International Journal of Community Medicine and Public Health
Linu M et al. Int J Community Med Public Health. 2026 Jun;13(6):2829-2835
https://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: https://dx.doi.org/10.18203/2394-6040.ijcmph20261761

Original Research Article

Quality of life of postmenopausal women in rural area of Northern Kerala: a community based cross-sectional study

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Received: 02 January 2026
Revised: 25 May 2026
Accepted: 27 May 2026

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ABSTRACT

Background: Menopausal health requires greater attention in India due to increasing life expectancy and the growing population of postmenopausal women. Awareness regarding menopausal problems remains inadequate, especially among rural women, where menopause is often not openly discussed. This study aimed to assess the quality of life (QoL) of postmenopausal women in rural areas and examine its association with socio-demographic factors.
Method: A community-based cross-sectional study was conducted among 120 postmenopausal women in Cheruthazham Panchayath from December 2021 to May 2023. Four wards were selected by simple random sampling, and 30 women from each ward were recruited consecutively. Data were collected through direct interviews using the MENQoL questionnaire and analysed using SPSS version 24.
Results: The mean age of participants was 52.59±3.31 years, and the mean age at menopause was 48.88±3.70 years. Most women were Hindus (87%), married (77%), and homemakers (52.5%). Comorbidities were present in 63% of women. Previous use of hormone replacement therapy (HRT) was reported by 9%.
The overall QoL mean score was 2.84±1.2, indicating a mild decline in QoL. Vasomotor symptoms had the highest mean score (4.09±2.5), with hot flushes being the commonest symptom (63.3%). Psychosocial symptoms were reported by 83%, mainly anxiety (47.5%), while physical symptoms were reported by 92%, with tiredness being most common (65.8%). Significant associations were observed between age and QoL, age at menopause and psychosocial domain, and HRT use and QoL.
Conclusion: Postmenopausal women showed a mild decline in QoL, with vasomotor, psychosocial, and physical symptoms being commonly reported.

Keywords: Quality of life, Postmenopausal women, Socio-demographic factors, Comorbidities

INTRODUCTION

One of the most critical stages of women's lives is menopause. Menopause is one point in a continuum of life stages for women and marks the end of their reproductive years, which characterizes the transition from fertility to infertility.[1] The word Menopause is derived from Greek words “Meno” (month) and “pausis” (a pause, a cessation). Menopause refers to the permanent end of menstruation resulting from loss of ovarian activity and is usually confirmed after 12 consecutive months without menstruation.[1] Although a natural part of reproductive ageing, menopause does not affect all women the same.

Duration of the menopause transition, age at onset of natural menopause, and menopausal symptoms-type, severity, and duration, all vary and can be affected by both modifiable (e.g., obesity, smoking) and non-modifiable (e.g., race, ethnicity, socioeconomic status) factors.[3] The main health concerns of postmenopausal women include vasomotor symptoms, urogenital atrophy,

osteoporosis, cancer, decreased cognitive function, sexual problems and metabolic changes that predispose to cardiovascular disease and diabetes. The World Health Organization defines quality of life as an individual's perception of their position in life within the cultural and value systems in which they live, and in relation to their goals, expectations, standards, and concerns.[4] In menopausal women, quality of life usually refers to health-related quality of life, which reflects the impact of menopausal symptoms on daily living.

More than 80% of women experience physical or psychological symptoms during the menopausal transition, which may cause distress, disrupt routine activities, and reduce quality of life. Menopausal health is an important public health issue in India because of rising life expectancy and the increasing number of women entering the post-reproductive period.

Many women experience significant menopausal symptoms that can impair quality of life, but these concerns are frequently underreported due to sociocultural factors and low awareness. As a result, many women do not seek timely attention for menopausal problems.

Women above 50 years comprised about 24% of the female population in Kerala according to the 2011 Census.[5] Yet, menopausal health has remained under-recognized in both clinical practice and medical education. Since women spend a significant portion of their lives after menopause, there is a clear need to improve health services for this phase of life. At present, India does not have a specific health program focused on postmenopausal women.

In India, menopause is often surrounded by silence, particularly among rural women. Very few studies have explored menopause at the local level in rural settings. Since a large proportion of India's population lives in rural areas, there is a clear need to direct health services toward postmenopausal women in these communities. Against this background, the present study aims to assess the quality of life of postmenopausal women in a rural area of north Kerala and to examine its association with selected sociodemographic factors.

METHODS

This community based cross-sectional study was conducted in Cheruthazham Panchayath, Kannur district of Kerala state for 18 months, from December 2021 to May 2023. The study included post-menopausal women in the area, who attained menopause in the last 5 years. Those women who have undergone hysterectomy, severely ill and those who are not able to comprehend the questions were excluded from the study. Sample size was calculated using the formula: n= Z2σ2/d2. Substituting the value of mean score of quality of life as 112.47 and standard deviation as 28.8 from the study by Senthilvel et al; Assessment of symptoms and quality of life among postmenopausal women in a tertiary care hospital, J Midlife Health. 2018.[6] The estimated sample size was 86.6. The sample size for this study was 120.

Cheruthazham Panchayath was stratified geographically according to direction, namely north, south, east and west regions. One ward was selected from each region by Simple random sampling using lottery method and a total of 4 wards were selected. Selection of houses from each ward was done by Consecutive sampling till 30 postmenopausal women were obtained from each of the 4 wards making the sample size of 120. If more than one postmenopausal woman was present in the house one of them was selected using lottery method.

Data was collected by direct face to face interview using the MENQOL QUESTIONNAIRE- which is a standard validated menopause specific questionnaire.The MENQOL Questionnaire consists of a total of 29 items in a Likert-scale format. The four domains of quality of life of postmenopausal women were vasomotor domain (items 1–3), psychosocial domain (items 4–10), Physical domain (items 11–26) and sexual domain (items 27–29). Items pertaining to a specific symptom are rated as present or not present, and if present, how bothersome on a '0' (not bothersome) to '6' (extremely bothersome) scale. Means are computed for each subscale by dividing the sum of the domain's items by the number of items within that domain. Scoring was done by converting the subject response (the item raw data score) to a conversion score (a score for further analyses), in the following manner.

Table 1: Conversion score of subject response and interpretation.

Subject response	Conversion score	Interpretation of conversion score
No	1	Individual does not experience the item
Yes 0	2	Individual experiences the item but is 'not at all bothered' by the experience
1	3	Individual experiences the item and is minimally bothered with raw score 1
2	4	Equivalent of a bothersome raw score of 2
3	5	Equivalent of a bothersome raw score of 3
4	6	Equivalent of a bothersome raw score of 4
5	7	Equivalent of a bothersome raw score of 5
6	8	Equivalent of a bothersome raw score of 6

Each domain is scored separately. After conversion, each domain mean ranges from 1 to 8.[7,8] The overall questionnaire score was the mean of the domain means. Score 1-2-no decline in QOL, 2.01-4–mild decline, 4.01-6–moderate decline and 6.01-8 – severe decline in QOL.

The data was coded, entered in Microsoft Excel 2019 spreadsheet and was analyzed using SPSS 21. Continuous variables were expressed as mean, standard deviation, median and interquartile range. Categorical variables as frequencies and percentages. Inferential statistical techniques like Chi-square test, Fisher's exact test (for cell count less than 5) was used to test significance of association between categorical variables. 'p' value of less than 0.05 was taken as significant. As the data was normally distributed, one-way Anova test was used to compare means. Then Post-hoc LSD test was applied to test the significance in between the groups of associated factors. Spearman correlation test was used to assess the correlation between the domains of quality of life.

RESULTS

A total of 120 women were included in the study, who had attained menopause in the past 5 years. The mean age of the study population was 52.59 (±3.306) years and mean age at menopause was 48.88 (±3.695) years. The minimum age at menopause was 35 years and maximum age was 56 years. Premature menopause was seen in 1.6%.

Majority of the women (87%) belong to Hindu religion and three generation family (39%). Married women constituted 77%. Majority (50.8%) of the women were having two children. Literacy rate was 100% in our study. Majority of the women had high school education and above. Majority (52.5%) of the postmenopausal women were home makers. According to Modified B G Prasad scale, majority of the women belonged to middle class family (38.3%) and lower middle-class family (26.7%) (Table 2).

In this study, postmenopausal women who were having comorbidities constituted 63%. The most common comorbidities were hypertension 30% and diabetes mellitus 18.3%. Among the women who had comorbidity, 24% were on irregular treatment according to their statement. Hypertension and dyslipidemia were the comorbidities for which they were on irregular treatment. Hormone replacement therapy (HRT) was taken by 9% of the women previously. No addictions were noted in any of the women. The overall QoL mean score was 2.84±1.2, which showed mild decline in QoL of the women in this study. Majority (57.5%) had mild decline in QoL. Majority of the women (95%) had experienced postmenopausal symptoms. The percentage of women suffering from menopausal symptoms like physical, psychosocial, vasomotor, and sexual symptoms were 92%, 83%, 69%, and 42% respectively. Considering the severity of the symptoms, Vasomotor domain had the highest score (4.09±2.5) and sexual domain had the lowest score (1.97±1.53) compared to other domains (Figure 1). Majority (69%) of the women were having vasomotor symptoms. Hot flushes (63.3%) were the most common vasomotor symptom.

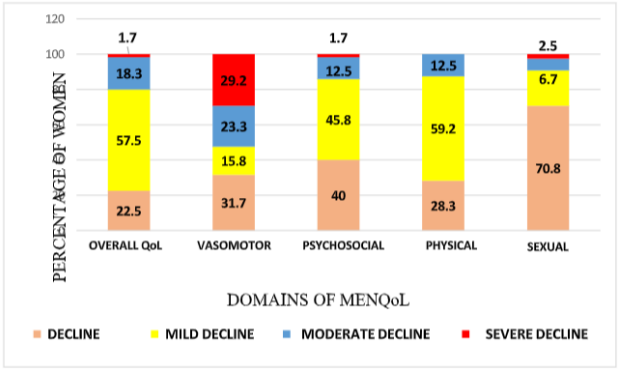

Figure 1: Frequency distribution of categories of quality of life in different domains (n=120).

In the study, 83% were having psychosocial symptoms. 'Feeling anxious' (47.5%) was the most common psychosocial symptom. The mean score of the psychosocial domain was 2.59±1.32. Majority (45.8%) belong to mild decline in QoL category. The most common symptom observed was the physical symptoms, seen in 92%. 'Feeling tired' was the most common physical symptom seen in 65.8%. The mean score of physical domains was 2.7±1.09. Majority (59.2%) were having mild decline in QoL in physical domain. In 42% of women sexual symptoms were present. 'Decrease in sexual desire' (35.8%) was the most common symptom in the sexual domain. The mean score for sexual domain was 1.97±1.53. Majority (70.8%) were having no decline in QoL in sexual domain.

The correlation between the different domains showed that vasomotor domain and psychosocial domain; physical domain and psychosocial domain; and physical domain and sexual domain were positively correlated. There was statistically significant association between current age of the women and their quality of life. Those in the lower age group were having only mild decline in QoL than those in the higher age group.

There was statistically significant association between age at menopause and psychosocial symptoms, higher proportion of women (50%) who have attained menopause at the age <=50 years have no decline in QoL in the psychosocial domain compared to those who attained menopause at >50 years. There was significant association between history of HRT and all the domains. It was significantly associated with the overall Quality of life also. No significant associations were obtained between QoL or any of its domains and sociodemographic characteristics like education, occupation, socio-economic status, marital status etc.

Table 2: Sociodemographic characteristics of the women (n=120).

Variable	Category/Value	Frequency (%)/Mean±SD
Age of women	Mean±SD	52.59±3.31years
Age at menopause	Mean±SD	48.88±3.69 years
Religion	Hindu	104 (87)
	Muslim	14 (12)
	Christian	2 (1)
Family type	Three-generation	47 (39)
	Nuclear	44 (37)
	Joint	29 (24)
Marital status	Married	92 (77)
	Widow	20 (17)
	Divorcee	5 (4)
	Unmarried	3 (2)
Number of children (n=118)	Two children	60 (50.8)
	Three children	28 (23.3)
	One child	27 (22.5)
	No child	2 (1.7)
Literacy	Literate	100%
Education	High school	71 (59.2)
	Intermediate	21 (17.5)
	Middle school	10 (8.3)
	Graduate	9 (7.5)
	Primary school	9 (7.5)
Occupation	Homemaker	63 (52.5)
	Unskilled worker	39 (32.5)
	Semi-skilled worker	11 (9.2)
	Others	7 (5.8)
Socioeconomic status	Middle class	46 (38.3)
	Lower middle class	32 (26.7)
	Upper middle class	20 (16.7)
	Upper class	13 (10.8)
	Lower class	9 (7.5)

Table 3: Postmenopausal symptoms of the women in each domain.

Postmenopausal symptoms	Frequency (%)	Mean score ±SD	Domain score
Vasomotor symptoms			
Hot flushes	76 (63.3)	4.7±2.94	4.09±2.5
Night sweats	68 (56.7)	3.84±2.7	
Sweating	66 (55)	3.75±2.7	
Psychosocial symptoms			
Dissatisfied with personal life	32 (26.7)	2.03±1.82	2.59±1.32
Feeling anxious or nervous	57 (47.5)	3.08±2.34	
Poor memory	36 (30)	2.11±1.88	
Accomplishing less than used to	56 (46.7)	3±2.32	
Feeling depressed	55 (45.8)	2.93±2.27	
Being impatient with other people	57 (47.5)	3.04±2.36	
Feeling of wanting to be alone	26 (21.7)	1.94±1.9	
Physical symptom			
Flatulence or gas pains	24 (20)	1.7±1.53	2.7±1.09
Aching in muscles and joints	76 (63.3)	4.05±2.67	
Feeling tired or worn out	79 (65.8)	3.83±2.31	
Difficulty in sleeping	56 (46.7)	3±2.36	
Aches in back of neck or head	45 (37.5)	2.46±2.11	

Continued.

Postmenopausal symptoms	Frequency (%)	Mean score ±SD	Domain score
Decrease in physical strength	62 (51.7)	2.82±1.97	
Decrease in stamina	59 (49.2)	2.63±1.85	
Lack of energy	66 (55)	2.89±1.92	
Dry skin	43 (35.8)	2.38±2.02	
Weight gain	46 (38.3)	2.37±1.92	
Increased facial hair	8 (6.7)	1.21±0.81	
Changes in appearance, texture or tone of skin	41 (34.2)	2.14±1.7	
Feeling bloated	61 (50.8)	3.45±2.61	
Low backache	54 (45)	3.03±2.53	
Frequent urination	46 (38.3)	2.59±2.14	
Involuntary urination when laughing or coughing	48 (40)	2.66±2.22	
Sexual symptoms			
Decrease in sexual desire	43 (35.8)	2.29±1.91	
Vaginal dryness	25 (20.8)	1.79±1.66	1.97±1.53
Avoiding intimacy	27 (22.5)	1.83±1.69	
Overall mean score of QoL: 2.84±1.2			

DISCUSSION

QoL is multidimensional and subjective, varying with individual circumstances. Most postmenopausal women experience physical, psychological, or vasomotor symptoms that disrupt daily life and diminish QoL. Factors such as physical health, sociodemographic, culture, psychology, and lifestyle influence symptom perception and severity.[6,9,10] The mean age of the women was lower in our study compared to the studies done in Punjab, Hyderabad and Puducherry where the mean age was higher.[9-11] This may be due to the fact that, this study included women in their early post-menopausal phase. Mean menopausal age was 48.88 (±3.695) years, with premature menopause in 1.6%-lower than India's 3.7% estimate but comparable to Delhi's 1.6%.[12,13]

Most (49.2%) reached menopause at 50–54 years, differing from rural Delhi's 55.2% at 45–49 years.[12] Later menopause associates with longer survival, reduced cardiovascular risk and osteoporosis, but higher breast, endometrial, and ovarian cancer risk.[14] Indian studies report 45–49 years as typical, earlier than developed nations (e.g., US: 51.3 years) due to genetic, socioeconomic, and lifestyle differences.[9,11,14-19] Half of the women (50.8%) had two children, aligning with Kerala's findings (>50% with two pregnancies/deliveries).[20] Higher parity links to increased somatic symptoms.[21] Postmenopausal comorbidities rise, including metabolic syndrome (32%–70% increase), type 2 diabetes, and hypertension (41% prevalence).[22] Therefore, it is important to understand potential comorbidities found in postmenopausal women.[22] The incidence of these comorbid diseases is expected to increase gradually as the population ages. The Indian menopause society, located in New Delhi reports that there are currently 65 million women over the menopausal age in India affected with menopausal symptoms.[23] In this study, majority of the women (95%) had experienced postmenopausal symptoms. Physical symptoms were most prevalent (92%), but vasomotor domain scored highest (4.09±2.5), with sexual domain lowest (1.97±1.53), indicating severe vasomotor domain has greater impact on QoL.

The common symptoms were tiredness (65.8%), hot flushes/muscle-joint aches (63.3%), night sweats (56.7%), lack of energy/sweating (55%). This matches Iranian and Arabic studies but contrasts Punjab (physical>psychosocial) and West Bengal (physical>psychosocial>vasomotor>sexual).[9,19,24-26] Kerala's physical dominance was 70.5%.[20] Cultural factors explain all these variations: Arab views mark menopause as life's end (as they no longer have the ability to reproduce), Indians attribute symptoms to aging (hiding sexual issues due to taboos and cultural beliefs), while Western women report more vasomotor distress.[27]

Moreover, reproductive hormones seem to play a significant role in this regard. In this period, dramatic changes occur in hormone levels, including severe reduction in estrogen, which results in vasomotor symptoms (VMS). Overall QoL score (2.84±1.2) indicated mild decline, consistent with Hamadan, Punjab, and Gujarat (mild-moderate).[9,24,28] MENQOL scoring varies due to inconsistent use of mean-of-domain-means method.[8] As most women are engaged in their works, either household chores or occupational works many may be neglecting their problems unless it becomes so severe that it disrupts their daily activities. How each women perceives these symptoms will be different, what was mild for one will be severe for the other. Vasomotor symptoms affected most (65%–80%, lasting 1–10+ years), aligning with prior Indian studies; severe in 29.2%, comparable to Maharashtra/Karnataka but milder than Punjab.[9,29] Prevalence varies culturally (0% Mayan to 80% Dutch).[1,6,916,17]

Psychosocial domain mean: 2.59±1.32 (mild in 45.8%), with anxiety/nervousness most common (47.5%). This echoes Kerala but differs from Maharashtra (less accomplishment), Karnataka (depression), and Puducherry (poor memory), likely due to sociocultural/educational differences.[6,11,16,17] Kerala reports 90.7% emotional issues, linked to estrogen fluctuations affecting serotonin/norepinephrine and social expectations and role changes due to advancing age may be a contributing factor. We had lower score compared to other studies.[9,16,30,31] Physical domain mean: 2.7±1.09 (mild in 59%; none severe) most common was tiredness (65.8%), muscle-joint aches (63.3%), and low energy (55%). This contradicts other studies in India, where physical domain was having highest score, frequency and severity.[6,9-11,16,17,26]

Sexual symptoms absent in 58%, typical in India due to taboos, cultural beliefs or hesitation to open up.[10,16,25,26] Correlation between the domains matched with Polish and Telangana studies.[10,32] Younger women had milder QoL decline than older, as in prior work.[9,16,26] HRT users showed greater symptom severity and QoL decline, possibly from symptom recurrence post-withdrawal (lowest effective dose/shortest duration used).[33] Asian HRT use is low (8.8%), linked to poorer health-related QoL.[34] These findings highlight early postmenopausal vasomotor dominance in Kerala, with mild overall QoL impact, underscoring cultural and regional influences.

Limitations

The present study was limited by its self-reported and cross-sectional design, which prevented establishing a temporal relationship between cause and effect. As menopausal experiences are multidimensional, qualitative studies and longitudinal or interventional studies may provide deeper understanding of related factors. Additionally, quality of life was assessed only for the previous one month, whereas menopausal symptoms among participants had varied durations ranging from months to years.

CONCLUSION

The overall QoL of the postmenopausal women showed mild decline in QoL in our study. Mean age at menopause in the study group was 48.88 (±3.695) years. Majority of the women (95%) had experienced postmenopausal symptoms. The percentage of women suffering from menopausal symptoms like physical, psychosocial, vasomotor, and sexual were 92%, 83%, 69%, and 42% respectively. Vasomotor domain had the highest score and sexual domain had the lowest score compared to other domains. Significant association was found between age and quality of life; age at menopause and psychosocial domain; h/o HRT and QoL.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Linu M, Kumaran JA. Quality of life of postmenopausal women in rural area of Northern Kerala: a community based cross-sectional study. Int J Community Med Public Health 2026;13:2829-35.