Original Article

A Study to Assess the Prevalence and Factors Affecting Menopausal Symptoms among Middle-Aged Females in the Garhwal Region of Uttarakhand

Pragya Singh, Shaili Vyas[1], Vidisha Vallabh[1], Ruchira Nautiyal[2], Abhay Srivastava[1], Jayanti Semwal[1]

Department of Community Medicine, RBBSU, Departments of [1]Community Medicine and [2]Obstetrics and Gynaecology, Himalayan Institute of Medical Sciences, Swami Rama Himalayan Institute, Dehradun, Uttarakhand, India

Abstract

Background: Middle age is a link between adulthood and old age, which requires special attention. During middle age among females, changes like menopause occur, which is responsible for causing various physical, vasomotor, psychological, and social changes, which may affect overall well-being and positive mental health status. Hence, the present study has been planned to assess the prevalence of menopausal symptoms among middle-aged females. **Materials and Methods:** The present study was a cross-sectional study carried out in rural and urban areas of district Dehradun among 400 females. A stratified systematic random sampling technique method was used. All the females fulfilling the inclusion criteria and aged 40–60 years were included in the study. The Menopause-Specific Quality of Life (MENQOL) questionnaire was used to assess the prevalence of menopausal symptoms. **Results:** A total of 400 women were recruited in the study, 200 from rural and urban areas each. The mean age of the total study participants was 50.00 ± 0.32 years. Among 400 middle-aged women, 189 were premenopausal and 211 were postmenopausal. The frequencies of occurrence of menopausal symptoms were explored in 189 premenopausal and 211 postmenopausal women. The mean age of premenopausal women was 44.21 ± 2.35 and postmenopausal was 54.39 ± 4.21. Females experienced varying grades of MENQOL symptoms. **Conclusions:** It was found that majority of the females' quality of life were found to be affected with different grades of menopausal symptoms. With increasing age, symptoms also increase and are significantly high among postmenopausal women.

Keywords: *Menopause-Specific Quality of Life, middle-aged females, postmenopausal, premenopausal, quality of life*

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Introduction

Reproductive aging in women is the depletion of ovarian follicles which results in the production of hormones – estrogenic and progesterone. The deficiency of these hormones causes various menopausal symptoms that include vasomotor symptoms (hot flushes, night sweats, and insomnia), urogenital symptoms (urgency, stress incontinence, nocturia, dysuria, vaginal dryness, and dyspareunia), mood changes (anxiety, irritability, and depression), cognitive disturbances (forgetfulness and lack of concentration), somatic symptoms (joint pain, backache, and headaches), and many others symptoms such as weight gain, palpitations, crying spells, lack of energy, and dizzy spells.[1]

However, every woman's experience of menopause is unique. She may experience all the above symptoms or none of them. Some find the transition barely noticeable while others find it life-altering. Hence, the

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Address for correspondence: Dr. Shaili Vyas, Department of Community Medicine, Himalayan Institute of Medical Sciences, Swami Rama Himalayan University, Swami Rama Nagar, Dehradun, Uttarakhand, India.
E-mail: Shailivyas@srhu.edu.in

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years immediately preceding and the decades afterward, however, are of much clinical significance.[2]

As we go by the facts from ancient times, about 200 years ago, only 30% of women lived through menopause, thus making it clear that the menopause transition and postmenopause are very much a condition of the 20th and 21st centuries. In India, about 12.6 million women are above 45 years of age, thus contributing to about 10.4% of the total population.[3]

Menopause is multidimensional and has an impact on women's physiological, physical, psychological, and mental health. Numerous factors that determine women's experience toward menopause include ethnicity, culture, social background, menopausal status, attitude, education, diet, genetics, occupation, and overall health.[4]

The nature, severity, and frequency of symptoms vary not only among individuals of different countries but also in the same population with different cultures and ethnicities. The concept of local biology, reproductive characteristics, and sociocultural aspects concerning menopausal symptoms have been discussed in various studies.[5]

Menopause becomes important for clinicians and health policy-makers as with the general increase in life expectancy; women are likely to live for more than 20 years after menopause in an estrogenic-deprived state with impaired quality of life (QOL) due to menopausal symptoms.[6]

There are also some serious medical concerns related to menopause: first, the loss of bone tissue that causes osteoporosis, and second, the increased risk of heart diseases due to age-related increases in weight, blood pressure, and cholesterol levels. Some women have severe symptoms that profoundly affect their personal and social functioning and QOL.[7]

Aims and objectives

The aim of this study was to assess the prevalence and factors affecting menopausal symptoms among middle-aged females in district Dehradun.

Materials and Methods

Study design

This was a community-based cross-sectional study.

Place of study

The study was conducted at households of selected villages of Nyay Panchayat Markham Grant (Doiwala block) and selected wards of Dehradun Municipality.

Duration of study

The study duration was 1 year (August 1, 2020–July 31, 2021).

Sample size

The mean age of menopause was taken as 47.2 ± 4.62 years,[8] (the reference being taken from one of the North Indian Study) When the statistical calculator was used, the mean age came out to be 331, 10% extra sample was included due to nonresponse rate or incomplete filling of questionnaire by some participants which we usually do in Community based studies, Hence the total sample size came out to be 364, which we rounded off to 400. From a comparison point of view, it was decided to divide an equal number of subjects from the sample size in the rural and urban areas, i.e., 200 in each area.

Sampling technique

A multistage stratified systematic random sampling technique was used.

Study tool

A predesigned semi-structured questionnaire was used to carry out the survey.

Inclusion criteria

- Women between the age of 40 and 60 years
- Women residing in district Dehradun for the last 1 year
- Women who readily gave written informed consent
- Women who attained natural menopause.

Exclusion criteria

- Women who were mentally challenged
- Women with severe gynecological problems
- Previous history of hysterectomy or receiving chemotherapy or radiotherapy
- Women who attained surgical menopause.

Methodology

The study was conducted under the Department of Community Medicine, Himalayan Institute of Medical Sciences, Dehradun, among women aged 40–60 years, in rural and urban areas of district Dehradun, for 12 months. The study area was chosen using a multistage stratified random sampling technique.

Separate lists of blocks for rural areas and municipalities for urban areas were made and 10% of each was selected randomly in the first phase. In this way, one block and one municipal area were chosen randomly.

In the next phase, 10% of the villages from the selected Nyaypalika in the rural area and 10% of wards from the selected municipal area (urban) were chosen using a random sampling technique for the study.

Study households were selected using systematic random sampling. In rural areas every 7th house, while in the urban area every 26th house was selected. In the selected household, one woman fulfilling the inclusion

criteria was chosen for face-to-face interviews after taking written informed consent.

Statistical analysis

Data were refined, compiled, and tabulated using Microsoft Excel and analyzed using SPSS 26.0 version (SPSS South Asia private limited, Bangalore, Karnataka, India). Data were compared using cross-tabulation, and frequency along with percentages was calculated for qualitative and categorical variables. Categorical data were analyzed using the Chi-square test. The level of significance, usually denoted as alpha, had the following criteria: if $P < 0.05$, then the hypothesis was said to be statistically significant.

Results

As per the Menopause-Specific QOL (MENQOL) Domain, the menopausal symptoms were categorized into four categories either under vasomotor, psychosocial, physical, or sexual. The frequencies of occurrence of menopausal symptoms were explored in 189 premenopausal and 211 postmenopausal women.

Among the middle-aged females, majority of them complained of physical symptoms. The most common physical symptoms observed in postmenopausal females were aches in the back/neck/head (91.0%), aching in muscles and joints (90.0%), decrease in physical strength (90.5%), and feeling lack of energy (89.1%) whereas in the premenopausal females were decrease in physical strength (81.5%), feeling tired or worn out (56.1%), feeling lack of energy (51.3%), and flatulence (wind) or gas pains (44.4%). The difference between the two groups was found to be statistically significant [Table 1].

In the psychosocial domain, it was observed that most of the postmenopausal females experienced symptoms such as accomplishing less than I used to do (69.7%), impatience with other people (62.1%), and feeling anxious or nervous (60.2%). In the premenopausal group, majority of females experienced feeling depressed (45.5%), followed by experiencing poor memory (45.5%). The difference between the two groups was found to be statistically significant.

Regarding the sexual domain on MENQOL, the most common symptom was a change in sexual desire (76.8%). Majority of the postmenopausal women reported experiencing a change in sexual desire 201 (95.3%), as compared to premenopausal females 106 (56.1%).

Vasomotor symptoms were the least experienced symptoms by both the groups of females. Among them, sweating was the most experienced symptom by both the study groups though it was experienced most by postmenopausal females 143 (67.7%).

Among all the menopausal symptoms, it was observed that majority of the middle-aged females suffered physical symptoms followed by psychosocial and sexual and the least number of females complained of vasomotor symptoms. This pattern was similar in postmenopausal as well as pre/premenopausal females, and it was noticed that a higher number of symptoms were experienced by postmenopausal females as compared to pre/perimenopausal females. On an average, 10 menopausal symptoms were experienced by every premenopausal female experienced, whereas every postmenopausal female experienced 19 menopausal symptoms on an average [Table 2].

The table shows the mean scores for all MENQOL domains. In total, sexual domain revealed the highest mean score in all middle-aged females, followed by physical, psychosocial, and vasomotor. MENQOL is divided into 4 domains namely vasomotor, physical, sexual and psychological. Each domain has several symptoms. The domain with lowest mean score i.e. has lesser symptoms has better QOL and the domain with highest mean value i.e. has more symptoms has impaired QOL or worse Quality of life. Thus, by comparing the mean scores of all the menopausal domains, it was found that the premenopausal women had a significantly lower mean than the postmenopausal women in the four domains. Thus, premenopausal women had a better QOL than postmenopausal women as per MENQOL Domain [Table 3].

It was observed that the mean scores of women below 50 years were less in all the four domains depicting a better QOL than those who were more than 50 years. The difference was statistically significant. Regarding religion, the mean scores of middle-aged females of the Hindu religion were lower in all the four domains except for the sexual domain. Mean score of females who were literate & educated was less in all domains of menopausal symptoms except for vasomotor. The difference was found to be significant in all domains regarding occupation; the mean score was lower in all the four domains. The difference was found to be significant in all the four domains. Regarding marital status, the mean score was lower in all the four domains, but the difference was only significant in the physical domain. Regarding the family type, the mean score was lower in all the four domains, and the difference was significant in all domains except for the psychosocial domain. It was seen that females staying in the family having family members <5 had lower mean scores, but the difference was significant in all the four domains. Regarding parity, it was observed that the mean score was lower in all the four domains,

Table 1: Distribution of middle-aged women as per the Menopause-Specific Quality of Life domains

MENQOL domain*	Premenopausal (*n*=189), *n* (%)	Postmenopausal (*n*=211), *n* (%)	Total (*n*=400), *n* (%)	Significance (χ^2, df, *P*)
Vasomotor				
Hot flushes	35 (18.5)	109 (51.7)	144 (36.0)	5.81, 2, 0.05
Sweating	74 (39.2)	143 (67.7)	217 (54.3)	
Night sweats	19 (10.1)	64 (30.3)	83 (20.8)	
Psychosocial				
Dissatisfaction with personal life	37 (19.6)	98 (46.4)	135 (33.8)	23.23, 6, <0.05
Accomplishing less than I used	60 (31.7)	147 (69.7)	207 (51.8)	
Feeling anxious or nervous	61 (32.3)	127 (60.2)	188 (47.0)	
Experiencing poor memory	83 (43.9)	119 (56.4)	202 (50.5)	
Feeling depressed	86 (45.5)	114 (54.0)	200 (50.0)	
Impatience with other people	61 (32.3)	131 (62.1)	192 (48.0)	
Willing to be alone	48 (25.3)	54 (25.6)	102 (25.5)	
Physical				
Flatulence (wind) or gas pains	84 (44.4)	157 (74.4)	241 (60.3)	50.43, 14, <0.05
Aches in back of neck or head	67 (35.4)	192 (91.0)	259 (64.8)	
Decrease in stamina	97 (51.3)	188 (89.1)	285 (71.3)	
Drying skin	76 (40.2)	130 (61.6)	206 (51.5)	
Facial hair	67 (35.4)	82 (38.9)	149 (37.3)	
Weight gain	61 (32.3)	130 (61.6)	191 (47.8)	
Changes in appearance, texture, or tone of the skin	83 (43.9)	123 (58.3)	206 (51.5)	
Feeling bloated	70 (37.0)	169 (80.1)	239 (59.8)	
Low backache	53 (28.0)	101 (47.9)	154 (38.5)	
Frequent urination	58 (30.7)	89 (42.2)	147 (36.8)	
Involuntary urination	20 (10.6)	37 (17.5)	57 (14.3)	
Aching in muscles and joints	67 (35.4)	191 (90.5)	258 (64.5)	
Feeling tired or worn out	106 (56.1)	188 (89.1)	294 (73.5)	
Difficulty in sleeping	95 (50.3)	142 (67.3)	237 (59.3)	
Decrease in physical strength	154 (81.5)	190 (90.0)	344 (86.0)	
Sexual				
Change in sexual desire	106 (56.1)	201 (95.3)	307 (76.8)	1.434, 2, 0.48
Vaginal dryness	84 (44.4)	194 (91.9)	178 (44.5)	
Avoiding intimacy	103 (54.5)	200 (94.8)	303 (75.8)	

*Many females had multiple symptoms. MENQOL: Menopause-Specific Quality of Life

and the difference was significant in all domains except psychosocial [Table 4].

It was observed that females who were vegetarians had low mean scores in all the four domains. The difference was also found to be significant. Those females who were consuming alcohol and had low mean scores in all the four domains, while those who consumed caffeine had high mean scores. Those who were physically active and were persistently using social media had low mean scores. It was observed that females who were indulged in spiritual activity had high mean scores. The difference was found to be significant in all the four MENQOL domains [Table 5].

Discussion

In the present study, majority of the middle-aged women complained of physical symptoms. Similar findings were quoted by Patel *et al*. in Gujarat[9] and in a study in Bihar,[10] where physical symptoms were more prevalent

Table 2: Distribution of middle-aged females according to their average menopausal symptoms as per the Menopause-Specific Quality of Life domain

Menopausal symptoms*	Premenopausal (*n*=189)	Average symptoms/ female#	Postmenopausal (*n*=211)	Average symptoms/ female	Total (*n*=400)
Vasomotor	128	0.6	316	2	444
Psychological	436	2.3	790	4	1226
Physical	1158	6	2109	10	3287
Sexual	293	1.5	595	3	888
Total	2015	10.4	3810	19	5825
Average symptom/female	2015/189=11		3810/211=18		5825/400=14.6
χ^2, df, *P*	9.08, 3, 0.02				

*Many females had more than one symptom, #Average, total number of menopausal symptoms/total number of females

Table 3: Comparison of mean scores between premenopausal and postmenopausal women in various Menopause-Specific Quality of Life domains

MENQOL domain	Mean±SD		95% CI	MENQOL, mean±SD	*t*-test, *P*
	Premenopausal	Postmenopausal			
Vasomotor	1.78±2.23	3.29±3.28	2.07–0.95	2.58±2.93	5.33,<0.00
Psychological	4.56±4.04	9.09±4.89	5.42–3.64	6.95±5.04	10.02, <0.00
Physical	16.33±9.40	31.26±12.59	17.13–12.72	24.20±13.44	13.30, <0.00
Sexual	22.67±13.03	43.64±15.94	23.86–18.09	33.73±17.99	14.30, <0.00

CI: Confidence interval, SD: Standard deviation, MENQOL: Menopause-Specific Quality of Life

and by Akhtar *et al*. in Jammu,[4] Rahman *et al*. in Bangladesh,[11] and Subrahmanyam and Padmaja in Kerala.[12] In our study, majority of the postmenopausal females had symptoms and hence impaired QOL as compared to premenopausal females, who had good or better QOL. Furthermore, it was observed that symptoms pertaining to all the four domains were more in postmenopausal females as compared to premenopausal women. Sweating was the most common symptom in the vasomotor domain in our study. However, in other studies, the most frequent vasomotor symptom was reported to be hot flushes.[13] Corroborative findings were noted by Jayabharathi and Judie,[14] where all symptoms were found to be higher in postmenopausal females. Whereas, in a study by Sharma and Mahajan,[15] it was seen that vasomotor and psychological symptoms were found more in premenopausal females and physical and sexual symptoms were found more in postmenopausal females. Another study by Kapur *et al*. stated that vasomotor symptoms were more common in postmenopausal women.[16] The variation in menopausal symptoms in different studies may be due to diverse cultures, traditions, sources of food, and lifestyle factors.

Majority of the premenopausal women in our study complained of feeling tired, lack of energy and stamina etc which may be due to anaemia, as Indian womens are anemic mostly also Postmenopausal females suffer from multiple aches in the body .Our study findings are also supported by other studies like Sharma & Mahajan *et al*. Similarly, Sharma and Mahajan also observed that similar physical was found in peri- and postmenopausal women in their study.[15] Regarding the psychological symptoms, majority of the postmenopausal females had it as compared to premenopausal females. Dissimilar findings were observed by Sharma *et al*.,[15] Shridharan *et al*.[17] and Kothiyal *et al*.[18] where premenopausal women complained more of these symptoms as compared to postmenopausal females. In our study, the psychological symptoms, were found in majority of the postmenopausal females as compared to premenopausal females, which was not supported by other studies. The most probable reason may be the symptoms experienced by menopause may not only due to menopause they may also be age related especially somatic and psychological symptoms. Such symptoms may also be due to several other factors, such as health problems related to aging, midlife crises, and other nonmenopausal factors experienced by middle-aged women. Also it was found that Females aged less than 50 years of age, those who were unmarried and were literate experienced less number of menopausal symptoms as compared to those who were above the age of 50, married and illiterate. Such symptoms may be due to several other factors, such as health problems related to aging, midlife crises, and other nonmenopausal factors experienced by middle-aged women.

As far as sexual symptoms are concerned, postmenopausal women suffered more as compared to premenopausal women. Our study findings are supported by Williams *et al*. and Marlett *et al*.[19] whereas as per

Table 4: Mean scores of Menopause-Specific Quality of Life domain of middle-aged females according to their sociodemographic factors

Sociodemographic factors	*n*	Mean±SD			
		Vasomotor	Psychosocial	Physical	Sexual
Age					
>50	173	2.58±2.61	8.67±4.74	30.71±12.85	13.43±4.03
<50	227	2.56±3.16	5.63±4.88	19.23±11.67	5.88±4.29
t, P		0.101, 0.919	6.24, 0.000	9.328, 0.000	17.89, 0.000
Religion					
Hindu	291	2.42±2.95	6.53±4.97	23.20±3.62	8.50±5.56
Other	109	2.99±2.85	8.05±5.09	26.86±12.63	10.87±5.38
t, P		1.736, 0.083	2.70, 0.00	4.48, 0.000	3.82, 0.000
Education					
Illiterate	80	1.30±1.62	9.06±5.19	33.66±10.94	13.10±4.41
Literate	320	2.89±3.09	6.42±4.87	21.83±12.97	8.16±5.44
t, P		4.44, 0.000	4.27, 0.000	7.51, 0.000	7.52, 0.000
Occupation					
Working	216	2.67±2.97	5.64±4.46	19.71±11.83	6.72±5.10
Homemaker	184	2.46±2.88	8.48±5.27	29.47±13.34	12.00±4.79
t, P		0.714, 0.475	5.837, 0.000	7.753, 0.000	10.61, 0.000
Marital status					
Married	371	2.60±2.90	6.97±4.94	24.45±13.37	9.26±5.60
Others*	29	2.27±3.27	6.68±6.34	20.96±14.19	7.68±5.63
t, P		0.584, 0.559	0.297, 0.766	1.347, 0.178	1.462, 0.144
Family type					
Nuclear	221	2.87±1.68	7.33±3.47	29.11±10.84	12.56±3.54
Joint	179	2.99±1.87	6.76±2.88	21.23±9.67	7.74±4.68
t, P		0.67, 0.500	1.76, 0.079	7.58, 0.000	11.72, 0.000
Family members					
<5	94	2.31±1.79	7.76±4.66	26.55±11.69	9.88±5.21
>5	306	3.49±1.98	9.36±4.12	28.71±9.84	12.35±6.61
t, P		5.16, 0.000	3.190, 0.001	1.77, 0.07	3.319, 0.001
Relationship with family					
Good	60	2.71±2.82	5.05±3.04	16.09±2.89	6.09±3.01
Very good	340	4.36±2.71	12.96±7.69	32.98±12.94	15.85±9.48
t, P		4.32, 0.000	7.853, 0.000	10.05, 0.000	7.89, 0.000
Living with children					
Yes	288	3.34±2.98	8.86±3.97	29.63±10.87	8.94±5.78
No	112	1.95±1.03	5.03±1.20	19.01±8.04	10.16±2.20
t, P		4.82, 0.000	10.02, 0.000	9.386, 0.000	2.17, 0.030
Parity					
0	20	1.21±0.34	3.76±1.27	2.03±1.78	4.03±2.12
1-2	185	1.89±0.78	6.76±2.07	19.33±9.88	7.04±3.58
>3	195	2.65±1.99	7.06±2.67	20.43±9.98	7.94±4.08
F, P		17.22, 0.00	17.80, 0.02	32.84, 0.00	10.70, 0.00

*Unmarried/separated/divorce. ANOVA showing by: $F<3.85$, $P<0.05$ (significant). ANOVA: Analysis of variance, SD: Standard deviation

Sharma and Mahajan,[15] sexual symptoms were found equally in both peri- and postmenopausal females.

Furthermore, the average symptom experienced by middle-aged women in our study was 15, which was quite high as compared to a study done by Agarwal *et al*. in Gwalior[20] and Borker *et al*. in Kerala.[21] In the present study, symptoms of females less in age were better than females more in age.

In the present study, symptoms of females less than 50 years, unmarried, literate, women was better, as compared to other women. Similar findings were observed in other studies where educational level had a significant effect on all domains.[22] Another study also demonstrated that those with a lower educational level had a low psychosocial score.[23] QOL of single female was better than married females in all domains, but was not found to be significant. Reason might be single

Table 5: Mean scores of Menopause-Specific Quality of Life domain of middle-aged females according to their lifestyle and behavioral characteristics

Characteristics	*n*	Mean±SD			
		Vasomotor	Psychosocial	Physical	Sexual
Diet					
Vegetarian	115	2.05±1.33	5.23±1.58	20.11±8.54	10.26±2.54
Nonvegetarian	285	3.29±2.67	8.56±3.88	29.23±10.07	8.74±5.48
F, P		23.48, 0.03	14.24, 0.00	56.57, 0.00	7.33, 0.00
Alcohol consumption					
Yes	43	1.89±0.89	4.26±2.66	14.35±1.69	4.68±1.21
No	357	5.49±2.98	12.36±8.12	31.71±12.84	15.35±7.61
F, P		3.14, 0.65	15.46, 0.01	11.18, 0.00	21.31, 0.00
Tobacco consumption					
Yes	62	2.89±1.99	5.26±3.66	17.05±2.89	6.18±2.11
No	368	5.99±3.01	13.06±8.79	33.21±13.34	16.65±8.01
F, P		3.24, 0.33	13.86, 0.00	9.68, 0.00	19.65, 0.00
Caffeine consumption					
Yes	370	5.89±2.91	14.04±5.69	31.06±13.69	16.18±3.11
No	30	3.69±1.83	4.34±2.32	15.05±3.89	6.43±2.21
F, P		20.34, 0.00	17.44, 0.01	13.28, 0.00	20.23, 0.00
Physical activity					
Yes	69	2.79±1.43	5.26±3.66	18.05±3.83	6.04±2.32
No	331	5.42±2.34	11.33±7.44	33.72±13.84	16.24±8.34
F, P		3.04, 0.09	15.46, 0.01	21.18, 0.00	23.31, 0.00
Phone/social media usage					
<5 h	50	1.67±0.88	4.36±2.43	13.86±3.69	3.65±2.34
>5 h	350	5.45±3.12	14.07±7.22	31.01±12.23	13.23±6.2
F, P		10.14, 0.00	19.36, 0.01	21.18, 0.02	19.65, 0.00
Spiritual activity					
Yes	339	4.56±2.81	12.06±7.79	32.21±12.34	16.05±9.71
No	61	2.81±2.09	5.65±3.26	17.89±2.09	6.78±2.91
F, P		21.78, 0.00	12.14, 0.00	46.47, 0.00	6.93, 0.00

SD: Standard deviation

women faces less responsibility and carries a sense of independence, whereas women who are married faces lots of challenges in terms of being a wife, mother, daughter in law etc , also childbearing and hence has to handle all the related responsibilities leading to stress and impaired QOL.

Furthermore, literacy and working females are seen with better QOL as it is seen generally that literacy and working status are associated with better income, leading to better nutrition and overall health status leading to less symptoms. Furthermore, it is seen that illiterate women generally ignore most of the symptoms or not much realize most of the symptoms due to lack of awareness regarding the same, leading to less reporting of the symptoms, whereas educated women are better informed, visit the doctors more frequently, and also have greater access to most of the basic amenities and hence are more aware regarding their needs.

In our study, nonsmokers and nonalcoholics were found to have impaired QOL as compared to smokers and alcoholics. Dissimilar findings were reported by Costanian *et al*.,[22] where nonsmokers had better scores than current/past smokers. Most women abstain from the use of tobacco and alcohol consumption, in our study, so we got data of only a small number of women consuming. There is also a possibility that this information may not be rightly mentioned owing to shyness or social stigma. Hence, getting true data regarding the consumption of these is challenging. Second, the small number of women who used to consume tobacco and alcohol used to destress themselves and alleviate their mood disorders by consuming the same; hence, they perceived that the symptoms improved after consuming these products. Third, we cannot extrapolate these findings as only a small number of women were taking alcohol and tobacco.

QOL improves with physical exercise. The possible explanation being women who did not undertake exercise had poor physical & mental health status. Exercise releases endorphins which alleviates mood.

Conclusions

This study concludes that postmenopausal females experience menopausal symptoms at a greater strength, hence impaired QOL as compared to premenopausal females who had good or better QOL. Furthermore, it was observed that symptoms pertaining to all the four domains were more in postmenopausal females as compared to premenopausal women. Among all the menopausal symptoms of MENQOL, majority of middle-aged females have experienced physical symptoms the most and psychological symptoms the least. Hence, menopause is responsible for poor QOL.

Recommendation

The population of postmenopausal women is increasing rapidly, and accordingly, there is a need for substantial enhancement in attention to their menopausal health problems. As the knowledge, awareness, and perception regarding menopause among middle-aged females are very less, IEC activities need to be conducted at health-care facilities to raise awareness on menopause. Furthermore, there is a huge need to create effective policy and national awareness program for menopausal females too. The health personnel trained in managing menopausal problems should provide services through special clinics organized at PHC or health subcenters on a weekly or fortnightly basis.

Limitations

As this was a community based study, in times of COVID-19 it was difficult to go house to house as people were reluctant to allow the interviewer in their homes. Study participants were apprehensive to talk to the health-care workers. As women were asked to recall symptoms from the past years, hence the chances of recall bias cannot be ruled out. Another limitation is the small sample size in comparison to other studies on this topic. Thus, the result cannot be extrapolated to the population at large.

Relevance of the study

There is already a huge lack of research work not only in our region of Uttarakhand but also in India. This study highlights the issues related to menopause, which has been neglected for a long and helps to identify the factors which could influence the age at natural menopause and thus can help in regulating women's health in a better way. Hence, this study will act as a beacon for future studies for women in Uttarakhand.

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Conflicts of interest

There are no conflicts of interest.

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