Original Article

A Prospective and Cross-Sectional Study on Quality of Life among Postmenopausal Women in a Coastal Semi Urban area of India

Senthilvel Vasudevan*[1], Sumathi Senthilvel[2]

*[1]Assistant Professor of Statistics (Biostatistics), Department of Pharmacy Practice, College of Pharmacy, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia. [2]Associate Editor of International Journal of Medical Sciences and Nursing Research, and Formerly Assistant Professor of Nursing, Amrita College of Nursing, Amrita Deemed University, Kochi, Kerala, India.

Abstract

Background: Menopause is the natural process in a woman. Some hormonal changes will happen during the period of menopause. In this study, our main objectives were to find the association between the classifications of demographic variables and the various scores of domains and to find the association of various predictors variables of different domains of quality of life among post-menopausal women.
Materials and Methods: We have conducted a prospective and cross-sectional study on Quality of Life (QOL) among one hundred and fifty Postmenopausal Women in Coastal Semi Urban area of Kerala India in the year 2018**.** Data was collected by using Menopause Specific quality of Life – 29 questionnaire with 7 Likert scale (0 – 7). The association between various scores of domains of QOL scores and selected socio-demographic variables by using analysis of variance test analysis and the association of various predictors of different domains of quality of life of post-menopausal women by using bi-variate logistic regression analysis. Data were analysed using SPSS 21.0 version.
Results: Overall mean age of post-menopausal women was 55.7 ± 4.8 (Range: 50 – 65) years. Higher QOL scores were showed higher risk. In our study, using MENQOL scores showed significant associations with p–value<0.05 in QOL based on body mass index, educational status, socio economic status, number of siblings, and marital status.
Conclusion: From study findings, we have concluded that low and normal body mass index, higher educational status, upper to lower middle socio-economic status, a smaller number of siblings, and un-marital status were increased the quality of life and reduces menopausal symptoms problems among post-menopausal women. So, further effective intervention programs are needed in this study areas of the population to develop/increase the quality of life among post-menopausal women.
Key Words: post-menopausal women, symptoms, quality of life, prospective and cross-sectional study, coastal area

Article Summary: Submitted: 14-July-2022 **Revised:** 22-August-2022 **Accepted:** 12-September-2022 **Published:** 30-September-2022

Quick Response Code:

Web Site

http://ijmsnr.com/

DOI

10.55349/ijmsnr.2022231421

Corresponding Author: Dr. Senthilvel Vasudevan, Assistant Professor of Statistics, Department of Pharmacy Practice, College of Pharmacy, King Saud Bin Abdulaziz University for Health Sciences, Riyadh, KSA. **Email ID:** senthilvel99@gmail.com

Introduction

Menopause is the natural process in a woman. Some hormonal changes will happen during the period of menopause. [1] Majority of the women were believed menopause is a personal problem and it will give healthy troubles at the time of menopause period. [2] Mensuration has stopped at the time to post-menopause stage. Women has entered the late-menopause stage after three to six years of post-menopause then they are facing more symptoms of urogenital atrophy. [3] Normally, menopause has happening in between the age group of 40 to 55 and those women are having the habit smoking and chronic diseases may have earlier menopause. [4]

In a study by Arounassalame has estimated menopause symptoms were gave negative effect with QOL of post-menopausal women. [5] Most of the women were affected by one or more menopausal symptoms and the Kerala women needs more awareness about menopause. [6] Awareness is very poor in a study in Idukki district by Joseph et al. [7] and it is only increasing the QOL among post-menopausal women (PMW). In a review study by Ghosh et al. [8] Nutritious, improving in the lifestyle and self-care were reduce the problems in the life of a PWM. So, our study is very important about QOL study among post-menopausal women. The main objective of our study to find the various responses of menopausal symptoms and to find association between classifications of demographic variables with each domains score of quality of life among postmenopausal women.

How to cite this article: Vasudevan S, Senthilvel S. A Prospective and Cross-Sectional Study on Quality of Life among Postmenopausal Women in a Coastal Semi Urban area of India. Int J Sci and Med Res 2022;2(3):14-21

Materials and Methods

Study Design: In this study, we have done a prospective and cross-sectional study.

Setting of the study, participants, and time period: We have done a prospective and cross-sectional study with one hundred and fifty post-menopausal women were collected randomly in Amrita Hospital, Ponekkara, Kochi, Kerala, India in the period of January to April in the year of 2018.

Sample Size Calculation of the study participants: The main physical symptom for menopause was emotional symptoms [9] The prevalence of emotional problems of the main symptom of menopause in women in Kerala was 90.7% [10] Hence, the sample size was determined by the prevalence formula, Sample Size = N = $4PQ/e^2$. Here, prevalence (P) = 90.7%, Q = 100 – P = 100 – 90.7 = 9.3%; statistical power = 80%; confidence level = 95% and with margin of error (e) = 10% of Prevalence = 9.07, then the calculated minimum sample size was 42. But we have recruited and incorporated one hundred and fifty post-menopausal women in this study.

Inclusion Criteria: In this study, we have selected and incorporated women with aged ≥50 years those who came as a bystander with patients to hospital.

Exclusion Criteria: Patients with aged less than fifty years and those who had diabetes, other diseases like renal diseases, chronic diseases, coronary heart diseases and other severe communicable diseases.

Details about Questionnaire Menopause Specific quality of Life: In our present study, we have used the standard questionnaire Menopause Specific Quality of Life (MENQOL – 29) for measuring QOL of post-menopausal women. This questionnaire MENQOL consists of twenty-nine questions and four domains. In that, three questions related Vasomotor (Domain-1), seven questions related to psychosocial (Domain-2), sixteen questions related to Physical (Domain-3), and three questions related to Sexual (Domain-4). In the questionnaire, totally 7 Likert Scale (0 – 7). A score 'zero (0)' means a woman respond as 'No' and it was denoted 'women had no symptom in the past month', 'one' means that particular women have experienced of the symptoms, but it wasn't bothersome at all, and 'two' through 'seven' were showed increasing levels of bother experienced by women from the symptom from '1' through '6' in MENQOL – 29 questionnaire. Hence, we have calculated each domain was calculated between zero (0) and seven (7). High scores were indicated the MENQOL and subscales indicate the low QOL of post-menopausal women.

Our questionnaire had two sections. Section–1 contained the socio demographic variables like age, educational status, occupational status, number of family members in the family, socio economic status, marital status, height, weight, and body mass index (BMI) as per World Health Organization (WHO) classifications. Section–2 contained the Quality-of-Life domains vasomotor, psychosocial, physical, and sexual. Data collection was by two properly pre-trained final year B.Sc. Nursing students by face-to-face interview method over a period 15 minutes per patients.

Data management: Data were managed and complied using Microsoft Excel 2010 [Office 360, Microsoft Ltd., USA] and analyzed SPSS 20.0 version [IBM Ltd., Chicago, IL, USA].

Statistical Analysis: The continuous variables were given by mean and standard deviation, and dichotomous variables were expressed as frequency and proportions. The association between various scores of domains of QOL scores and selected socio-demographic variables by using analysis of variance (ANOVA) test analysis and the association of various predictors of different domains of quality of life of post-menopausal women by using bi-variate logistic regression analysis found odds ratio [11] and 95% confidence intervals. p–value was taken as statistical significance at less than 0.05.

Ethical Clearance: Before conducting our study, we had received the prior approval and permission was obtained from both institutional research committee and institutional ethical committee of Amrita Institute of Medical Sciences, Kochi, Kerala. Questionnaire was prepared in English and in the local Malayalam languages. We have explained the importance of our study participants very clearly at the time of data collection and oral consents were obtained from the study participants.

Results

In our study, we have recruited and incorporated post-menopausal women aged ≥50 years. Overall mean age of the post-menopausal women was 55.7 ± 4.8 (Range: 50 – 65) years. Most 51 (34.0%) of post-menopausal women were in 55 – 59 years, followed by 45 (30.0%) were in 60 – 64 years and very few 14 (9.3%) were in age group at 65 years. Overall average age of post-menopausal women was 57.6 ± 4.7 (Range: 50 – 65) years. Most of the women were in the age group of 50–64 years. Among 150 post-menopausal women, majority 84 (56.0%) of women were normal weight (18.5 – 24.9) Kg/m^2, followed 47 (31.3%) were overweight, 15 (10%) were obese and above (≥30) Kg/m^2 and very less 4 (2.7%) were under-weight (< 18.5) Kg/m^2. Overall average of BMI was found as 26.5 ± 4.7 Kg/m^2.

Nearly 69 (46%) of women were educated primary school, 59 (39.3%) high school, 16 (10.7%) were graduated and very less 6 (4.0%) number of women were educated as higher secondary school. According to socio-economic status, most 63 (42.0%) of the population were under lower-middle-class-III, followed 34 (22.7%) under upper-middle-class-III and very low number of 8 (5.3%) were lower-class-V. 46 (30.7%) had two children and most of the women had one and two children in their family. Most 116 (77.3%) of the women were married, 32 (21.3%) were widow and very few 2 (1.3%) were unmarried women. 28 (18.7%) post-menopausal women were managed the symptoms. **[Table – 1]**.

The highest and lowest response in frequency and percentages among post-menopausal women in four domains as follows: 113 (75.3%) post-menopausal women were responded as 'hot flushes or flashes' and 87 (58.0%) were responded as 'night sweats' in vasomotor domain; 122 (81.3%) were responded as 'feeling anxious or nervous, and 59 (39.3%) were responded as 'feelings of wanting to be alone' in psychosocial domain; 136 (90.7%) were responded as 'aching in muscles and joints'; and very low 13 (8.7%) were responded as 'increased facial hair' in physical domain; 148 (98.7%)

were responded as 'decrease in my sexual desire' and 46 (30.7%) were 'vaginal dryness' in sexual domain **[Table – 2].**

Table: 1 Distribution of socio-economic characteristics among postmenopausal women

Socio-economic Characteristics	Post-Menopausal Women n (%)
Age Groups (in years)	
50 – 54	40 (26.7)
55 – 59	51 (34.0)
60 – 64	45 (30.0)
at 65 years	14 (9.3)
Body Mass Index (Kg/m^2)	
Under Weight (< 18.5)	4 (2.7)
Normal Weight (18.5 – 24.9)	84 (56.0)
Over Weight (25.0 – 29.9)	47 (31.3)
Obese and above (≥ 30)	15 (10.0)
Educational Status	
Primary School	69 (46.0)
High School	59 (39.3)
Higher Secondary School	6 (4.0)
Graduates	16 (10.7)
Occupational Status	
Government Employee	5 (3.3)
Private Employee	16 (10.7)
Housewives	127 (84.7)
Retired Persons	2 (1.3)
Socio Economic Status	
Upper Class I	11 (7.3)
Upper Middle Class II	34 (22.7)
Lower Middle Class III	63 (42.0)
Upper Lower Class IV	34 (22.7)
Lower Class V	8 (5.3)
Number of Siblings	
No Child	8 (5.3)
One Child	30 (20.0)
Two Child	46 (30.7)
Three Child	33 (22.0)
Four Child	27 (18.0)
Five Child	6 (4.0)
Marital Status	
Married	116 (77.3)
Unmarried	2 (1.3)
Widow	32 (21.3)
Management of menopausal symptoms	
Yes	28 (18.7)
No	122 (81.3)

Table–2 Distribution of responses in frequency and percentages among post-menopausal women

SL. No.	Questions	Post-Menopausal Women Responses n (Yes)	Percentage
a. Vasomotor Domain			
1	1. Hot Flushes or Flashes	113	75.3
2	2. Night Sweats	87	58.0
3	3. Sweating	101	67.3
b. Psychosocial Domain			
4	1. Dissatisfaction with my personal life	101	67.3
5	2. Feeling anxious or nervous	122	81.3
6	3. Poor memory	104	69.3
7	4. Accomplishing less than I need to	118	78.7
8	5. Feeling depressed, down or blue	119	79.3
9	6. Being impatient with other people	80	53.3
10	7. Feelings of wanting to be alone	59	39.3
c. Physical Domain			
11	1. Passing gas or gas pains	92	61.3
12	2. Aching in muscles and joints	136	90.7
13	3. Feeling tired or worn out	130	86.7
14	4. Difficulty sleeping	104	69.3
15	5. Aches in back of neck or head	76	50.7
16	6. Decrease in physical strength	131	87.3
17	7. Decrease in stamina (energy to keep going)	124	82.7
18	8. Lack of energy	126	84.0
19	9. Dry skin	60	40.0
20	10. Weight gain	81	54.0
21	11. Increased facial hair	13	8.7
22	12. Changes in appearance, texture, or tone of my skin	60	40.0
23	13. Feeling bloated	74	49.3
24	14. Low backache	120	80.0
25	15. Frequent urination	90	60.0
26	16. Involuntary urination when laughing or coughing	72	48.0
d. Sexual Domain			
27	1. Decrease in my sexual desire	148	98.7
28	2. Vaginal dryness	46	30.7
29	3. Avoiding intimacy	146	97.3

The overall mean score QOL domains of vasomotor domain was 10.0 ± 6.6 (Range: 0–21) and median = 10, mean score of psychosocial domain was 24.0 ± 9.6 (Range: 0–44) and median = 25.0, physical domain was domain was 3.8 ± 1.9 (Range: 0–9) and median = 3.0. In the MENQOL questionnaire most mean scores in vasomotor, psychosocial, physical

Table: 3 Association between classification of demographic variables with each domains score among postmenopausal women

List of variables	No. of Post-Menopausal Women n (%)	Various Domains and its Descriptive Statistics			
		Vasomotor	Psychosocial	Physical	Sexual
		Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD
Age Group (in year)					
50 – 54	40 (26.7)	10.08 ± 6.94	23.73 ± 7.97	44.23 ± 17.65	3.75 ± 1.66
55 – 59	51 (34.0)	10.12 ± 6.16	24.29 ± 10.31	43.96 ± 18.41	4.22 ± 2.09
60 – 64	45 (30.0)	9.11 ± 6.63	24.67 ± 8.89	48.96 ± 17.19	3.47 ± 2.04
At age of 65	14 (9.3)	7.86 ± 1.90	21.64 ± 13.38	49.57 ± 18.19	3.71 ± 1.27
F – value		0.581	0.377	0.954	1.281
p – value		0.629	0.770	0.416	0.283
Body Mass Index (Kg/m^2)					
Under Weight (< 18.5)	4 (2.7)	9.50 ± 8.23	17.75 ± 13.96	29.75 ± 16.22	2.25 ± 0.50
Normal Weight (18.5 – 24.9)	84 (56.0)	8.87 ± 6.74	22.13 ± 8.23	42.04 ± 17.08	3.96 ± 2.19
Over Weight (25.0 – 29.9)	47 (31.3)	10.22 ± 6.27	25.64 ± 10.13	50.40 ± 17.86	3.76 ± 1.51
Obese and above (≥ 30)	15 (10.0)	10.40 ± 7.40	28.50 ± 10.36	51.10 ± 14.65	3.90 ± 2.47
F – value		0.529	2.939	4.123	1.045
p – value		0.663	**0.035**	**0.008**	0.375
Educational Status					
Primary School	69 (46.0)	10.83 ± 6.40	27.33 ± 6.90	50.96 ± 16.78	3.86 ± 1.97
High School	59 (39.3)	9.03 ± 6.44	22.25 ± 10.47	43.14 ± 18.00	3.61 ± 1.82
Higher Secondary School	6 (4.0)	7.17 ± 4.07	20.83 ± 4.31	37.83 ± 11.48	3.50 ± 1.87
Graduates	16 (10.7)	7.25 ± 7.87	17.31 ± 12.39	38.75 ± 18.76	4.56 ± 2.00
F – value		1.936	6.995	3.792	1.108
p – value		0.126	**0.0001**	**0.012**	0.348
Occupational Status					
Government Employee	5 (3.3)	10.60 ± 7.34	24.20 ± 6.00	45.80 ± 25.70	3.00 ± 1.41
Private Employee	16 (10.7)	8.75 ± 7.33	17.88 ± 2.55	40.31 ± 16.69	4.75 ± 2.24
Housewives	127 (84.7)	9.59 ± 6.47	24.76 ± 0.82	46.80 ± 17.76	3.74 ± 1.87
Retired Persons	2 (1.3)	14.00 ± 0.00	24.50 ± 0.50	45.00 ± 12.73	3.50 ± 0.71
F – value		0.421	2.521	0.626	1.686
p – value		0.738	0.060	0.599	0.173
Socio Economic Status					
Upper Class I	11 (7.3)	10.09 ± 7.22	24.73 ± 9.55	46.73 ± 21.36	4.73 ± 1.95
Upper Middle Class II	34 (22.7)	8.53 ± 6.68	21.26 ± 10.05	42.56 ± 18.70	4.18 ± 2.14
Lower Middle Class III	63 (42.0)	8.73 ± 6.63	22.98 ± 9.98	42.59 ± 16.04	3.44 ± 1.68
Upper Lower Class IV	34 (22.7)	11.71 ± 5.94	27.29 ± 8.12	53.53 ± 14.42	3.82 ± 1.78
Lower Class V	8 (5.3)	11.25 ± 6.59	28.75 ± 5.80	55.50 ± 25.65	4.00 ± 2.73
F – value		1.535	2.471	3.158	1.565
p – value		0.195	**0.047**	**0.016**	0.187
Number of Siblings					
0 – 1	38	7.71 ± 6.41	20.63 ± 10.02	43.71 ± 20.03	3.92 ± 1.99
2 – 3	79	10.22 ± 6.46	25.81 ± 8.69	46.08 ± 16.41	3.89 ± 1.97
4 – 5	33	10.27 ± 6.82	23.58 ± 10.33	48.70 ± 18.55	3.55 ± 1.68
F – value		2.118	3.932	0.689	0.438
p – value		0.124	**0.022**	0.504	0.646
Marital Status					
Married	116 (77.3)	9.92 ± 6.66	24.17 ± 9.48	46.30 ± 17.16	4.09 ± 2.00
Unmarried	2 (1.3)	1.00 ± 1.41	7.00 ± 9.90	19.50 ± 7.78	2.00 ± 0.00
Widow	32 (21.3)	8.94 ± 6.13	24.47 ± 9.32	46.81 ± 19.62	2.94 ± 1.22
F – value		2.040	3.298	2.300	5.880
p – value		0.134	**0.040**	0.104	**0.003**

and sexual domains belong to the items of 'hot flushes or flashes' was 3.9 ± 2.5 (median = 5); 'feeling anxious or nervous' was 4.3 ± 2.4 (median = 5); 'aching in muscles and joints' was 4.9 ± 2.0 (median = 5); 'decrease in my sexual desire' was 1.7±1.0 (median=1) respectively. The mean QOL score of post-menopausal women was very low in age at 65 years in the domains like vasomotor, psychosocial and sexual except physical domain. No significant association was showed among 4 domains. Body mass index was associated with psychosocial and physical domains, and women with obese and above ($\geq$ 30 Kg/m^2) had higher mean QOL scores in all the domains. Low QOL scores was found in psychosocial, physical and sexual domains except vasomotor domain had low QOL score in normal weight.

Educational status was showed significant associations with psychosocial and physical domains with $p<0.05$, and women with graduates had low QOL scores. The mean QOL scores was more in all the domains except sexual domain. Occupational status wasn't showed association with any QOL domains. Socio-economic status was showed significant associations with psychosocial and physical domains with $p<0.05$, except vasomotor and sexual domains. Lower-class-V had higher mean QOL scores in psychosocial, physical domains; a little bit high mean QOL scores in vasomotor and sexual domains. Upper-Class-I had high mean QOL in sexual domain; Upper-Middle-Class-II and Class-II have had more or less equal mean QOL in all the domains.

Number of siblings was showed a significant association with psychosocial domain with $p<0.05$. Number of siblings with (0-1) had highest mean QOL score in sexual domain; number of siblings (2-3) had next highest mean QOL scores in psychosocial and sexual domains; and number of siblings (4-5) had highest mean QOL scores in vasomotor and physical domains. Marital status was showed significant associations psychosocial and sexual domains with $p>0.05$ except vasomotor and physical domains. Married had highest mean QOL scores in vasomotor and sexual domains; unmarried had low mean QOL scores in all the domains; and widow had highest mean QOL score in psychosocial and physical domains **[Table-3].**

According to the results of logistic regression analysis after adjusted variables, overweight and obesity had increased risk of vasomotor, psychosocial, physical and sexual domains above the median. In educational status, high school had increased risk of vasomotor, psychosocial, and physical domains about median except sexual domain. According to socio-economic status, Upper Lower Class-IV and Lower Class-V have had increased risk of all domains about the median. In our present study, socio economic status of upper middle class-II and number of siblings with 0-1, decreased the risk of vasomotor, psychosocial and physical scores above the median respectively. In marital status of unmarried, has decreased the risk of vasomotor, psychosocial, physical and sexual scores above the median as shown in **[Table-4].**

Discussion

The menopausal symptoms are affecting severely on women in the way of social life and her quality of life. In our present study, the overall mean age of the post-menopausal women was 55.7 years. Whereas, in a study by Syamala et al. [12] has revealed that an Indian woman are now entering into menopause as early as at 30 years of age. A review study on global study by Chadha et. al. [13] has revealed the average age was 46.7 years. Menopause can happen in women in their age of 40s or 50s. Whereas, in a study by Singh and Pradhan have revealed that average age of menopause in women as very low than our present study. [14] Menopausal symptoms are leads worst QOL among pre- and post-menopausal women. [15]

We have found hot flushes or flushes was the most responded symptoms in the vasomotor domain among post-menopausal women. Similar results were found by Bansal and Aggarwal, Freedman [16] in their review article. [17] Furthermore, Thurston and Joffe have found hot flashes was a cardinal symptom of menopause. [18] In our present study, both physical and psychiatric problems were more among all 4 domains. The same type of results was found by Karmakar et al. [19] Those who were having less no. of siblings in their family have had lower mean QOL scores in all the domains. Similar type of results was found by Yakout et. al. [20], and Kalarhoudi et al. [21]. Based on the present study, marital status of post-menopausal women was significance with psychosocial and sexual domains of QOL.

Conclusion

From our study findings, we have concluded that low and normal body mass index, higher educational status, upper to lower middle socio-economic status, a smaller number of siblings, and un-marital status had good quality of life and with few menopausal symptom's problems among post-menopausal women. So, further effective intervention programs are needed in this study areas of the population with large sample size to improve/develop/increase the quality of life among post-menopausal women.

Limitations of our study: In our present study some limitations were there. The main limitation was the women were asked to recall symptoms in the past four weeks. Although recall could be differentially biased on different characteristics of women, but we believe that this is a reasonable time frame for recall many of our study questionnaire. Our study was a cross sectional study, we have calculated association of the factors and quality of life of post-menopausal women. We were unable to evaluate the impact of change in the QOL over a time. Therefore, study studies were needed to measure the QOL of post-menopausal women.

Acknowledgment: The authors like to present their appreciation and great thanks to the manager and all the lovely staff of the health development and training center for their support during the period of the training course. Also, they express their sincere thanks to the participants for their effort in the training course.

Author Contributions: SV, SS – Conceived and designed the analysis, Collected data; SV, SS – data analysis, wrote the full paper;

SV, SS – Guided throughout the process, Contributed data or analysis tools. SV, SS – Wrote and checked the article.

Table: 4 List of variables, bivariate logistic regression analysis, odds ratio, 95% confidence intervals and p values among various domains

Variables	Bivariate Logistic Regression Analysis of Various Domains							
	Vasomotor		Psychosocial		Physical		Sexual	
	OR (95% CI)	p	OR (95% CI)	p	OR (95% CI)	p	OR (95% CI)	p
Age Group (in year)								
50 – 54	1		1		1		1	
55 – 59	1.46 (0.63 – 3.35)	0.375	0.28 (0.06 – 1.42)	0.124	1.18 (0.51 – 2.70)	0.703	1.19 (0.52 – 2.74)	0.678
60 – 64	0.92 (0.39 – 2.17)	0.851	0.72 (0.11 – 4.54)	0.726	1.47 (0.62 – 3.47)	0.383	0.42 (0.17 – 1.03)	**0.056**
At age of 65	0.40 (0.11 – 1.48)	0.170	0.11 (0.02 – 0.63)	**0.013**	1.07 (0.33 – 3.52)	0.912	1.36 (0.41 – 4.53)	0.619
Body Mass Index (Kg/m^2)								
Under Weight (< 18.5)	0.46 (0.05 – 4.65)	0.510	0.45 (0.04 – 4.81)	0.509	0.52 (0.05 – 5.25)	0.578	-	-
Normal Weight (18.5 – 24.9)	1		1		1		1	
Over Weight (25.0 – 29.9)	1.70 (0.86 – 3.35)	0.125	1.29 (0.45 – 3.68)	0.639	2.30 (1.16 – 4.58)	**0.017**	1.20 (0.61 – 2.34)	0.603
Obese and above (≥ 30)	1.38 (0.37 – 5.21)	0.635	1.35 (0.15 – 1.96)	0.788	3.89 (1.11 –13.66)	**0.034**	0.44 (0.11 – 1.85)	0.263
Educational Status								
Primary School	2.86 (0.90 – 9.12)	0.076	N/A	N/A	2.30 (0.75 – 7.04)	0.145	0.42 (0.13 – 1.33)	0.138
High School	1.86 (0.57 – 6.01)	0.302	2.35 (0.71 – 7.76)	0.161	1.41 (0.45 – 4.37)	0.556	0.36 (0.11 – 1.16)	0.087
Higher Secondary School	0.44 (0.04 – 4.82)	0.501	N/A	N/A	0.33 (0.03 – 3.58)	0.364	0.45 (0.07 – 3.09)	0.420
Graduates	1		1		1		1	
Occupational Status								
Government Employee	1		1		1		1	
Private Employee	0.75 (0.13 – 4.49)	0.753	0.55 (0.05 – 6.27)	0.630	0.90 (0.12-7.03)	0.920	2.50 (0.32 – 9.53)	0.382
Housewives	0.67 (0.14 – 3.12)	0.612	2.40 (0.25 – 23.20)	0.451	1.57 (0.25 – 9.73)	0.626	1.34 (0.22 – 8.31)	0.751
Retired Person	N/A	N/A	N/A	N/A	1.50 (0.06 – 0.63)	0.810	1.50 (0.06 – 0.64)	0.810
Socio Economic Status								
Upper Class I	1.04 (0,29 – 3,77)	0.950	1.89 (0.22 – 16.42)	0.565	1.19 (0.33 – 4.30)	0.795	2.49 (0.66 – 9.39)	0.178
Upper Middle Class II	0.77 (0.33 – 1,81)	0.555	1.09 (0.34 – 3.51)	0.880	0.88 (0.37 – 2.07)	0.771	2.03 (0.87 – 4.74)	0.101
Lower Middle Class III	1		1		1		1	
Upper Lower Class IV	2.02 (0.86 – 4.73)	0.106	3.02 (0.62 –4.66)	0.171	3.95 (1.59 – 9.84)	**0.003**	1.27 (0.55 – 2.93)	0.583
Lower Class V	2.08 (0.46 – 9.48)	0.342	N/A	N/A	2.37 (0.52 – 10.81)	0.264	1.42 (0.33 – 6.21)	0.639

Socio Economic Status								
Upper Class I	1.04 (0,29 – 3,77)	0.950	1.89 (0.22 – 16.42)	0.565	1.19 (0.33 – 4.30)	0.795	2.49 (0.66 – 9.39)	0.178
Upper Middle Class II	0.77 (0.33 – 1,81)	0.555	1.09 (0.34 – 3.51)	0.880	0.88 (0.37 – 2.07)	0.771	2.03 (0.87 – 4.74)	0.101
Lower Middle Class III	1		1		1		1	
Upper Lower Class IV	2.02 (0.86 – 4.73)	0.106	3.02 (0.62 –4.66)	0.171	3.95 (1.59 – 9.84)	**0.003**	1.27 (0.55 – 2.93)	0.583
Lower Class V	2.08 (0.46 – 9.48)	0.342	N/A	N/A	2.37 (0.52 – 10.81)	0.264	1.42 (0.33 – 6.21)	0.639
Number of Siblings								
0 – 3	1		1		1		1	
4 and above	N/A	-	0.70 (0.23 – 2.13)	0.530	1.12 (0.52 – 2.42)	0.777	0.62 (0.28 – 1.36)	0.230
Marital Status								
Married	1		1		1		1	
Unmarried	N/A	-	0.14 (0.01 – 2.32)	0.169	N/A	-	N/A	-
Widow	1.29 (0.58 – 2.83)	0.532	1.33 (0.36 – 4.93)	0.673	0.62 (0.28 – 1.36)	0.233	0.26 (0.11 – 0.63)	**0.003**

Here, SV – Senthilvel Vasudevan; SS – Sumathi Senthilvel

Conflict of Interest: The authors are not having any kind of conflict of interest in this study.

Source of funding: We didn't receive any kind of financial support from the parent institution or any other financial institutions or organizations.

References

1. Menopause: Overview. **Available from:** https://www.nhs.uk/conditions/menopause/ **[Las Accessed on 25th November 2020]**
2. Loutfy I, Aziz FA, Dabbous NI, and Hassan MHA. Women's perception and experience of menopause: a community-based study in Alexandria, Egypt. Eastern Mediterranean Health Journal 2006;12(Supplement 2):S93-S106.
3. Peacock K, Ketvertis KM. Menopause. [Updated 2020 Nov 21]. In: Stat Pearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2020 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK507826/ **PMID:** 29939603
4. Elder JA, Thacker HL. Disease Management: Menopause. Cleveland Clinic – Center for Continuing Education (Last reviewed: February 2016). **Available from:** http://www.clevelandclinicmeded.com/medicalpubs/diseasemanagement/womens-health/menopause/ **[Last Accessed on: 2nd December 2020]**
5. Arounassalame GKP. The quality of life during and after menopause among rural women. Journal of Clinical and Diagnostic Research 2013;7(1):135-139. **PMID:** 23450244 **DOI:** http://dx.doi.org/10.7860/jcdr/2012/4910.2688
6. Borker SA, Venugopalan PP, and Bhat SN. Study of menopausal symptoms, and perceptions about menopause among women at a rural community in Kerala. J Midlife Health 2013;4(3):182-187. **PMID:** 24672192
7. Joseph LA, Varghese AP. Prevalence of menopausal symptoms and perceptions about menopause among postmenopausal women attending Gynaecology OPD at GMC Idukki, India. Int J Rep Cont Obes and Gyn 2017;6(2):413-416. **DOI:** http://dx.doi.org/10.18203/2320-1770.ijrcog20170065
8. Ghosh D, Singha PS, Parida P. Postmenopausal Health of Indian Women: A Review. Current Women's Health Reviews 2019;15(1):64-69. **DOI:** http://dx.doi.org/10.2174/1573340481366617120115072 5
9. Menopause: Patient Care and Health Information – Diseases & Conditions. MAYO CLINIC **Available from:** https://www.mayoclinic.org/diseases-conditions/menopause/symptoms-causes/syc-20353397 **[Last Accessed on: 26th October 2020]**
10. Borker SA, Venugopalan PP, Bhat SN. Study of menopausal symptoms, and perceptions about menopause among women at a rural community in Kerala. J Midlife Health 2013;4(3):182-187. **PMID:** 32029993

11. Odds ratio and Confidence Intervals by using the online link: https://www.medcalc.org/calc/odds_ratio.php **[Accessed on 24th November 2020]**
12. Syamala TS, Sivakami M. New Delhi: Benett Coleman and Co; 2007. India Women Reaching Menopause at 30: Study, in Times of India. **Available from:** https://zeenews.india.com/news/health/health-news/women-in-india-attaining-menopause-at-30-study_1271.html **[Last Accessed on: 20th December 2020]**
13. Chadha N, Chadha V, Ross S, Sydora BC. Experience of menopause in aboriginal women: a systematic review. Climacteric 2016;19(1):17–26. **PMID:** 26653073
14. Singh A and Pradan SK. Menopausal symtoms of postmenopausal women in a rural community of Delhi, India: A Cross-Sectional Study. J Midlife Health 2014;5(2):62-67. **PMID:** 24970983
15. Nirmala R, Lenora J, Alwis G, and Lekamwasam S. Prevalence and Severity of Menopausal Symptoms and the Quality of Life in Middle-aged Women: A Study from Sri Lanka. Nurs Res Pract 2019;2019:1-9. **PMID:** 31354992 **DOI:** https://doi.org/10.1155/2019/2081507
16. Freedman RR. Menopausal hot flashes: mechanisms, endocrinology, treatment. J Steroid Biochem Mol Biol 2014;142:155-120 **PMID:** 24012626
17. Bansal R, and Aggarwal N. Menopausal Hot Flashes: A Concise Review. J Midlife Health 2019;10(1):6–13. **PMID:** 31001050
18. Thurston R, Joffe H. Vasomotor symptoms and menopause: findings from the Study of Women's Health across the Nation. Obstet Gynecol Clin North Am 2011;38(3):489–501. **PMID:** 21961716
19. Karmakar N, Majumdar S, Dasgupta A and Das S. Quality of life among menopausal women: A community-based study in a rural area of West Bengal. J Midlife Health 2017;8(1)L21-27. **PMID:** 28458476
20. Yakout Sm, Kamal SM, and Moawed S. Menopausal Symptoms and Quality of Life among Saudi women in Riyadh and Taif. Journal of American Science 2011;7(5):776-783. **PMID:** 26170720 **DOI:** 10.2147/IJWH.S84709
21. Kalarhoudi MA, Taebi M, Sadat Z, Saberi F. Assessment of Quality of Life in Menopausal Periods: A Population Study in Kashan, Iran. Iranian Red Crescent Medical Journal 2011;13(11):811-817. **PMID:** 22737420