

Research Article

Age of Menopause and Menopausal Symptoms among women attending Gauhati Medical College and Hospital, Guwahati, Assam: A cross-sectional study

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Abstract: This cross-sectional study was conducted for a period of one year on 200 postmenopausal women attending Gynaecology outpatient department to evaluate the age at menopause and prevalence of menopausal symptoms, also to determine the awareness and attitude towards menopause and the treatment seeking behavior among these women. Eligible women were interviewed using a pretested, self-designed oral, interview based questionnaire. In the present study the mean age at menopause was 46.35(Standard deviation = 4.07) years. 80.5% of women had one or more menopausal symptoms. The common symptoms of menopause seen in this study were muscle and joint pain (63%), fatigue (55.5%), hot flush (52.5%), insomnia (52%) followed by night sweat (48.5%). Other comorbid conditions were found to be hypertension 23%, dyslipidemia 14%, diabetes 9% and arthritis 24.5% women. Vasomotor, psychosomatic and urogenital symptoms were more prevalent among women in the early postmenopausal period whereas psychological symptoms were more prevalent in the late postmenopausal period. Majority of the women 63.5% were unaware about menopause. About 58.5% perceived menopause in a positive attitude. Only 30.5% took treatment for menopausal symptoms. Education, occupation, lifestyle and income had statistically significant association with menopausal symptoms. The high prevalence of menopausal symptoms observed in this study proves that menopausal symptoms are common but due to lack of awareness, they do not seek medical advice. Hence priority lies on generating awareness among women about menopause and menopausal symptoms and establishment of dedicated menopause clinic to help these women live a healthy and comfortable life.

Keywords: menopause, menopausal symptoms, awareness, attitude.

INTRODUCTION

Menopause is a natural part of every woman's life, a transition from reproductive to non-reproductive stage. Menopause, the permanent cessation of menstruation, normally occurs between 45-55 years. The mean age at natural menopause is 51 years in industrialized nations, while it is 48 years in poor and non-industrialized nations [1,2]. With increase in life expectancy, a woman spends more than one-third of her lifespan in menopausal state. According to Indian Menopause Society, there are currently about 65 million Indian women over the age of 45 years affected with menopause related health problems. Hence, menopausal health demands even higher priority in Indian scenario.

Age at menopause affects health status of the women. Women who have premature menopause (less than 40 years of age) are at an increased risk of osteoporosis and cardiovascular diseases. Whereas delayed menopause increases the risk of breast, endometrial and ovarian cancers.

Many women experience menopausal symptoms during menopausal transition and postmenopausal years. The symptoms of menopause as a result of estrogen deficiency due to primary ovarian failure are reflected not only in the female genital tract but also in the skeletal, cardiovascular and psychological system.

Thus, menopause is characterized by major physical, psychological and social changes and may adversely affect quality of life. It is therefore, currently considered as an important public health problem. Hence, detection and management of menopause related problems are essential for designing appropriate health care services to ensure a healthy and enjoyable life in this age group. Therefore the present study attempts to determine the age at menopause, prevalence of menopausal symptoms and associated menopausal problems among the women in our region.

MATERIALS AND METHODS

The present study was a cross-sectional study, conducted from August, 2014 to July 2015 among 200 postmenopausal women attending Gynaecology outpatient department for various reasons being randomly included into the study.

Inclusion criteria:

All women who reported 12 continuous months of amenorrhea, without a hysterectomy or other procedure that would have stopped their menses, were classified as naturally menopausal. Age at natural menopause was defined as the age at last menstrual period.

Exclusion criteria:

- Known case of thyroid and parathyroid disorder
- Women taking estrogen and / or progesterone in the last three months
- Women with chronic renal disease
- Known case of genital malignancy
- Women who had surgical menopause

Eligible women were interviewed using a pretested, self-designed, semi structured, oral, interview based questionnaire after obtaining an informed consent from each participant. The information regarding the demographic characteristics such as age, educational status, marital status, lifestyle, occupational status as well as clinical symptoms of menopause were collected from each subject. Data on comorbid conditions of the participants were investigated.

Anthropometric measurements such as weight, height and blood pressure of each subject were recorded during the examination. Body mass index (BMI) of all the subjects was calculated. Mean age of menopause was calculated. Percentage, proportions of various menopausal symptoms as well as other disease such as hypertension, diabetes and arthritis were also calculated. In the current study, we used a questionnaire, which could only enlist the complaints told by the lady itself. We did not use a standard validated questionnaire like the MENQOL (Menopause Specific Quality of Life) due to feasibility reasons.

The menopausal symptoms assessed in the study were self-reported symptoms by the study subjects. Menopausal symptoms assessed in the study were divided into six categories: Vasomotor, psychosomatic, psychological, sexual, urinary complaints and others. The ladies were enquired about their awareness and attitude towards menopause and menopausal symptoms and their treatment seeking behavior.

A lady was considered to be literate if she was able to read and write with understanding in her language (as defined by WHO and Indian Consensus). Women with monthly income of less than or equal to Rs.10,000/month were considered as belonging to low income group and those with more than Rs. 10,000/month were considered as high income group. Women who had menopause for five years or less were considered as early postmenopausal and those who were having menopause for more than five years were considered as late postmenopausal. Details of the cases were recorded in a proforma.

RESULTS AND OBSERVATIONS

A total of 200 postmenopausal women were included in the study. Majority of postmenopausal women attained menopause between 45 -49 years (55.5%) (Table 1). The mean age at menopause was 46.35 ± 4.07 years, with a range from 36 to 56 years. Only 3% had premature menopause. It was observed that the maximum number of postmenopausal women belonged to the age group of more than 50 years (56.5%) at the time of inclusion into the study, with a range from 40 to 67 years of age (Table 2). About 64.5% women were early postmenopausal and 35.5% were late postmenopausal.

Table 2 shows that most of the women were Hindu by religion 82.5% and 17.5% of the women were Muslim. Most of the women were literate 74% and only 26% of the women were illiterate. Majority of the women were housewives 79% and only 21% of the women were employed. 76% of the women belonged to low income group (Rs. \leq 10,000/month) and only 21% of the women were in the high income group (Rs. $>$ 10000/month). Most of the women were having sedentary lifestyle 77.5% and only 22.5% of the women had active lifestyle. 80.5% of women were married women and rest 19.5% were single (widow/unmarried/divorced). 80.5% women experienced one or more menopausal symptoms.

Table 3 has shown that majority of postmenopausal women 45% had gradual cessation of menstruation, followed by 38.5% of women having irregular menses before attaining menopause. Only 16.5% of women had sudden cessation of menses.

Table 4 shows the distribution of women having menopausal symptoms in relation to duration since menopause. The common symptoms of menopause seen in this study were muscle and joint pain (63%), fatigue (55.5%), hot flush (52.5%), insomnia (52%) followed by night sweat (48.5%). It was evident that hot flush was the most common vasomotor symptom, muscle and joint pain, the commonest psychosomatic symptom; poor concentration was the most common reported

psychological symptom and sexual dysfunction the commonest urogenital symptom in women in the present study. Vasomotor, psychosomatic and urogenital symptoms were more prevalent among women in the early postmenopausal period. Whereas psychological symptoms (except depression) and some of the rare menopause symptoms (weight gain, dryness of skin) were more prevalent in the late postmenopausal period, It was evident that 23 % of the women were diagnosed with hypertension, followed by dyslipidemia in 14 % and diabetes in 9% and arthritis in 24.5 % of women.(Table 5).

The mean number of menopausal symptoms was 7.64 in the age group 40-44 years, 11.92 in the age group of 45-49years and 14.33 in the age group ≥ 50 years (Fig 1). It was observed that prevalence of menopausal symptoms increases with increase in age of the women. Table 6, shows that in the present study, 30% were overweight and 11% were obese. It was observed that the number of symptomatic women increases with increase in BMI (Body Mass Index).

Prevalence of symptoms were maximum among the obese women 95.5%. The prevalence of hot flush (59.8%), joint pain (65.9%), fatigue (62.2%), sexual dysfunction (34.1%), urinary symptoms (15.9%) , insomnia (57.3%) and hirsutism (19.5%) was more in women with high BMI ($\geq 25 \text{ kg/m}^2$) (Fig 2).

From the table 7, it was evident that factors like education, occupation, monthly income and lifestyle had statistically significant impact on the health of postmenopausal women.

Table 8, shows that majority of the women 63.5% were unaware about menopause and menopause symptoms. About 58.5% considered menopause in a positive attitude. 69.5% did not take any treatment for their symptoms. Only 22.5% took calcium tablets, phyto estrogens and some herbal medicine. Only 8% women took estrogen vaginal cream for the vaginal complaints. None of them have heard of hormone replacement therapy.

Table 1: Distribution of postmenopausal women according to age at attaining menopause

AGE GROUP(in years)	Number	Percentage
< 40	6	3
40-44	56	28
45-49	111	55.5
≥ 50	27	13.5
Total	200	100

Table 2: Distribution of postmenopausal women according to socio demographic variables

AGE GROUP(in years)	Number	Percentage
40-44	20	10
45-49	67	33.5
≥ 50	113	56.5
RELIGION		
Hindu	165	82.5
Muslim	35	17.5
EDUCATION		
Literate	148	74
Illiterate	52	26
OCCUPATION		
Employed	42	21
Unemployed	158	79
MONTHLY INCOME		
High income (> Rs.10000/month)	48	24
Low income (Rs \leq 10000/month)	152	76
LIFESTYLE		
Active	45	22.5
Sedentary	155	77.5
MARITAL STATUS		
Married	161	80.5
Single (widow/ divorce)	39	19.5
DURATION SINCE MENOPAUSE		
≤ 5 years	129	64.5
> 5 years	71	35.5
PREVALENCE OF SYMPTOMS		
Present	161	80.5
Absent	39	19.5

Table 3: Pattern of cessation of menstruation

PATTERN OF CESSATION OF MENSES	Number	Percentage
Gradual cessation	90	45
Sudden cessation	33	16.5
Irregular bleeding	77	38.5
Total	200	100

Table 4: Menopausal symptoms in relation to duration since menopause

SYMPTOMS	Early postmenopausal(n=129)		Late postmenopausal(n=71)		Total (n=200)	
	Number	Percentage	Number	Percentage	Number	Percentage
1. VASOMOTOR						
Hot Flushes	81	62.8	24	33.9	105	52.5
Night sweat	70	54.3	27	38	97	48.5
Excessive sweating	33	25.6	13	18.3	46	23
2. PSYCHOSOMATIC						
Insomnia	75	58.1	29	40.8	104	52
Muscle/joint pain	86	66.7	40	56.3	126	63
Irritability	51	39.5	26	36.6	77	38.5
Fatigue	83	64.3	28	39.4	111	55.5
Palpitation	52	40.3	23	32.4	75	37.5
Headache	37	28.7	5	7	42	21
Dizziness	35	27.1	8	11.3	43	21.5
3. PSYCHOLOGICAL						
Poor concentration	47	36.4	36	50.7	83	41.5
Depression	39	30.2	17	23.9	56	28
Anxiety	21	16.3	17	23.9	38	19
4. UROGENITAL						
Urinary complaints	17	13.1	4	5.6	21	10.5
Vaginal complaints	36	27.9	7	9.8	43	21.5
Sexual dysfunction	47	36.4	10	14.1	57	28.5
5. RARE MENOPAUSE SYMPTOMS						
Weight gain	6	4.6	17	23.9	23	11.5
Hirsutism	13	10	7	9.8	20	10
Dryness of skin	10	7.7	15	21.1	25	12.5

Table-5: Prevalence of Comorbid Conditions

COMORBID CONDITIONS	Number(n=200)	Percentage
Hypertension	46	23
Diabetes	18	9
Dyslipidemia	28	14
Arthritis	49	24.5

Table 6: Menopausal symptoms in relation with BMI(Body Mass Index)

BMI Kg/m ²	ASYMPTOMATIC		SYMPTOMATIC		TOTAL(n=200)	
	Number	Percentage	Number	Percentage	Number	Percentage
<18(n=6)	2	33.3	4	66.7	6	3
18-24(n=112)	26	23.2	86	76.8	112	56
25-29(n=60)	10	16.7	50	83.3	60	30
≥30(n=22)	1	4.5	21	95.5	22	11

Table 7: Menopausal symptoms and variables

Study variable	Total	Number (%)	p Value(<0.05= significant)
1. EDUCATION			
Literate	148	136(91.8)	
Illiterate	52	25(48.07)	0.0223
2. OCCUPATION			
Unemployed	158	143(90.5)	
Employed	42	18(42.8)	0.0188
3.MONTHLY INCOME			
High (> Rs.10000/month)	48	21(43.75)	
Low (≤ Rs.10000/month)	152	140(92.1)	0.0125
4.RELIGION			
Hindu	165	140(84.8)	
Muslim	35	21(60)	0.3095
5.LIFESTYLE			
Active	45	19(42.2)	
Sedentary	155	142(91.6)	0.0122
6.MARITAL STATUS			
Married	161	136(84.4)	
Single	39	25 (64.1)	0.39

Table 8: Distribution of women according to awareness, attitude and treatment seeking behavior towards menopausal symptoms

	Number(n=200)	Percentage
AWARENESS		
Aware	73	36.5
Not aware	127	63.5
ATTITUDE		
Positive	117	58.5
Negative	83	41.5
TYPE OF TREATMENT		
Took Calcium tablet & herbal medicine	45	22.5
Estrogen vaginal cream	16	8
Has not taken any treatment	139	69.5

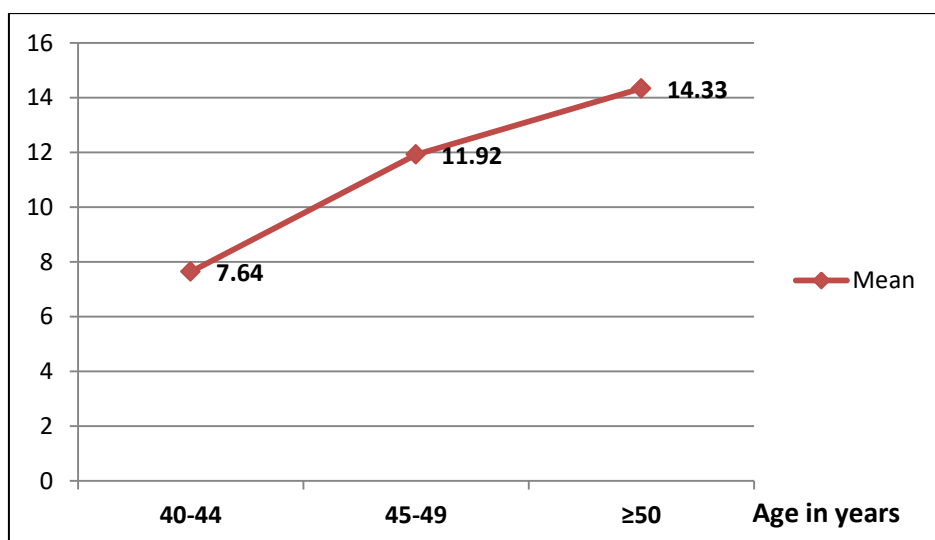


Fig 1: Showing means number of menopausal symptoms in relation to age of the participants

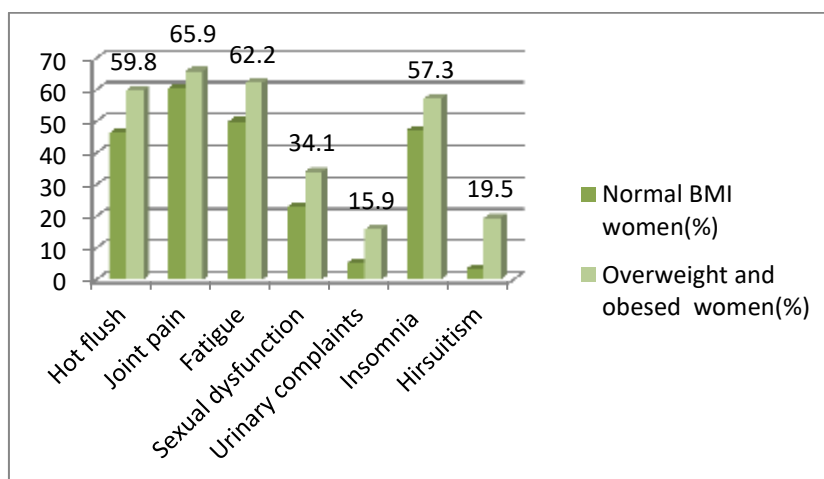


Fig 2: Showing Prevalence of menopausal symptoms in relation with BMI

DISCUSSION

Mean age at menopause in the present study was 46.35 ± 4.07 years, which is similar to the findings of 46.24 ± 3.38 years done in a study by Akansha Singh *et al.*; [3] and 46.14 ± 4.47 years done in

a study done by Dasgupta and Ray[4]. But it is lower in comparison to the mean age at menopause of about 51 years in industrialized countries, also highlighted by WHO. However, it is comparable to mean age observed in various Indian studies (Table-9)

Table 9: Mean age at attaining Menopause in various studies

Studies	Mean age at menopause(in years)	Region
S. Palacias <i>et al.</i> ; [1]	50.1-52.8	Europe
S. Palacias <i>et al.</i> [1]	50.5-51.4	North America
S. Palacias <i>et al.</i> [1]	43.8-53	Latin America
S. Palacias <i>et al.</i> [1]	42.1-49.5	Asia
Kaulagekar <i>et al.</i> ; [5]	45.8 ± 4.3	Pune ,Maharashtra
Madhu kumar S <i>et al.</i> ; [6]	49.33	Rural area of Bangalore
Narinder Mahajan <i>et al.</i> ; [7]	44.54	Himachal Pradesh
Akansha Singh <i>et al.</i> ; [3]	46.24 ± 3.38	Rural area of Delhi
Poomalar <i>et al.</i> ; [8]	45	Puducherry
Taher <i>et al.</i> ; [2]	47	Libyan
Nitin Joseph [9]	48.4 ± 4.5	South Canara, Mangalore

There are wide geographical differences in the age of onset of menopause. Both in Asia and Latin America, women of poorer socioeconomic status have significantly earlier onset of menopause. Although it is worth noting that the estimated age at menopause may be influenced by the study design, such as the age range, study population and health status of the subjects and environmental factors.

In the present study, vasomotor symptoms, psychosomatic symptoms and urogenital symptoms were more prevalent among the women in the early postmenopausal period. Whereas psychological symptoms except depression and some of the rare menopause symptoms (weight gain, dryness of skin) were more prevalent among women in the late postmenopausal period. This could be because of difference in the number of the population in the study

groups and also due to the fact that with more years passed in menopause, women become adapted to the symptoms. This is comparable to the study by Poomalar [8] who had observed increased prevalence of vasomotor symptoms and sexual dysfunction in the early postmenopausal women and psychological symptoms in the late postmenopausal women.

The present study had shown that the number of menopausal symptoms decrease with increase in duration since menopause, which is similar to the study done in Iran by Masoumeh *et al.*; [10]. But another study from Kerala by Sagar A *et al.* [11] had shown an increase in number of menopausal symptoms with increase in duration of menopause which was dissimilar from the present study. However one study by N. Joseph *et al.*; [9] had shown no relation between menopausal symptoms with duration since menopause.

It is observed from the present study that the prevalence of menopausal symptoms is more among the literate women as compared to the illiterate group. This could be because of greater health consciousness among the educated than less educated women. It is similar to the studies done by Madhu kumar [6], Nitin Joseph [9] which also reported more symptoms among the educated group. However, other studies done by Gharaibeh M [12] and Masoumeh *et al.*; [10] found women with higher education having a lower prevalence of menopausal symptoms which was different from the present study. Another study done in Singapore also demonstrated no association between education and menopausal symptoms. This difference could be because of difference in the study population and difference in the criteria of defining literacy in different studies.

The prevalence of menopausal symptoms is more among the unemployed women (housewives) as compared to the employed women in the present study. This could be because employed women are too preoccupied with daily activities, hence less perception of symptoms. It is similar to the study by Madhu kumar *et al.*; [6] and Masoumeh *et al.*; [10] in which more symptoms were experienced by the unemployed group of women than the employed group. However studies by Poomalar *et al.*; [8] and Kaulagekar [5], had observed more prevalence of menopausal symptoms among the employed women than the unemployed. Whereas Nitin Joseph [9], have found no association between occupation and menopausal symptoms. The

finding of the present study was dissimilar from these studies.

It is observed that there is more prevalence of symptoms among the low income group as compared to the high income group. This could be because of poor living conditions affecting nutritional status and economic instability affecting mental status. The findings in the present study are similar to the findings of SWAN (The Study of Women's Health across the Nation) results and a study by Poomalar *et al.*; [8]. However it is dissimilar to the findings by Kaulagekar [5], in which the women of low income group experienced less number of symptoms.

The association between menopausal symptoms and lifestyle is found to be statistically significant (p value < 0.05) in the present study which is similar to the study by Min-Ju Kim *et al.*; [13] and Masoumeh *et al.*; [10]. The association between menopausal symptoms and marital status is found to be statistically insignificant (p value > 0.05) in the present study which is similar to the study by Madhu kumar S [6]. But it is dissimilar to the study by Moon-Soo- Lee *et al.*; [14] in which menopausal symptoms were more prevalent among the single women than married women.

It was observed in the present study that the mean number of symptoms increases with increase in age of the women, which was also observed by Narinder Mahajan *et al.*; [7] and Madhu kumar S [6].

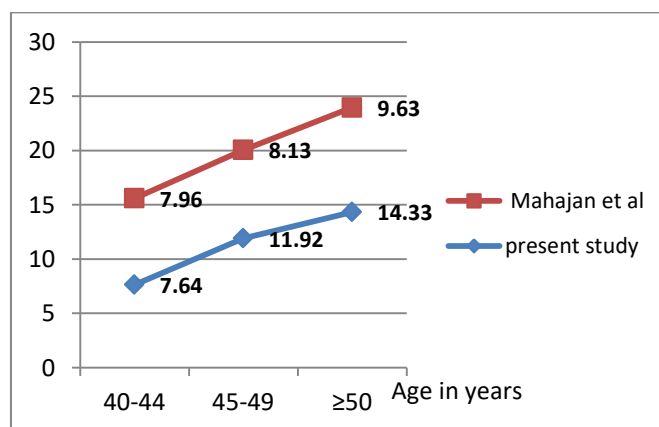


Fig 3: Graph showing increase in mean number of symptoms with age in present study and study by N. Mahajan

Muscle and joint pain (63%) was the most common symptom, followed by fatigue (55.5%), hot flush (52.5%), insomnia (52%) and night sweat (48.5%) in the present study. It was probably because of their highly demanding physical labour in day to day life both at home and agricultural field. Akansha Singh *et al.*; [3] found sleep disturbances (62.7%) as the most common symptom followed by muscle/joint pain (59.1%), hot flushes (47.4%) night sweats (45.6%)

and poor concentration. Mahajan *et al.*; [7] also found fatigue (62%) as most common symptom followed by hot flushes (56%) and cold sweats (52%) and backaches (51%). These differences occur because of completely different geographical locality of study population, lifestyle and their working behavior.

In the present study, about 24.5% of women had arthritis, 23% hypertension, 9% diabetes and 14%

dyslipidemia, which is comparable to the studies by Narinder Mahajan [7] and Vishal R *et al.*; [15].

From the present study, it was observed that women who were overweight and obese had experienced more symptoms than normal weight women. In the past it was thought that overweight women perceived fewer hot flushes as androgen got aromatized to estrogen. But recent study by Thurston [16] and also the current study has shown that prevalence of hot flushes increases with increase in BMI of women. This could be because of the much humid climate which is peculiar in the North east. Due to this, obese women sweat more and they may have mistaken it for hot flushes. The symptom variation also depends upon the climatic and environmental factor where these studies are conducted. The present study had also shown high prevalence of hirsutism among overweight women than normal BMI women. It is due to the increased testosterone concentration in afflicted women. This finding is similar to the study done by Lenka Luptakova *et al.*; [17]. Whereas one study done in Turkey Makbule *et al.*; [18] had shown no association between BMI and menopausal symptoms, which is dissimilar from the present study.

In the present study, only 36.5% of women were aware about menopause and menopausal symptoms which is lower in comparison to 74.4% and 69% in the studies by Kaulagekar [5] and Sagar A *et al.*; [11] respectively. In the present study, about 58.5% of women had positive attitude and perceived menopause as a natural process. It is comparable to the findings of 56% and 42.9% by N. Mahajan, [7] and Madhu kumar S, [6] respectively. However, 41.5% of women in the present study perceived menopause as a disease due to the effects of menopausal symptoms, diminishing abilities and femininity. It is comparable to the results of negative attitude of 44% [7] and 56.9% [6] respectively.

In the present study, only 22.5% of women took calcium, phytoestrogen or some ayurvedic treatment or pain killers to treat menopausal symptoms. Few of them 8% took estrogen vaginal cream for vaginal complaints and were still using it as they found it to be beneficial in reducing their symptoms. Majority of females took treatment without doctors' advice. This is similar with the findings of 21.7% of women taking calcium supplements by Madhu kumar [6] but lower in comparison with the finding of 54.5% in a study by Kaulagekar [5].

In the present study, about 69.5% of women had not taken any treatment for menopausal symptoms. They had the opinion that all these problems are very common at this age, they are self limiting, and they had not taken these symptoms very seriously. Some women

did not seek medical help due to family or financial problems. The present finding is higher in comparison to the findings of 45% and 22.4% of women who did not feel the need to take any medical advice as observed in the studies by Kaulagekar [5] and Madhu kumar [6], respectively. This could be because of great lack of awareness among women in our study population, hence less reporting of symptoms.

CONCLUSION

It has been observed that women in our population attained menopause at an early age (46.35±4.07 years). Major part of life of these women is spent in post menopausal period. In our study population, though the prevalence of menopausal symptoms is high but due to lack of awareness, majority of them do not seek advice for these symptoms. Hence awareness needs to be created regarding menopause and menopausal symptoms so that they come forward to seek medical advice to make their lives more comfortable. Media both print and electronic and NGO'S (Non- Government Organizations) can play a major role in creating awareness among these women, so that they can attend medical help for the symptoms. Dedicated Menopause Clinic needs to be established in the current primary health care systems to help these women live a healthy and independent life.

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