

PREVALENCE OF MENOPAUSAL SYMPTOMS AMONG WOMEN (MENOPAUSAL FOR < 5 YEARS) IN A RURAL AREA IN KOTTAYAM, KERALA, INDIAAnil Bindhu S¹, Anitha Bhaskar², Jose Joseph³**HOW TO CITE THIS ARTICLE:**

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ABSTRACT:Context; Women all over the world suffer from a number of symptoms around the age of menopause and when the symptoms are severe that may affect the quality of life of middle aged women. Knowledge regarding the menopausal symptoms suffered by women may help physicians to provide appropriate care. **OBJECTIVE:** 1. To determine the prevalence of menopausal symptoms among women (menopausal for < 5 years) in the age group of 43-55 years in a rural area in Kottayam district in Kerala. **SETTINGS AND DESIGN:** Cross-sectional House to House study was conducted among women in the age group of 43 to 55 years in a rural area in Kottayam district in Kerala state. **METHODS AND MATERIALS:** A pre-tested structured closed ended questionnaire was used for data collection. **STATISTICAL ANALYSIS USED:** Percentages, Proportions with 95% confidence intervals were used to summarize the symptoms. Chi-Square test, chi square test for trend, Odds ratio is used for evaluating significance. Tests were considered significant when the 'p' value was <0.05. **RESULTS:** Mean age of 320 women participated in the study was 48.96. The frequently occurring symptoms were "Feeling of Fatigue/Lack Of Energy" 49.7% (95% CI: 44.1-55.6), "easily get irritated" 41.1% (35.7-46.4). hot flashes 40.9% (95%CI: 35.3-46.6), muscle or joint pain 35.9 % (30.6-41.3), Night sweats is 32.8 % (95% CI: 27.5-38.1).Among psychological symptoms, 56.9% among postmenopausal women and 42.5% among pre-menopausal women complained of "Feeling of Fatigue/Lack Of Energy". The most frequent somatic symptoms are muscle or joint pain, 40% among postmenopausal women and 31.9% among pre-menopausal women. **CONCLUSIONS:** Prevalence of menopausal symptoms is high among women in this rural area in Kottayam, Kerala. About 88.8 % of post-menopausal women and 62.5% pre-menopausal women reported at least one symptom. **KEYWORDS:** menopausal symptoms, prevalence, Hot Flushes, Night Sweats, Kerala.

INTRODUCTION: Menopause is a normal physiological change experienced by middle aged women. The proportion of women living up to menopause and beyond has-increased as there is a progressive increase in life expectancy. Women all over the world experience menopausal symptoms, but the prevalence and severity varies widely in different population and also within a given population depending on several factors.^{1- 5} Women experience many somatic, psychological, vasomotor and sexual symptoms during this period of menopausal transition. Some can be severe enough to affect their normal daily activities. Symptoms experienced during menopause affect the quality of life in postmenopausal women.⁶

The vasomotor symptoms of hot flushes and night sweats are the characteristic symptoms of menopause. ⁴ Menopausal hot flushes are usually defined as transient periods of intense sensations of heat, mainly in the upper part of the body, arms, and face. They are often followed by flushing of the skin and profuse sweating. Night sweats are the night time manifestation of hot flushes. Insomnia is

often complained, but may be secondary to the disruption of sleep caused by night sweats. Sexual interest may decrease after menopause. Other nonspecific symptoms include urinary problem, depression, palpitation, headaches, insomnia, lack of energy, back ache, difficulty in concentrating, dizzy spells.⁴

A multiethnic, longitudinal study, the Study of Women's Health Across the Nation (SWAN) in U.S., reported that the prevalence of hot flushes was highest among African Americans (46%), followed by Hispanics (34%), Caucasians (31%), Chinese (21%), and Japanese (18%).³ The individual countries in Asia also show a wide discrepancy in the prevalence of vasomotor symptoms among menopausal women.¹ Women in South Korea (38.5%), Malaysia (30%), and the Philippines (30.2%) were found to have a higher prevalence of hot flushes than women in Hong Kong (10.2%), Indonesia (9.8%), Singapore (14.5%) and Taiwan (21.4%).¹

Kerala is ranked first in social development in the rural areas among the states in India⁷ and almost all women are literate in this state. Menopause is recognized as a health problem, increasingly by women in Kerala. But only few studies are reported regarding prevalence of menopausal symptoms experienced by women here. There is paucity of data regarding the typical vasomotor symptoms like hot flushes and night sweats. A population-based study is essential to find out the common symptoms experienced by middle aged women around age at menopause.

The Objective of this study is to determine the prevalence of menopausal symptoms among women in the age group of 43-55 years in a rural area in Kottayam district in Kerala.

MATERIALS AND METHODS: The current descriptive cross-sectional house to house study was conducted in a rural Panchayath area (Arpookara) in Kottayam district of Kerala state in South India. A Panchayath with 12 wards was purposively selected Three wards are selected by simple random sampling method.

Study population included all women in the age group of 43 to 55 years who are permanent residents of Arpookara Panchyath. As a pilot survey of 30 women from this area showed that the median age at menopause is 49 years, women 49+/-6 years have been included in the study.

Inclusion criteria: All women from 43 to 55 years who are permanent residents of Arpookara Panchayath.

Exclusion Criteria:

1. Women who had undergone surgical menopause,
2. Women receiving hormone replacement therapy
3. Women who attained menopause more than five years back and
4. Patients with dementia or mentally ill, women on radiotherapy.

The sample size was calculated using the formula $Z\alpha^2 pq/l^2$, $p=38\%$ as per the pilot survey, $q=62\%$, β error of 20 % and α error of 5%. Thus the sample size observed was 157. Women whose last menstrual period occurred ≥ 12 months were categorized as the post-menopausal.

All Post-menopausal women who met the inclusion criteria from the consecutive houses in the selected wards were included in the study. An equal number of women who did not attained menopause, in the same age group, were also included for comparison. The approval of institutional ethical committee was obtained.

A pre-tested structured closed ended questionnaire was used for data collection data and the data collection was done by the investigator. The questionnaire included socio-demographic

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characteristics like age, menopausal status, education, marital status, employment status, family type and religion in addition to climacteric symptoms listed under Greene's Climacteric Scale.^{8,9} Greene's Climacteric Scale is a validated menopausal symptom scale which is used routinely in clinical practice and as a research tool. This has 21 symptoms under different subscales, 11 psychological, 7 somatic, 1 sexual and 2 vasomotor symptoms.

Respondents were informed about the purpose and objectives of the research. Interview was conducted by the investigator in the respondent's homes, in the local language, ensuring adequate privacy after taking informed consent. Statistical Analysis: The data collected was analyzed using SPSS 16 software. Percentages, Proportions and 95% confidence intervals were used to summarize the symptoms. Chi-Square test is used for evaluating significance. Odds ratio with 95% confidence interval was calculated. Chi square test for trend was done to find out the linear trend of menopausal symptom with age. Tests were considered significant when the 'p' value of <0.05 was obtained.

RESULTS: The present study included 320 women in the age group of 43 and 55 years. Mean age of the study participants were 48.96(CI: 48.52-49.4) and median age was 49 years. In the study population, there were equal number of post-menopausal women and women prior to menopause. The socio-demographic characteristics of the study population have been shown in table 1.

In the present study 75.6 % of women had at least one of the menopausal symptoms. About 88.8% of post-menopausal women and 62.5% pre-menopausal women reported at least one symptom.

The most frequently occurring psychological symptoms among women were "Feeling of Fatigue/Lack of Energy" 49.7%, and "easily get irritated" 41.1%.

The prevalence of two vasomotor symptoms, hot flushes and night sweats are 40.9% and 32.8%.

Less common symptoms were "loss of interest" 13.1% and 16.9%, head ache 13.1% and 9.4%, pounding of heart 8.8 and 11.2%, giddiness 7.5% and 11.3%, tingling or numbness on skin&/body 5.7% and 7.5%, strained feeling in the head and body 3.1% and 8.8%, among pre-menopausal and post -menopausal women respectively.

Among the currently married women, 48% of the women reported that they have no sexual disinterest, 13.2% had mild, 23% reported moderate and 15.8% reported severe loss of interest in sex. Among women who reported having loss of sexual interest, the proportion of women with sexual complaints is higher among postmenopausal women than pre-menopausal women. The difference is also found to be statistically significant with a Chi-square value of 25.4 and a p value of < 0.001. (figure 1.)

The prevalence of common menopausal symptoms varies significantly in different age groups within the study population. Twenty six percent of women in the age group of 43-46 years, 50% 46-49 years 50% women in the age group of 49-52 years and 46.8% of women in the age group of 52-55 years had hot flushes

A linear trend in proportions was observed in the occurrence of symptoms like Hot flushes (chi square value for trend- 8.9. p=0.003), Fatigue(chi square value for trend =911.4, p= 0.0007), "easily get irritated"(chi square value for trend=8.38, p=0.004), Night sweats(chi square value for trend =5.76, p= 0.016), Sleep disturbance (chi square value for trend =5.7, p=0.017), Joint/Muscle pain (chi square value for trend =6.1, p=0.01) with age within the study population. There was a

linear trend in proportions for sexual disinterest among currently married women with increasing age (chi square value for trend =22.1, $p=0.00001$) with age within the study population.

The proportion of women with hot flashes is significantly higher among post-menopausal women compared to women who did not attain menopause [$p=0.002$, OR=2 (1.2-3.1)]. Prevalence of "Feeling of Fatigue" [$p=0.01$, OR: 1.78 (1.146-2.78)] and night sweats ($p=0.04$, OR=1.6(1.01-2.6) also significantly higher in women after menopause compared to women prior to menopause. No statistically significant difference in prevalence is obtained in other symptoms between post-menopausal women and women who did not attain menopause. (Table 2.)

DISCUSSION: In the cross sectional study in a rural area in Kerala, 75.6 % of women had at least one of the menopausal symptoms. About 88.8 % of post-menopausal women and 62.5% pre-menopausal women reported at least one symptom.

The most frequently occurring psychological symptoms among women were fatigue and easily get irritated. The most frequent somatic symptom was muscle/ joint pain.

The vasomotor symptoms like hot flushes (40.9%) and Night sweats (32.8 %) are prevalent among women in this rural area in Kerala. But the study conducted in Kerala by Borker et al., reported no vasomotor symptoms at all.¹⁰

This may be because the study reported symptoms told by the women participated. If they were not asked for symptoms like hot flushes or night sweats, they may not relate those symptoms to menopause.

Nearly half of women in the present study complained of "Feeling of Fatigue/Lack of Energy". Nayak et al. 2012,¹¹ reported a higher prevalence of "Feeling tired or worn out". (67.5%) among women in Karnataka. But the prevalence vasomotor symptoms were relatively less, hot flushes (32.1%) and night sweats (24.9%). Inclusion of postmenopausal women <5years duration after menopause in our study could be one reason for higher prevalence of vasomotor symptoms.

A meta-analysis showed that the median duration of vasomotor symptoms is a about 4 years among symptomatic women.¹²

In a study conducted at Puducherry by Poomalar et al.¹³ 2013; low back ache was present in 79% women, aching in the muscles and joints in 77.2% women and hot flushes in 51% of women. But this study was conducted among women came to a hospital. Generally symptomatic women tend to come to hospitals more, and this sample may not be representative of women in the community.

In a study conducted by Kapur et al. 2009; in Uttarakhand, in Northern India, the most prevalent symptom was muscle and joint pains (55.81%), followed by feeling tired or lack of energy (51.19%) and eye problems (49.6%) in the age group of 30 to 65 years.¹⁴

Mahajan et al. 2012; reported that most frequent menopausal symptoms were fatigue and hot flashes amongst Himachali middle-aged women.¹⁵ In the present study among women in Kerala also these two symptoms are frequent, but the prevalence is comparatively less.

In another study by Bagga:2004; reported that, 54% of women had hot flushes and 22% of women had night sweats, 93% had loss of interest, 83% had pressure/tightness in head & body in the age group of 35 to 54 years in India.¹⁶

The most frequently occurring symptoms among menopausal women are different in different studies (table 3) conducted in different parts of India. Similar reports of different studies reporting different symptoms in the same population has been reported from China.¹

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The prevalence of vasomotor symptoms like hot flushes are comparable to Asian women of Malaysia (41.6%) in study conducted by Rahman et al.¹⁷ and Srilankan women (40.2% and 39.1%).¹ But a higher prevalence of symptoms like body ache (81.7%), hot flushes (66.3%), "lack of energy" (68.8%) were reported by Nisar et al among women in Pakistan compared to the present study.¹⁸ Comparatively lower prevalence of hot flushes(34%) and night sweats (27%) was reported by Liu et al.¹⁹ among Chinese women between 45 and 65 years.

Reasons for difference in prevalence in different studies can be many as the menopausal symptoms are influenced by sociodemographic/sociocultural factor, general health status, and individual perception of menopause, genetic and racial differences. The difference in age range, study design, study settings, sample size, distribution of menopausal status of participants and the instruments used may also account for variation in prevalence of symptoms in different studies. In the present study, the postmenopausal women included were not longer than 5 years beyond menopause.

The odds having Hot flashes, night sweats, loss of sexual interest and feeling of fatigue was significantly higher in postmenopausal women compared to women who did not attained menopause. Other studies also found out that the risk of Hot Flushes was greatest in postmenopausal women.⁵

The prevalence of menopausal symptoms in the study population varies in different age groups in the study population. The vasomotor symptoms like hot flashes and night sweats are found to be more frequent around the median age at menopause. Fifty percent of women in the age group of 46-52 years suffer from hot flushes. The median age at menopause was 49 in this study and half of the women around this age group (+/-3 years) are found to be suffering from hot flushes.

The strength of the study is that it is a population based house to house cross sectional study, to find out the actual prevalence of women suffering from the menopausal symptoms in this geographic area. The major limitation of the study is that the prevalence of urogenital symptoms was not obtained as we asked for the symptoms in Greens climacteric scale which included only psychological, somatic, vasomotor and sexual symptoms.

There is a high prevalence of menopausal symptoms among women in Kerala. Nearly fifty percent of post-menopausal women had hot flushes. Hence the health care providers need to pay more attention to identify real problems of menopausal women, in order to provide appropriate care. Clinical practice guidelines on menopause by Meeta et al 2013; from Indian menopause society²⁰ are helpful for the busy clinician in extending optimal care to the woman.

The awareness regarding menopause and related problems among women need to be improved. Health workers, ASHA, and Anganwadi workers can help women to understand about the menopausal symptoms, if they are given adequate training. Counseling of menopausal women should be popularized in Kerala. Health care providers need to realize that menopausal women may experience a large number of symptoms that may be distressful to her. Further research addressing knowledge of menopause, knowledge of how to cope with it to have a satisfactory life, how women are actually coping with it and health needs of menopausal women are essential on a country wide basis to evolve meaningful policies.

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Socio-demographic variables		Frequency	%
Religion	Hindu	183	57.2
	Christians	128	40.0
	Muslims	9	2.8

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Age group	<50 years	167	52.2
	>=50 years	153	47.8
Education	High School And Above	150	31.9%
	Middle School	93	29.1%
	Primary School	73	22.8%
	NOT GONE TO SCHOOL	4	1.3%
Family type	Joint/ extended	114	35.6
	Nuclear	206	64.4
Marital Status	Married	273	85.3
	Widowed	35	10.9%
	Divorced	7	2.2
	Separated	5	1.6
Occupation	employed	91	28.4
	Not employed	229	71.6

Table No. 1: Socio-demographic characteristics of the study population

Symptoms	Postmenopausal Women (N= 160) Frequency % (95% CI)	Premenopausal Women (N= 160) Frequency % (95% CI)	Total % (N= 320) Freq %	Chi square value	df	Significance	Odds ratio (95% CI)
“Feeling of Fatigue/Lack Of Energy”	91 56.9% (48.8-64.4)	68 42.5% (35-50)	159 49.7% (44.1-55.6)	6.6	1	0.01	1.78 (1.146-2.78)
“easily get irritated”	73 45.6 (38.1-53.1)	58 36.5% (28.8-44.7)	131 41.1% (35.7-46.4)	2.76	1	0.097	1.46 (0.93-2.28)
Hot flushes	79 49.4% (41.9-56.9)	52 32.5% (25.6-40.6)	131 40.9% (35.3-46.6)	9.42	1	0.002	2.0 (1.2-3.1)
“feel sad/down”	70 43.8% (35.6-51.9)	55 34.4 (26.9-41.9)	125 39.1% (34-45)	2.94	1	0.08	1.48 (0.945-2.3)
muscle or joint pain	64 40% (31.9-48.1)	51 31.9 (25-39.4)	115 35.9% (30.6-41.3)	2.29	1	0.11	1.4 (0.9-2.27)
Night sweats	61 38.1% (30.6-45.6)	44 27.5% (21.3-35)	105 32.8 % (27.5-38.1)	4.09	1	0.043	1.6 (1.01-2.6)
“Sleep disturbance”	56 35% (27.5-42.5)	40 25 (18.1-31.9)	96 30% (25.5-35.2)	3.81	1	0.05	1.6 (0.996-2.6)
crying spells”	56 35% (28.1-41.9)	49 30.8% (24.5-37.7)	105 32.9% (27.6-37.9)	0.63	1	0.42	1.2 (0.75-1.9)
“loss of feeling in hands and feet”	37 23.1% (16.9-30)	35 22% (16.4-28.3)	72 22.6% (18.2-27.4)	0.056	1	0.8	1.06 (0.63-1.8)

TABLE No. 2: Prevalence of menopausal symptoms in women

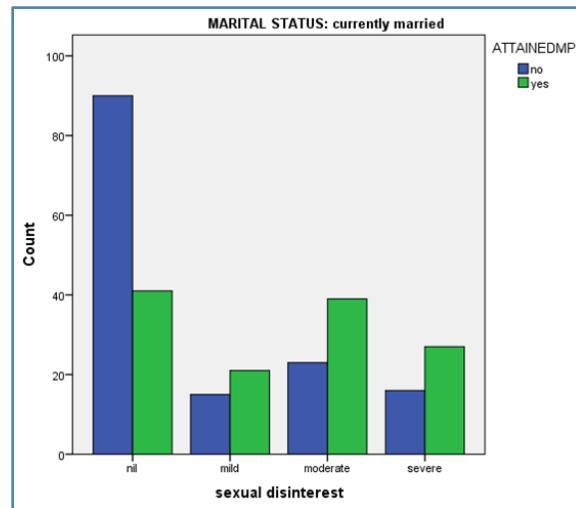


Figure 1: Bar diagram showing comparison of loss of sexual interest in women who attained menopause and not attained menopause

Present study	Fatigue/Lack Of Energy”	49.7%
	“Easily get irritated”	41.1%
	Hot flushes	40.9%
	“Feel sad/down”	39.1%
Bagga et al. ¹⁶	Loss of interest	93%
	Pressure/tightness in head	83
	Weight gain	67
	Hot flushes	54
Nayak G et al. ¹¹	Poor memory (73.7%), Feeling tired or worn out”	73%
	Decrease in physical strength and stamina	64.1%
	Muscles and joint pain	55.0%
	Mahajan N et al. ¹⁵	Fatigue
Hot flashes		56%
Cold sweats		52%
Backaches		51%

Table No. 3: Comparison of most prevalent four Menopausal symptoms in different studies with present study

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