

## COMPARATIVE ASSESSMENT OF MENOPAUSAL HEALTH ISSUES IN URBAN AND RURAL FEMALES IN INDIA: A CROSS-SECTIONAL CLINICAL STUDY

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### ABSTRACT

**Background:** A large variation can be observed in the menopausal health concerns and issues in the varying and extensive socioeconomic groups and the females residing in urban and rural areas. However, existing literature data is scarce addressing this issue.

**Aim:** The present study was aimed to comparatively assess the menopausal health issues in urban and rural females in India. The study also assessed the average menopausal age and assessed the variations and prevalence of menopausal females in urban and rural populations.

**Methods:** The study assessed 800 females who attained menopause from both urban and rural populations. The included females were divided into two groups based on their residence in rural and urban areas. In included females, demographic data were recorded along with menopausal symptoms and reproductive history. The gathered data were statistically assessed.

**Results:** The study results showed variations in the menopausal symptoms of females residing in urban and rural areas. The most common symptom was joint and muscle pain seen in 86% (n=34) females from rural and 80% (n=320) females from urban areas. Breast pain was seen in 30% of females. It was also associated with night sweats, sleep disturbances, and hot flashes. The majority of rural females considered menopausal symptoms natural and considered no need for medication attention until severe symptoms appeared.

**Conclusions:** The present study concludes a significant need for awareness of menopausal-age females concerning self-care and better management of the discomforts associated with menopause. The study results can help create awareness and corroborate the health status of menopausal females.

**Keywords:** menopause, menopausal issues, psychosomatic issues, rural females, urban females

## INTRODUCTION

Menopausal health is often a neglected concern in the Indian scenario and is an issue that needs importance concerning Indian females owing to an increase in the life expectancy of Indian females and an increase in the population of post-menopausal females globally including in India. Hence, various efforts are being made to create awareness in Indian females about menopause and the various symptoms associated with the menopause. Creating awareness about menopause can help females in early and timely recognition of the signs and symptoms associated with menopause, allow the affected females to seek the needed medical help and care, and decrease the uneasiness associated with menopause and associated symptoms of menopause.<sup>1</sup>

Post-menopausal time usually comprises the one-third of total lifespan in females which is a large span of their total life. Also, certain diseases, such as osteoporosis, cervical cancer, breast cancer, diabetes, and coronary heart disease increase following menopause or may also be seen as a consequence of early menopause in some females.<sup>2</sup> During this transition phase of menopause, a variety of menopausal symptoms can be felt and experienced by different females. These menopausal symptoms can have varying prevalence and diverse reporting in females belonging to different ethnic groups, from different socioeconomic groups, and residing in various areas as rural and urban areas.<sup>3</sup>

These menopausal symptoms are also affected by different biological variables and lifestyles of the females along with their socioeconomic background which are also considered as governing factors and predictors of different menopausal symptoms in different females. With the increase in the severity of the menopausal symptoms, there is an increase in the chances of poor health-related quality of life which can also affect the life expectancy in the affected females.<sup>4</sup>

Concerning the Indian scenario, the majority of the health issues about the health of females from the post-menopausal age, the existing literature data is scarce from the North Indian females as well as from the females residing in the South Indian regions. Also, the existing literature data is scarce concerning the health of post-menopausal females all over India.<sup>5</sup>

Hence, the present study aimed to comparatively assess the menopausal health issues in urban and rural females in India. The study also assessed the average menopausal age and assessed the variations and prevalence of menopausal females in urban and rural populations.

## MATERIALS AND METHODS

The present cross-sectional community-based survey study was aimed to comparatively assess the menopausal health issues in urban and rural females in India. The study also assessed the average menopausal age and assessed the variations and prevalence of menopausal females in urban and rural populations. Verbal and written informed consent were taken from all the subjects before study participation. The study included post-menopausal females in the area.

After obtaining informed consent from the included females, the present study included females having menopause for more than a year, were aged less than 60 years and did not have any communicable diseases. The exclusion criteria for the study were subjects on anxiolytic drugs for

mental retardation, subjects on anti-depressants, subjects that underwent ovary removal secondary to radiotherapy for cervical cancer or underwent surgical removal, and subjects having menopause for unnatural causes.

For the present study, 822 females were randomly selected following the exclusion and inclusion criteria as mentioned. Among these females, 412 subjects were from the rural areas and 410 females were from the urban areas. In the subjects residing in rural areas, 4 females refused to participate in the study and 8 subjects did not meet the eligibility criteria making a final sample size of 400 rural females. In the urban group, 8 subjects left the survey for various reasons and 2 subjects did not meet the exclusion criteria making a final sample size of 400 urban females. The final sample size for the study was 800 subjects with 400 each from rural and urban areas.

After the final inclusion of the study females, they were interviewed with semi-structured and oral questionnaires. The questionnaire followed the guidelines of the MRS (menopause rating scale) which is an HRQoL (health-related quality of life) scale that helps in the assessment of the menopausal symptom severity. Also, the MRS (menopause rating scale) is a widely accepted protocol on the international level.<sup>6</sup>

The MRS (menopause rating scale) form was downloaded from the official website where the 11 questions from the questionnaire were verbally asked by the participants in the language understood by the subjects. The scheduled format was used by the author for recording the answers of each participant. The questionnaire was based on the sociodemographic data and variables of the study subjects, reproductive history, menstrual history, urogenital, psychological, psychosomatic, and vasomotor symptoms of study subjects. Other issues such as joint pain, fracture prevalence, vaginal itching, vaginal dryness, and post-menopausal bleeding were assessed in study subjects. Also, responses of study subjects concerning habits like smokeless tobacco consumption, alcohol intake, and practices of stress management were recorded in the study subjects.

The data gathered were analyzed using the SPSS software version 21.0 (IBM Corp., Armonk, NY, USA) with a paired t-test, chi-square test, and student's t-test. For significant variables, multivariate analysis was done. The data were expressed as mean and standard deviation and frequency and percentage. The p-value of <0.05 was taken as a statistical significance level.

## **RESULTS**

The present cross-sectional community-based survey study was aimed to comparatively assess the menopausal health issues in urban and rural females in India. The study also assessed the average menopausal age and assessed the variations and prevalence of menopausal females in urban and rural populations. The study assessed 800 females who attained menopause from both urban and rural populations. The included females were divided into two groups based on their residence in rural and urban areas. In rural and urban groups, the number of housewives was significantly higher compared to working females with  $p=0.001$ . Several extended family members were comparable in a rural and urban group with  $p=0.821$ . A significantly higher number of females were literate in the urban group compared to the rural group with  $p=0.0003$ .

The mean age of menarche was comparable in rural and urban groups with  $p>0.05$ . Marriage age and menopause age were significantly higher in an urban group with  $p<0.001$  for both. Menstrual history of regular and irregular was comparable in two groups with  $p=0.117$ . Bleeding time of  $\leq 5$  days and  $>5$  days was comparable in the two groups with  $p=0.09$ . Menstrual issues of scanty, heavy discharge, pain, and PCOS were comparable in rural and urban groups with  $p=0.07$  (Table 1).

On assessing various menopause-related issues in two groups of study subjects, it was seen that bone issues, fractures, joint pain, and osteoporosis were comparable in rural and urban groups with  $p=0.37$ . In genital issues, the post-menopausal bleed was seen in 12% ( $n=48$ ) subjects and 14% ( $n=56$ ) subjects respectively in rural and urban groups and vaginal itching and dryness were seen in 55% ( $n=220$ ) and 28% ( $n=112$ ) subjects in rural and urban groups respectively which was comparable with  $p=0.18$ . For urinary issues, burning, leakage or incontinence, and increased frequency of urination were comparable in rural and urban groups with  $p=0.957$ . For the vasomotor symptoms, it was seen that night sweats were reported by 64% ( $n=256$ ) subjects and 40% ( $n=160$ ) subjects from rural and urban groups respectively. Hot flushes were reported by 86% ( $n=344$ ) and 50% ( $n=200$ ) subjects from rural and urban groups respectively which depicted the non-significant difference with  $p=0.767$  (Table 2).

Concerning the comparison of various psychosomatic symptoms in two groups of study subjects, it was seen that increased body weight was seen in 40% ( $n=160$ ) subjects and 20% ( $n=80$ ) subjects respectively from rural and urban groups. Breast pain was reported by 32% ( $n=128$ ) subjects from both rural and urban group, whereas, muscle pain was reported by 86% ( $n=344$ ) subjects from rural and 80% ( $n=320$ ) subjects from urban group showing comparable difference with  $p=0.811$ . Irritability was seen in 80% ( $n=320$ ) subjects from rural and 58% ( $n=232$ ) subjects from urban groups respectively. Rapid heart rate, insomnia, and headache were comparable in subjects from rural and urban group subjects with  $p=0.241$ . Cold feet and hands were reported by 36% ( $n=144$ ) and 42% ( $n=168$ ) subjects from rural and urban groups respectively. Tingling and numbness of fingers were also comparable in the two groups with  $p=0.142$ . Lethargy and dizziness were seen in 54% ( $n=216$ ) and 58% ( $n=232$ ) subjects from rural and urban groups respectively (Table 2).

On assessing the lifestyle habits, alcohol intake was not reported by any subject of either group. Smokeless tobacco intake was significantly higher in subjects from rural areas with 85% ( $n=336$ ) subjects compared to 56% ( $n=224$ ) subjects from urban areas with  $p=0.002$ . The use of oral contraceptives was significantly higher in urban females with 22% ( $n=88$ ) subjects using oral contraceptives compared to 6% ( $n=24$ ) females from rural groups taking oral contraceptives with  $p=0.001$  (Table 3).

The cause of menopause was unknown to 11% ( $n=44$ ) of subjects from the rural group and 9% ( $n=36$ ) of subjects from the urban group. The majority of study subjects from urban areas considered menopause to be hormonal 89% ( $n=356$ ) subjects compared to 35% ( $n=140$ ) females from rural areas considering it hormonal. The cause of menopause was considered divine in 54% ( $n=216$ ) subjects from rural and 2% ( $n=8$ ) subjects from urban areas. The difference was

statistically significant with  $p=0.0001$ . For stress management, free hand exercise and brisk walking were utilized by 7% ( $n=28$ ) subjects from rural and 44% ( $n=176$ ) subjects from the urban group, and pranayama and yoga were practiced by 5% ( $n=20$ ) and 11% ( $n=44$ ) subject from rural and urban group respectively (Table 3).

## DISCUSSION

The present study assessed 800 females who attained menopause from both urban and rural populations. The included females were divided into two groups based on their residence in rural and urban areas. In rural and urban groups, the number of housewives was significantly higher compared to working females with  $p=0.001$ . The number of extended family members was comparable in a rural and urban group with  $p=0.821$ . A significantly higher number of females were literate in the urban group compared to the rural group with  $p=0.0003$ . The mean age of menarche was comparable in rural and urban groups with  $p>0.05$ . Marriage age and menopause age were significantly higher in an urban group with  $p<0.001$  for both. Menstrual history of regular and irregular was comparable in two groups with  $p=0.117$ . Bleeding time of  $\leq 5$  days and  $>5$  days was comparable in the two groups with  $p=0.09$ . Menstrual issues of scanty, heavy discharge, pain, and PCOS were comparable in rural and urban groups with  $p=0.07$ . These data were similar to the studies of Im EO et al<sup>7</sup> in 2019 and Sharma S et al<sup>8</sup> in 2015 where authors assessed subjects with demographic data, reproductive, and menstrual history comparable to the present study.

The study results showed that for various menopause-related issues in two groups of study subjects, it was seen that bone issues, fractures, joint pain, and osteoporosis were comparable in rural and urban groups with  $p=0.37$ . In genital issues, the post-menopausal bleed was seen in 12% ( $n=48$ ) subjects and 14% ( $n=56$ ) subjects respectively in rural and urban groups and vaginal itching and dryness was seen in 55% ( $n=220$ ) and 28% ( $n=112$ ) subjects in rural and urban groups respectively which was comparable with  $p=0.18$ . For urinary issues, burning, leakage or incontinence, and increased frequency of urination were comparable in rural and urban groups with  $p=0.957$ . For the vasomotor symptoms, it was seen that night sweats were reported by 64% ( $n=256$ ) subjects and 40% ( $n=160$ ) subjects from rural and urban groups respectively. Hot flushes were reported by 86% ( $n=344$ ) and 50% ( $n=200$ ) subjects from rural and urban groups respectively which depicted the non-significant difference with  $p=0.767$ . These results were consistent with the findings of Ansari MK et al<sup>9</sup> in 2022 and Solberg Li et al<sup>10</sup> in 2006 where bone issues, urinary issues, and vasomotor symptoms similar to the present study were reported by the authors in their respective studies.

It was seen that concerning the comparison of various psychosomatic symptoms in two groups of study subjects, it was seen that increased body weight was seen in 40% ( $n=160$ ) subjects and 20% ( $n=80$ ) subjects respectively from rural and urban groups. Breast pain was reported by 32% ( $n=128$ ) subjects from both rural and urban group, whereas, muscle pain was reported by 86% ( $n=344$ ) subjects from rural and 80% ( $n=320$ ) subjects from urban group showing comparable difference with  $p=0.811$ . Irritability was seen in 80% ( $n=320$ ) subjects from rural and 58% ( $n=232$ ) subjects from urban groups respectively. Rapid heart rate, insomnia, and headache were

comparable in subjects from rural and urban group subjects with  $p=0.241$ . Cold feet and hands were reported by 36% ( $n=144$ ) and 42% ( $n=168$ ) subjects from rural and urban groups respectively. Tingling and numbness of fingers were also comparable in the two groups with  $p=0.142$ . Lethargy and dizziness were seen in 54% ( $n=216$ ) and 58% ( $n=232$ ) subjects from rural and urban groups respectively. These findings were in agreement with the results of Shuster LT et al<sup>11</sup> in 2010 and Sung MK et al<sup>12</sup> in 2020 where psychosomatic symptoms reported by the authors were comparable to the symptoms reported in the present study.

Concerning the assessment of lifestyle habits, alcohol intake was not reported by any subject of either group. Smokeless tobacco intake was significantly higher in subjects from rural areas with 85% ( $n=336$ ) subjects compared to 56% ( $n=224$ ) subjects from urban areas with  $p=0.002$ . The use of oral contraceptives was significantly higher in urban females with 22% ( $n=88$ ) subjects using oral contraceptives compared to 6% ( $n=24$ ) females from rural groups taking oral contraceptives with  $p=0.001$ . These results were in line with Gold EB et al<sup>13</sup> in 2000 and Herber-Gast GC et al<sup>14</sup> in 2013 where similar lifestyle habits, oral contraceptive use, and tobacco use reported by the authors were comparable to the results of the present study.

On assessing the cause of menopause, it was unknown to 11% ( $n=44$ ) of subjects from the rural group and 9% ( $n=36$ ) of subjects from the urban group. The majority of study subjects from urban areas considered menopause to be hormonal 89% ( $n=356$ ) subjects compared to 35% ( $n=140$ ) females from rural areas considering it hormonal. The cause of menopause was considered divine in 54% ( $n=216$ ) subjects from rural and 2% ( $n=8$ ) subjects from urban areas. The difference was statistically significant with  $p=0.0001$ . For stress management, free hand exercise and brisk walking were utilized by 7% ( $n=28$ ) subjects from rural and 44% ( $n=176$ ) subjects from the urban group, and pranayama and yoga were practiced by 5% ( $n=20$ ) and 11% ( $n=44$ ) subject from rural and urban group respectively. These findings were by Koos S et al<sup>15</sup> in 2017 and Singhanian K et al<sup>16</sup> in 2020 where coping ways and menopause comparable to the present study were reported by the authors in their respective studies.

## CONCLUSIONS

Considering its limitations, the present study concludes a significant need for awareness of menopausal-age females concerning self-care and better management of the discomforts associated with menopause. The study results can help create awareness and corroborate the health status of menopausal females. However, further longitudinal studies over a broad geographic region can help in more clarity concerning the issue.

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**TABLES**

Parameters	Rural group		Urban Group		p-value
	n=400	%	n=400	%	
<b>Menstrual history</b>					
Regular	320	80	352	88	0.117
Irregular	80	20	48	12	
<b>Menstrual issues</b>					
Scanty discharge	136	34	160	40	0.07
Heavy discharge	264	66	240	60	
Pain	216	54	232	58	
PCOS/Others	24	6	80	20	
<b>Bleeding time</b>					
≤5 days	216	54	264	66	0.09
>5 days	184	46	136	34	
<b>Employment</b>					
Housewives	328	82	248	62	<b>0.001</b>
Working	72	18	152	38	
<b>Extended family members</b>					
1-4	216	54	232	58	0.821
5-8	160	40	144	36	
≥9	24	6	24	6	
<b>Literacy status</b>					
Literate	304	76	376	94	<b>0.0003</b>
Illiterate	96	24	24	6	
<b>Reproductive history</b>					
Menarche age	13.55±1.43		13.5±1.34		>0.05
Marriage age	20.02±2.65		27.74±4.47		< <b>0.001</b>
Menopause age	43.07±1.45		46.60±1.53		< <b>0.001</b>

**Table 1: Demographic data, menstrual, and reproductive status in two study groups**

Issues	Rural group		Urban Group		p-value
	n=400	%	n=400	%	
<b>Bone issues</b>					
Osteoporosis	192	48	164	41	0.37
Joint pain	344	86	320	80	
Fractures	128	32	76	19	
<b>Genital issues</b>					
Vaginal itching and dryness	220	55	112	28	0.18
Post-menopause bleed	48	12	56	14	
<b>Urinary issues</b>					
Burning	176	44	80	20	0.957
Incontinence/leakage	152	38	64	16	
Increased frequency	224	56	96	24	
<b>Psychosomatic symptoms</b>					



Increased weight	160	40	80	20	-
Breast pain	128	32	128	32	0.811
Muscle pain	344	86	320	80	
Irritability	320	80	232	58	-
Rapid heart rate	264	66	176	44	0.241
Insomnia	320	80	280	70	
Headache	216	56	128	32	
Cold hands and feet	144	36	112	28	
Fingers tingling	144	36	168	42	0.142
Fingers numbness	280	70	184	46	
Lethargy and dizziness	216	54	232	58	-
<b>Vasomotor symptoms</b>					
Night sweats	256	64	160	40	0.767
Hot flushes	344	86	200	50	

**Table 2: Various post-menopausal symptoms in two groups of study subjects**

Parameters	Rural group		Urban Group		p-value
	n=400	%	n=400	%	
<b>Menopause cause</b>					
Unknown	44	11	36	9	<b>0.0001</b>
Divine	216	54	8	2	
Hormonal	140	35	356	89	
<b>Lifestyle habits</b>					
Oral contraceptives	24	6	88	22	<b>0.001</b>
Smokeless tobacco	336	84	224	56	<b>0.002</b>
Alcohol	0	0	0	0	
<b>Stress management</b>					
Freehand/brisk walk/	28	7	176	44	0.116
Pranayama/yoga	20	5	44	11	

**Table 3: Lifestyle and stress management strategies in two study groups**