	48.3	0.754
3.Sleep problem	162	45	93	51.7	69	38.3	0.019*
4.Joint & muscular discomfort	261	72.5	140	77.8	121	67.2	0.031*
PSYCHOLOGICAL							
5.Depression	230	63.9	120	66.7	110	61.1	0.323
6.Irritability	238	66.1	134	74.4	104	57.8	0.001*
7.Anxiety	248	68.9	129	71.7	119	66.1	0.307
8.Physical & mental exhaustion	235	65.3	128	71.1	107	59.4	0.020*
UROGENITAL							
9.Sexual problem	192	53.3	85	47.2	107	59.4	0.028*
10.Bladder problem	53	14.7	19	10.6	34	18.9	0.033*
11.Dryness of vagina	24	6.7	8	4.4	16	8.9	0.134

#- chi-square test is used to find association between proportions.
*p-value<0.05 is considered statistically significant.

Table 3. Frequency and Severity of Menopausal Symptoms among Urban & Rural Women According To Menopause Rating Scale (MRS)

Menopause Rating Scale (MRS)							
Severity (MRS Score)	Total (n= 360) No. (%)		Urban (n=180) No. (%)		Rural (n=180) No. (%)		p value#
SOMATIC (0-16)							
None (0-2)	154	42.8	68	37.8	86	47.8	0.07
Mild (3-4)	102	28.3	52	28.9	50	27.8	0.90
Moderate (5-8)	101	28.1	60	33.3	41	22.8	0.03*
Severe (>8)	3	0.8	0	0	3	1.6	0.24^
PSYCHOLOGICAL (0-16)							
None (0-1)	92	25.6	33	18.3	59	32.8	0.002*
Mild (2-3)	87	24.2	41	22.8	46	25.5	0.62
Moderate(4-6)	133	36.9	72	40	61	33.9	0.27
Severe (>6)	48	13.3	34	18.9	14	7.8	0.003*
UROGENITAL (0-12)							
None (0)	149	41.4	82	45.5	67	37.2	0.13
Mild (1)	98	27.2	46	25.5	52	28.9	0.55
Moderate (2-3)	103	28.6	48	26.7	55	30.5	0.48
Severe (>3)	10	2.8	4	2.2	6	3.3	0.74
TOTAL MRS SCORE (0-44)							
None (0-4)	92	25.5	40	22.2	52	28.9	0.18
Mild (5-8)	108	30	45	25	63	35	0.05
Moderate (9-16)	156	43.3	92	51.1	64	35.5	0.004*
Severe (>16)	4	1.1	3	1.6	1	0.5	0.62^

#chi-square test is used to find association between proportions.
^fisher-exact test is used.
*p-value<0.05 is considered statistically significant.