

A Study on the Comparison of Post-Menopausal Health in Rural and Urban Areas of District Muzaffarnagar

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ABSTRACT

Background: Menopause is a natural biological transition marked by permanent cessation of menstruation due to declining ovarian hormone levels. With increasing life expectancy, women now spend nearly one-third of their lives in the postmenopausal phase, often experiencing a wide range of physical, psychological, genitourinary, and musculoskeletal symptoms.

Aim & Objectives: To study the socio-demographic characteristics of postmenopausal women and to compare vasomotor, genitourinary, central nervous system, musculoskeletal, and physical activity-related symptoms among them.

Material and Methods: This community-based cross sectional descriptive study was conducted on 600 postmenopausal women aged 45–60 years, with 300 participants each from rural and urban areas, selected using systematic random sampling. Data were collected through a pre-tested bilingual questionnaire by face-to-face interviews after obtaining informed consent.

Results: Mean age was comparable in rural (52.28 ± 3.90 years) and urban (52.08 ± 4.33 years) women. Illiteracy was higher in rural areas (62%), and most were housewives (rural 90.3%, urban 75.3%). Urban women had higher BMI (28.42 vs 26.39 kg/m²). Vasomotor (45%) and psychological symptoms—anxiety (58.7%), depression (45%), irritability (56%)—were more common in urban women, while genitourinary symptoms such as frequent urination (38.7%) and burning micturition (20.3%) were higher in rural women ($p < 0.05$). Decreased stamina (59.3% vs 45.7%) and weakness (65% vs 38.7%) were significantly higher in urban women.

Conclusion: Postmenopausal health problems show distinct rural–urban variation influenced by socio-demographic and lifestyle factors. Area-specific health education, early identification, and targeted interventions are essential to improve the overall health and quality of life of postmenopausal women.

Keywords: Postmenopausal women, menopausal symptoms, vasomotor symptoms, genitourinary symptoms, psychological symptoms.

INTRODUCTION

Menopause is a phase characterized by the cessation of the monthly cycle for over 12 months, accompanied by a decline in the levels of estrogen and progesterone, the two principal hormones in the female body (World Health Organization [WHO], 1996).

^[1] Indian women often go through menopause between the ages of 48 and 55. Some women have early menopause between the ages of 45 and 50, while others experience "premature menopause," which happens naturally before the age of 40. According to studies, postmenopausal women are more susceptible to a number of health problems, such as obesity, cardiovascular disease, and osteoporosis. The number of postmenopausal women in India is rising as a result of the country's growing population. Therefore, postmenopausal women's health issues are receiving a lot of attention in India. ^[2]

Menopause is a natural transition that includes both biological and social changes related to the aging process, affecting a woman's self-perception and societal perception. ^[2] The menopausal transition is linked to hormonal alterations that may lead to various physical and mental problems. Psycho-social factors, such as attitudes and internal representations, significantly influence women's experiences of menopause; yet, there is less understanding of how these representations may vary across different menopausal stages. ^[3]

Due to the global rise in life expectancy, the majority of women are expected to live a further 20–30 years post-menopause, spending roughly one-third of their lives in a condition of estrogen insufficiency. ^[4] During menopause, women often encounter vasomotor symptoms (such as hot flashes and night sweats), psychosocial issues (including memory and mood alterations), medical complications (including sleep disturbances, urinary incontinence, skin changes, and weight gain), and sexual dysfunction (notably vaginal dryness and diminished sexual desire). Postmenopausal symptoms can endure for years following

the final menstrual period, with some women reporting these symptoms more than 10 to 15 years after their last menstruation. ^[5] Menopause is a universal occurrence; nevertheless, the prevalence of its symptoms varies significantly across individuals within various populations and even among individuals within the same group.

Prompt identification of post-menopausal symptoms and their timely intervention might mitigate this stressful condition in affected women. This study aims to elucidate the degree of pain caused by health concerns in post-menopausal women who are unable to communicate their problems owing to ignorance and reticence. This study will assess the incidence of post-menopausal symptoms in women from rural and urban locations to identify deficiencies and implement appropriate solutions. Furthermore, there is a paucity of research about the health state of post-menopausal women. This study will encourage the acknowledgment of menopausal symptoms as a legitimate medical issue rather than a matter to be concealed.

Aim & Objectives:

1. To study the socio-demographic characteristics of postmenopausal women in rural and urban areas of Muzaffarnagar district.
2. To compare vasomotor, genitourinary, central nervous system, musculoskeletal, and physical activity-related symptoms among postmenopausal women in rural and urban areas.

MATERIALS & METHODS

This community-based cross-sectional descriptive study was conducted in the field practice areas of the Rural and Urban Health Training Centres of the Department of Community Medicine, Muzaffarnagar Medical College, Muzaffarnagar, over a period of 12 months. Postmenopausal women aged 45–60 years were selected from registered families using systematic random sampling. Based on a prevalence of 47% and allowing for non-response, ^[6] a

total sample size of 600 women was included, with 300 women each from rural and urban areas. Data were collected using a pre-tested, pre-designed bilingual questionnaire through face-to-face interviews after obtaining informed consent. Anthropometric measurements, including height and weight, were recorded using standard procedures. Ethical approval was obtained from the Institutional Ethics Committee (MMC/IEC/2021/193), and confidentiality of participants was ensured.

Inclusion criteria:

1. Women in the age group of 45-60 years who have attained menopause.
2. Women who gave consent.
3. Psychologically stable women.

Exclusion criteria:

1. Uncooperative women.
2. Women who did not give consent.
3. Women in the age group <45 years and >60 years.
4. Women who didn't attain menopause.

Statistical Analysis

Data were entered in MS-Excel and results were expressed as proportions and percentages, and Chi-square test was applied. A p-value < 0.05 was considered statistically significant.

RESULT

Table 1 shows the mean age of participants was comparable in rural (52.28 ± 3.90 years) and urban (52.08 ± 4.33 years) areas. Most women were married in both rural (67%) and urban (62%) areas. Illiteracy was higher in rural women (62%). Most participants were housewives, especially in rural areas (90.3%), while urban areas had more working women (24.7%).

Figure 1 illustrate the distribution of the study participants according to their religion in rural and urban area. In rural area, 45.6 % women were Hindu and in urban area, 41% women were Hindu. The proportion of Muslim women in rural and urban area was

54.4% and 56.3% respectively. In urban area, 2.7% women were Sikh.

Figure 2 illustrates the distribution of study population based on their socio-economic status in both urban and rural areas. Based on Modified B.G. Prasad classification 2021, in rural area, majority of study population belonged to Class III i.e. 39.7% and in urban population, majority of study population belonged to Class II i.e. 41.6%.

Figure 3 illustrates the mean BMI in rural women was 26.39 kg/m^2 while in urban area, it was 28.42 kg/m^2 . Mean weight in rural women was 62.6 kg and in urban area, mean weight was 66.5 kg. Mean height in rural area was 154.1 cm while in urban women, it was 153.4 cm.

Table 2 shows the comparison of vasomotor and genitourinary symptoms. Vasomotor symptoms were found comparatively more in urban women (45% and 25.7%) than rural women; this was statistically significant. Frequent urination and burning micturition both were reported more in rural women (38.7% and 20.3%) than urban women, this was statistically significant.

Table 3 depicts psychological symptoms among postmenopausal women. Feelings of anxiety or nervousness were reported by 46% rural and 58.7% urban women. Weak memory was significantly more common among rural women (41.7%). A depressed mood was reported by 24% rural women and 45% urban women. Irritability and difficulty in sleeping were reported more frequently by urban women (56% and 57%, respectively) compared to rural women (34.3% and 42%), which was statistically significant.

Table 4 shows the comparison of skeletomuscular and physical activity symptoms. Muscular pain and joint pain both were slightly more in women of urban area (70.3% and 65.3% respectively) showing no statistical significance. Both symptoms related to physical activity i.e. decreased stamina and weakness were present more in women of urban area (59.3% and 65%) as compared to rural area

(45.7% and 38.7%), this was statistically significant also.

Table 1: Socio-demographic characteristics of the participants: (N=600)

Variant	Rural (n= 300) (%)	Urban (n=300) (%)	Total (N=600) (%)
Age Group (in years)			
45-50	98 (32.7)	126 (42)	224 (37.3)
50-55	117 (39)	73 (24.3)	190 (31.7)
55-60	85 (28.3)	101 (33.7)	186 (31)
Marital status			
Unmarried	18 (06)	11 (3.7)	29 (4.8)
Married	201 (67)	186 (62)	387 (64.5)
Widow	58 (19.3)	66 (22)	124 (20.7)
Divorced/ Separated	23 (7.7)	37 (12.3)	60 (10)
Education			
Illiterate	186 (62)	112 (37.3)	298 (49.7)
Primary	69 (23)	96 (32)	165 (27.5)
Secondary	31 (10.3)	58 (19.4)	89 (14.8)
Graduate/post-graduate	14 (4.7)	34 (11.3)	48 (8)
Occupation			
Housewife	271 (90.3)	226 (75.3)	497 (82.8)
Working	29 (9.7)	74 (24.7)	103 (17.2)

Table 2: Comparison of Vasomotor & genitourinary symptoms in women in rural and urban area: (N=600)

Symptom	Rural (n=300) (%)	Urban (n=300) (%)	Total (N=600) (%)	p value
Hot flushes				
Present	104 (34.7)	135 (45)	239 (39.8)	0.0097
Absent	196 (65.3)	165 (55)	361 (60.2)	
Night sweats				
Present	27 (09)	77 (25.7)	104 (17.3)	< 0.0001
Absent	273 (91)	223 (74.3)	496 (82.7)	
Frequent urination				
Yes	116 (38.7)	85 (28.3)	201 (33.5)	0.007
No	184 (61.3)	215 (71.7)	399 (66.5)	
Burning micturition				
Yes	61 (20.3)	42 (14)	103 (17.2)	0.04
No	239 (79.7)	258 (86)	497 (82.8)	

Table 3: Comparison of Central Nervous system symptoms in women of rural and urban area: (N=600)

Symptom	Rural (n=300) (%)	Urban (n=300) (%)	Total (N=600) (%)	p value
Nervousness				
Yes	138 (46)	176 (58.7)	314 (52.3)	0.0019
No	162 (54)	124 (41.3)	286 (47.7)	
Weak memory				
Yes	125 (41.7)	86 (28.7)	211 (35.2)	0.0008
No	175 (58.3)	214 (71.3)	389 (64.8)	
Depressed mood				
Yes	72 (24)	135 (45)	207 (34.5)	< 0.00001
No	228 (76)	165 (55)	393 (65.5)	
Irritability				
Yes	103 (34.3)	168 (56)	271 (45.2)	<0.00001
No	197 (65.7)	132 (44)	329 (54.8)	
Difficult sleeping				
Yes	126 (42)	171 (57)	297 (49.5)	0.0002
No	174 (58)	129 (43)	303 (50.5)	
Headache				
Yes	188 (62.6)	205 (68.3)	393 (65.5)	0.05
No	112 (37.4)	95 (31.7)	207 (34.5)	

Table 4: Comparison of Skeletomuscular system symptoms in women of rural and urban area: (N=600)

Symptom	Rural (n=300) (%)	Urban (n=300) (%)	Total (N=600) (%)	p value
Muscular pain				
Yes	199 (66.3%)	211 (70.3%)	410 (68.3)	> 0.05
No	101 (33.7%)	89 (29.7%)	190 (31.7)	
Joint pain				
Yes	184 (61.3%)	196 (65.3%)	380 (63.3)	> 0.05
No	116 (38.7%)	104 (34.7%)	220 (36.7)	
Decreased stamina				
Yes	137 (45.7)	178 (59.3)	315 (52.5)	0.0008
No	163 (54.3)	122 (40.7)	285 (47.5)	
Weakness				
Yes	116 (38.7)	195 (65)	311 (51.8)	< 0.00001
No	184 (61.3)	105 (35)	289 (48.2)	

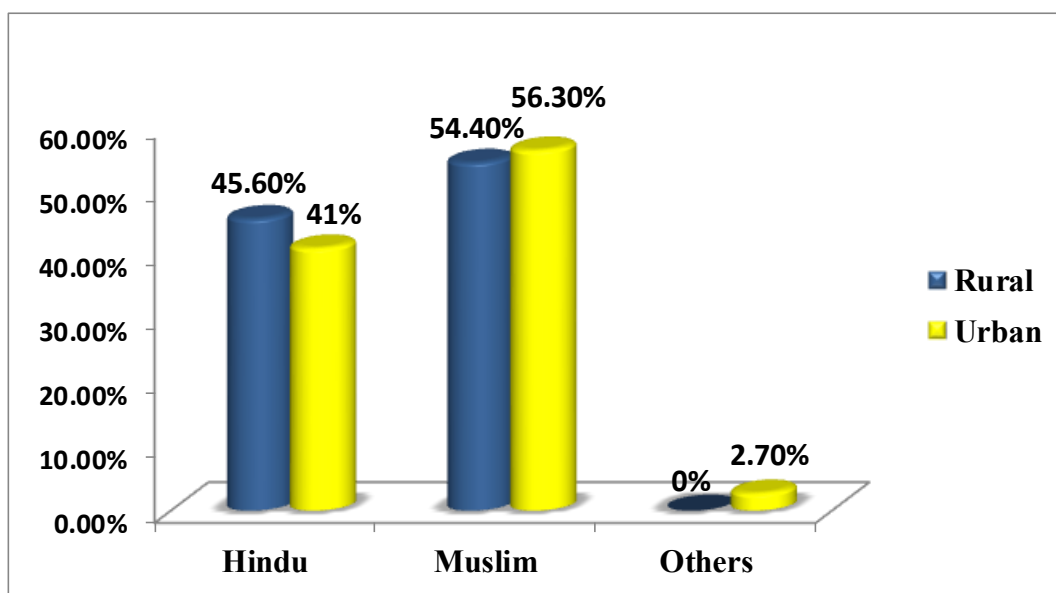


Figure 1: Religion- wise distribution of women in rural and urban area: (N=600)

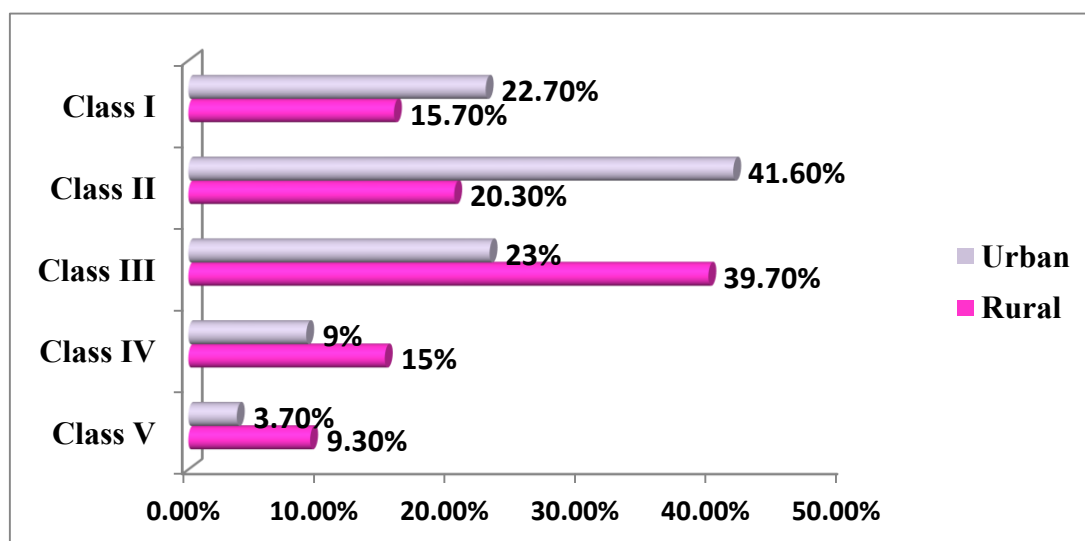


Figure 2: Socio-economic status wise distribution of women in rural and urban area: (N=600)

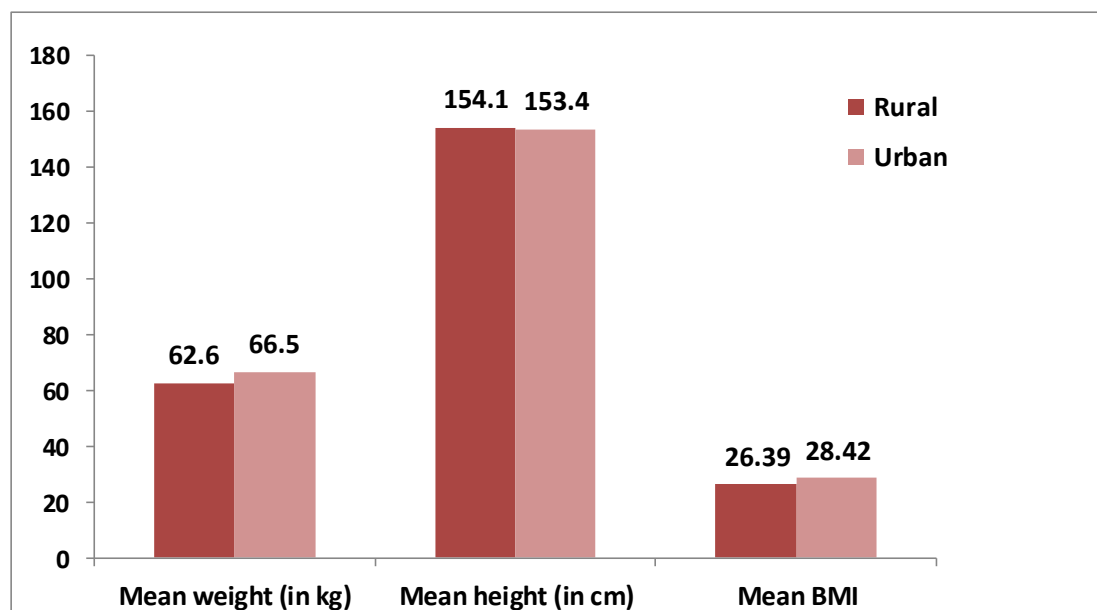


Figure 3: Anthropometric measurements of women in rural and urban area:

DISCUSSION

In the present study, the majority of women belonged to the 45–50 years age group (37.3%), with rural women predominantly aged 50–55 years and urban women 45–50 years. Similar age distributions were reported by Garg et al. (2015) [7] Makara-Studzińska et al. (2015) [8] and Punia et al. (2016). [9] Most women were married (64.5%), comparable to the findings by Joseph et al. (2014) [10] and Sultan et al. (2017). [11] Nearly half of the women were illiterate, particularly in rural areas, similar to observations by Joseph et al. (2014) [9] and Singh et al. (2016). [2]

In the present study, the mean BMI was higher in urban women (28.42) than rural women (26.39), possibly due to differences in diet and physical activity. Similar mean BMI values were reported by Gonçalves et al. (2016). [12]

Vasomotor symptoms were significantly more common among urban women, with hot flushes and night sweats reported in 45% and 25.7%, respectively, compared to 34.7% and 9% in rural women. Comparable prevalence was observed by Singh et al. (2014) [2] and Garg et al. (2015) [7], whereas higher prevalence was reported by Pathak et al. (2018) [12] and Punia et al. (2017). [9]

Genitourinary symptoms were more frequent among rural women, with frequent urination and burning micturition reported in 38.7% and 20.3%, respectively, compared to urban women. Similar findings were reported by Garg et al. (2015), [7] and Punia et al. (2017), [9] while Pathak et al. (2018) [13] reported comparable urinary symptoms in urban women.

In the present study, anxiety or nervousness was reported by 46% rural and 58.7% urban women. Similar findings were reported by Punia et al. (2017) [9] in rural women and Pathak et al. (2018) [13] in urban women, though Garg et al. (2015) [7] reported a lower prevalence. Weak memory was significantly higher among rural women in the present study; however, higher prevalence was reported by Pathak et al. (2018). [13] Depressed mood was more common among urban women (45%) than rural women (24%). Similar rural findings were reported by Punia et al. (2017), [9] while higher urban prevalence was observed by Pathak et al. (2018). [13] Irritability and sleep disturbances were more frequent among urban women, consistent with findings by Singh et al. (2014) [2], Punia et al. (2017) [9], and Pathak et al. (2018). [13] Headache was reported by 65.5% women, with no rural–urban difference; this prevalence was higher than

reported by Singh et al. (2014).^[2] Muscle and joint pain were the most common symptoms overall, consistent with study by Vijayalakshmi et al. (2013)^[14]

In the present study, decreased stamina and weakness were significantly more common among urban women (59.3% and 65%) compared to rural women (45.7% and 38.7%). Similar findings were reported by Nisar and Soho (2009)^[15] in Pakistan, who observed lack of energy and reduced physical strength in 68.8% and 66.3% women, respectively. Singh et al. (2014)^[2] from Delhi reported tiredness in 40.1% of postmenopausal women. A higher prevalence of physical symptoms was noted by Karmakar et al. (2017)^[16] in rural West Bengal, where decreased physical strength and stamina were reported in 93% and 88% women, respectively.

CONCLUSION

The study demonstrated notable rural–urban differences in postmenopausal health. While the mean age of women was comparable in both areas, urban women had higher BMI and body weight. Vasomotor, psychological, and physical activity-related symptoms were significantly more common among urban women, whereas genitourinary symptoms and tiredness were more prevalent in rural women. Skeletomuscular complaints were common in both groups without significant difference. Overall, postmenopausal symptoms were influenced by socio-demographic and lifestyle factors related to place of residence, highlighting the need for targeted, area-specific menopausal health interventions.

Declaration by Authors

Ethical Approval: Approved.

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REFERENCES

1. World Health Organization. Research on the menopause in the 1990s: report of a WHO scientific group. *World Health Organ Tech Rep Ser.* 1996; 866:1–107. <https://iris.who.int/server/api/core/bitstream/s/bf711ec7-6601-4ea6-baba-0c7e1622c608/content>
2. Singh A, Pradhan SK. Menopausal symptoms of postmenopausal women in a rural community of Delhi, India: A cross-sectional study. *J Midlife Health.* 2014 Apr;5(2):62-7. doi: 10.4103/0976-7800.133989.
3. Brown L, Brown V, Judd F, Bryant C. It's not as bad as you think: menopausal representations are more positive in postmenopausal women. *J Psychosom Obstet Gynaecol.* 2018 Dec;39(4):281-288. doi: 10.1080/0167482X.2017.1368486.
4. Gold EB, Crawford SL, Avis NE, Crandall CJ, Matthews KA, Waetjen LE, Lee JS, Thurston R, Vuga M, Harlow SD. Factors related to age at natural menopause: longitudinal analyses from SWAN. *Am J Epidemiol.* 2013 Jul 1;178(1):70-83. doi: 10.1093/aje/kws421.
5. Minkin MJ, Reiter S, Maamari R. Prevalence of postmenopausal symptoms in North America and Europe. *Menopause.* 2015 Nov;22(11):1231-8. doi: 10.1097/GME.0000000000000464.
6. Shukla R, Ganjiwale J, Patel R. Prevalence of Postmenopausal Symptoms, Its Effect on Quality of Life and Coping in Rural Couple. *J Midlife Health.* 2018 Jan-Mar;9(1):14-20. doi: 10.4103/jmh.JMH_34_16.
7. Garg R, Rawat R, Pathak M, Sharma S, Sharma A. Menopausal symptoms among post-menopausal women of North India: a cross-sectional study. *J South Asian Feder Menopause Soc.* 2015;3(1):3–5. DOI:10.5005/jp-journals-10032-1060
8. Makara-Studzińska M, Kryś-Noszczyka K, Jakiel G. The influence of selected socio-demographic variables on symptoms occurring during the menopause. *Prz Menopauzalny.* 2015 Mar;14(1):20-6. doi: 10.5114/pm.2015.48637.
9. Punia A, Lekha S, Punia MS. Assessment of menopausal problems among rural women using modified menopause rating scale. *International Journal of Medical Science and Public Health.* 2017 May 1;6(5):873-

878.
DOI:10.5455/ijmsph.2017.1165712122016
10. Joseph N, Nagaraj K, Saralaya V, Nelliyanil M, Rao PJ. Assessment of menopausal symptoms among women attending various outreach clinics in South Canara District of India. *J Midlife Health*. 2014 Apr;5(2):84-90. doi: 10.4103/0976-7800.133996.
 11. Sultan S, Sharma A, Jain NK. Knowledge, attitude and practices about menopause and menopausal symptoms among midlife school teachers. *Int J Reprod Contracept Obstet Gynecol* [Internet]. 2017 Nov. 23 [cited 2026 Apr. 27];6(12):5225-9. Available from: <https://www.ijrcog.org/index.php/ijrcog/article/view/3798>
 12. Gonçalves JT, Silveira MF, Campos MC, Costa LH. Overweight and obesity and factors associated with menopause. *Cien Saude Colet*. 2016 Apr;21(4):1145-56. English, Portuguese. doi: 10.1590/1413-81232015214.16552015.
 13. Pathak, Nidhi; Shivaswamy, M. S. Prevalence of menopausal symptoms among postmenopausal women of urban Belagavi, Karnataka. *Indian Journal of Health Sciences and Biomedical Research (KLEU)* 11(1):p 77-80, Jan–Apr 2018. | DOI: 10.4103/kleuhsj.kleuhsj_204_17
 14. Vijayalakshmi S, Chandrababu R, Eilean Victoria L. Menopausal transition among Northern Indian Women. *Nitte Univ J Health Sci* 2013; 3:73-9. DOI: 10.1055/s-0040-1703658
 15. Nisar N, Sohoo NA. Frequency of menopausal symptoms and their impact on the quality of life of women: a hospital based survey. *J Pak Med Assoc*. 2009 Nov;59(11):752-6.
 16. Karmakar N, Majumdar S, Dasgupta A, Das S. Quality of life among menopausal women: A community-based study in a rural area of West Bengal. *J Midlife Health*. 2017 Jan-Mar;8(1):21-27. doi: 10.4103/jmh.JMH_78_16.
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