

Menopausal symptoms: prevalence, severity and correlation with sociodemographic and reproductive characteristics. A cross sectional community based survey from rural Sindh Pakistan

Nusrat Nisar,¹ Nisar Ahmed Sohoo,² Raheel Sikandar³

Abstract

Objective: To determine prevalence and severity of menopausal symptoms and to investigate any correlation of sociodemographic and reproductive characteristics with menopausal symptoms in rural women.

Methods: The cross-sectional study was conducted in 2007-08 in rural Sindh, Pakistan, and comprised women of age 40-70 years who were selected through multistage random sampling. Sociodemographic information was collected on a predesigned proforma. Menopause Rating Scale was used to collect information regarding the prevalence and severity of menopausal symptoms. Multivariate logistic regression was used to adjust prevalence odds ratio for demographic and reproductive characteristics.

Results: From among a population of 525,082, the study selected 3062(0.5%) women. The prevalence of menopausal symptoms was mostly higher except bladder problems 1138(37.7%) and dryness of vagina 1008(34%). The frequency of symptoms — all mild in nature — were hot flushes 1287(42%), sleep problems 1251(40.9%), depressive mood 1169(38.2%), physical and mental exertion 1169(38.2%), and muscle and joint pain 861(28.1%). Significant association of the symptoms was found with age, education and menopausal status ($p < 0.05$ each).

Conclusion: The prevalence of most of the menopausal symptoms was high except for bladder problems and dryness of vagina. Majority of the symptoms were categorised as mild.

Keywords: Menopause, Symptoms, Prevalence, Age, Parity, Menopausal status. (JPMA 65: 409; 2015)

Introduction

Menopause is a feminine milestone that signals the end of women's reproductive life and the start of a new phase. It is usually diagnosed when a woman has not had a menstrual period for 12 consecutive months.¹

The reproductive aging in women is due to the depletion of ovarian follicles which results in profound fall in the production of hormones (oestrogen and progesterone). The deficiency of these hormones causes various menopausal symptoms.²

Literature from different parts of the world shows that an event of menopause is highly variable in timing and pattern.³ The global information concerning menopause reveals that experience of menopause is influenced by sociocultural, psychological and environmental factors.^{2,4} The nature, severity and frequency of symptoms vary not only among the individuals of different countries, but also in the same population with different cultures and ethnicities.⁴ The concept of local

biologies, reproductive characteristics and sociocultural aspects in relation to menopausal symptoms has been discussed in various studies.^{5,6}

Menopause becomes important for clinicians and health policy-makers as with general increase in life expectancy; women are likely to live for more than 20 years after menopause in oestrogen-deprived state, with impaired quality of life due to menopausal symptoms.⁷

A host of data exists for postmenopausal women dwelling in Western countries that have different sociocultural aspects and menopausal experiences. Few studies are available from the developing world about the prevalence of menopausal symptoms and correlation with sociocultural and reproductive characteristics.

The data on menopause in Pakistan is scarce and scanty and no study has been conducted on community-based rural women from Sindh.

Given these various considerations, the present study was conducted to determine the prevalence and severity of menopausal symptoms and to investigate any correlation of sociodemographic and reproductive factors with menopausal symptoms in rural women of the Sindh province of Pakistan.

^{1,3}Department of Obstetrics & Gynaecology, Liaquat University of Medical and Health Sciences, Jamshoro, ²District Coordinator National Programme for Family Planning and Primary Healthcare Matiary, Sindh, Pakistan.

Correspondence: Nusrat Nisar. Email: nushopk2001@hotmail.com

Subjects and Methods

The cross-sectional study was conducted in 2007-08 in rural Sindh,⁸ and comprised women of age 40-70 years who were selected through multistage random sampling. A predesigned questionnaire was used to collect data, including demography (age, education, employment and marital status) and reproductive parameters (such as parity, age of menarche, regularity of menses and age at menopause).

For the assessment of symptoms, menopausal rating scale (MRS) was used which is a validated instrument comprising 11 menopausal symptoms. These symptoms were further categorised into somatic, psychological and urogenital symptoms. Each symptom is rated from 0-4 as 'no symptom', 'mild', 'moderate' and 'severe' respectively. The English version of MRS was translated into local language for the present study. Informed consent was taken and the participants were given information regarding the purpose of the study in the local language. The questionnaire was filled by trained lady health workers who were selected from national programme and were supervised by the principal investigator. The methodology of the study has already been reported in detail.⁹

Multivariate logistic regression was used to adjust prevalence odds ratio (OR) for demographic and reproductive characteristics.

Results

In an overall population of 525,082, there were 15,721(3%) women who met the inclusion criterion. Initially, 3929(25%) of them were selected but the final sample comprised 3062(78%) women. Sociodemographic

Table-1: Sociodemographic characteristics and menopausal status.

Characteristics	n	%
Age in years		
40-46	1314	42.9
47-53	870	28.4
54-60	656	21.4
>60	222	7.3
Education of women in years		
No Formal education	2611	85.3
5 years	331	10.8
8 years	37	1.2
10 years	44	1.4
12 years	15	0.5
>12 years	24	0.8
Occupation of Women		
House wife	2316	75.6
Farmer	314	10.3
Labourer	221	7.2
Servant	61	2.0
Others	150	4.9
Socioeconomic Status		
Poor	1979	64.6
Middle class	907	29.6
Upper class	176	5.7
Marital Status		
Currently married	2354	76.9
Single	23	0.9
Widow	634	20.7
Separated	46	1.5
Divorced	03	0.09
Menopausal Status		
Post menopause	1478	48.3
Perimenopause	892	29.1
Premenopause	641	20.1
Undefined	51	1.7

Results are presented as number and percentage.

Table-2: Symptom on Menopausal Rating Scale.

Symptoms	Total		None		Mild		Moderate		Marked		Severe	
	n	%	n	%	n	%	n	%	n	%	n	%
1. Hot flushes, sweating	2224	72.6	838	27.2	1287	42	449	14.7	325	10.6	193	5.3
2. Heart discomfort	2162	70	900	29.4	1174	38.3	507	16.6	326	10.6	155	5.1
3. Sleeping problems	2489	81.2	573	18.7	1251	40.9	699	22.8	356	11.6	183	6.0
4. Depressive mood	2389	78	673	22	1169	38.2	593	19.4	417	13.6	210	6.9
5. Irritability	2408	78.6	654	2.4	1141	37.3	584	19.1	418	13.7	265	8.7
6. Anxiety	2293	74.8	769	25.1	1135	37.1	552	18	414	13.5	192	6.3
7. Physical and mental exertion	2620	85.5	442	14.4	1169	38.2	603	19.7	543	17.7	305	10
8. Sexual problems*	1707	65.7	889	29	827	27	559	18.3	212	6.9	109	3.6
9. Bladder problems**	1138	37.7	1880	61.4	685	22.4	211	6.9	144	4.7	98	3.2
10. Dryness of the vagina†	1008	34	1955	63.8	676	22.1	174	5.7	97	3.2	61	2
11. Muscle and joint problems	2567	83.8	495	16.2	861	28.1	579	18.9	578	18.9	549	17.9

Results are presented as number and percentage

* n=2596 ** n=3018 † n=2963.

Table 3: Adjusted* prevalence odd ratios for each symptom.

Characteristics	Hot flushes/ sweating		Heart discomfort		Sleep problem		Depressive Mood		Irritability		Anxiety		Physical Or Mental exertion		Sexual problems		Bladder problems		Dryness of vagina		Joint/muscle problems	
	OR†	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI	OR	95% CI
Age group																						
40 to 46‡	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
47 to 53	1.02	(0.81, 1.29)	1.13	(0.90, 1.42)	0.92	(0.70, 1.20)	1.23	(0.96, 1.59)	1.15	(0.89, 1.49)	1.21	(0.95, 1.54)	1.22	(0.91, 1.65)	1.17	(0.92, 1.48)	1.11	(0.90, 1.38)	0.91	(0.73, 1.14)	0.94	(0.71, 1.23)
54 to 60	1.02	(0.77, 1.36)	1.13	(0.86, 1.50)	0.90	(0.65, 1.25)	1.61	(1.16, 2.22)	1.49	(1.07, 2.06)	1.58	(1.17, 2.15)	1.40	(0.97, 2.03)	0.84	(0.64, 1.11)	1.21	(0.92, 1.58)	1.02	(0.78, 1.35)	1.47	(1.03, 2.11)
> 60	0.85	(0.55, 1.32)	1.35	(0.87, 2.11)	0.59	(0.37, 0.94)	1.37	(0.84, 2.26)	1.17	(0.72, 1.90)	2.31	(1.37, 3.89)	1.93	(1.02, 3.64)	0.92	(0.59, 1.43)	1.55	(1.02, 2.35)	1.17	(0.76, 1.82)	3.03	(1.47, 6.25)
Education of women																						
no formal education	1.02	(0.42, 2.50)	1.74	(0.74, 4.09)	0.91	(0.28, 2.98)	2.22	(0.91, 5.39)	0.72	(0.24, 2.14)	1.69	(0.69, 4.12)	1.02	(0.31, 3.38)	0.81	(0.30, 2.21)	0.73	(0.31, 1.68)	0.94	(0.4, 2.22)	1.40	(0.46, 4.28)
Five years of education	1.03	(0.41, 2.58)	1.97	(0.82, 4.74)	0.90	(0.27, 3.01)	2.59	(1.04, 6.48)	0.87	(0.28, 2.65)	1.81	(0.72, 4.53)	1.04	(0.30, 3.55)	1.16	(0.42, 3.25)	1.09	(0.46, 2.58)	1.22	(0.51, 2.93)	1.38	(0.44, 4.33)
Eight years	1.15	(0.35, 3.84)	1.21	(0.4, 3.67)	0.55	(0.13, 2.28)	2.80	(0.78, 10.08)	0.65	(0.16, 2.61)	4.57	(1.05, 19.88)	0.50	(0.12, 2.11)	1.26	(0.34, 4.73)	0.75	(0.25, 2.26)	1.61	(0.53, 4.86)	2.08	(0.41, 10.52)
Ten years	1.73	(0.54, 5.51)	2.70	(0.89, 8.18)	0.73	(0.18, 2.91)	3.30	(1.01, 10.8)	0.79	(0.21, 2.93)	2.37	(0.74, 7.57)	0.79	(0.19, 3.24)	0.75	(0.23, 2.43)	0.80	(0.29, 2.24)	1.73	(0.62, 4.85)	1.85	(0.42, 8.13)
Twelve years & above‡	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Occupation																						
House wife ‡	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Former	1.56	(1.07, 2.27)	0.74	(0.53, 1.03)	1.08	(0.72, 1.60)	1.41	(0.94, 2.12)	1.13	(0.76, 1.69)	0.83	(0.58, 1.18)	0.73	(0.48, 1.10)	1.08	(0.77, 1.51)	1.28	(0.93, 1.78)	1.33	(0.95, 1.85)	0.85	(0.57, 1.25)
Labourer	1.36	(0.98, 1.88)	1.14	(0.84, 1.55)	1.22	(0.85, 1.76)	1.30	(0.91, 1.84)	1.29	(0.90, 1.85)	1.36	(0.97, 1.93)	0.87	(0.59, 1.29)	1.08	(0.80, 1.47)	0.99	(0.74, 1.33)	1.10	(0.82, 1.49)	1.66	(1.1, 2.52)
Servant	0.73	(0.36, 1.49)	1.07	(0.52, 2.21)	1.71	(0.65, 4.50)	1.02	(0.46, 2.24)	1.06	(0.46, 2.44)	1.20	(0.54, 2.65)	1.03	(0.40, 2.61)	1.11	(0.52, 2.38)	1.27	(0.64, 2.51)	1.17	(0.58, 2.34)	2.55	(0.8, 8.18)
Others	0.95	(0.62, 1.46)	0.99	(0.64, 1.52)	1.51	(0.86, 2.65)	1.00	(0.62, 1.61)	0.81	(0.51, 1.30)	0.98	(0.62, 1.56)	1.10	(0.60, 2.00)	3.70	(2.00, 6.84)	1.35	(0.91, 2.02)	1.30	(0.87, 1.97)	1.32	(0.74, 2.35)
SES																						
Poor	0.64	(0.42, 0.96)	0.55	(0.36, 0.84)	0.84	(0.54, 1.31)	1.01	(0.66, 1.52)	0.64	(0.40, 1.03)	0.78	(0.51, 1.20)	0.88	(0.52, 1.49)	0.65	(0.43, 0.98)	1.04	(0.72, 1.51)	0.90	(0.62, 1.31)	0.63	(0.38, 1.06)
Middle	0.72	(0.47, 1.10)	0.53	(0.35, 0.82)	1.05	(0.66, 1.65)	1.17	(0.77, 1.79)	0.68	(0.42, 1.1)	0.78	(0.50, 1.20)	0.89	(0.52, 1.53)	0.78	(0.51, 1.19)	1.24	(0.85, 1.80)	1.06	(0.73, 1.56)	0.80	(0.47, 1.36)
Upper ‡	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Parity (per child)	1.03	(1.0, 1.06)	1.01	(0.98, 1.04)	1.01	(0.98, 1.04)	1.00	(0.97, 1.03)	1.00	(0.97, 1.03)	1.01	(0.98, 1.04)	0.98	(0.95, 1.02)	0.99	(0.96, 1.01)	0.99	(0.97, 1.02)	0.96	(0.94, 0.99)	1.04	(1.01, 1.08)
Menopausal Status																						
Pre-menopause ‡	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Peri-menopause	1.32	(1.03, 1.69)	1.51	(1.18, 1.93)	1.68	(1.26, 2.24)	1.89	(1.45, 2.46)	2.00	(1.51, 2.66)	1.94	(1.49, 2.52)	1.32	(0.95, 1.83)	1.63	(1.27, 2.09)	1.62	(1.29, 2.04)	1.96	(1.55, 2.47)	1.28	(0.95, 1.72)
Postmenopause	0.90	(0.69, 1.17)	0.83	(0.64, 1.07)	1.13	(0.84, 1.51)	1.15	(0.87, 1.51)	0.95	(0.71, 1.25)	0.90	(0.69, 1.18)	0.75	(0.54, 1.05)	1.07	(0.83, 1.38)	0.89	(0.69, 1.15)	0.88	(0.68, 1.13)	0.92	(0.68, 1.25)
Living with Husband																						
Yes ‡	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
No	1.03	(0.51, 2.07)	0.62	(0.29, 1.34)	1.66	(0.81, 3.43)	0.76	(0.33, 1.78)	1.01	(0.46, 2.25)	0.87	(0.40, 1.87)	1.22	(0.50, 2.99)	4.82	(1.88, 12.35)	0.84	(0.43, 1.65)	0.94	(0.46, 1.93)	1.04	(0.45, 2.44)

*Each covariate adjusted for all others.

†OR, Odds ratio; CI, confidence interval

‡ Reference category.

details were noted⁹ at the outset (Table-1).

Many of the menopausal symptoms were frequent except bladder problems and dryness of vagina, which were present in 1138(37.7%) and 1008(34%) women respectively. The most prevalent symptom was physical and mental exertion in 2620(85.5%) followed by muscle and joint problems in 2567(83.8%) (Table-2). Vasomotor symptoms were reported by 2224(72.6%) and the prevalence of psychological symptoms was 2489(81.2%). Sexual and urogenital problems were reported by 1707(65.7%) and 1138(37.7%) women respectively.

In terms of severity of symptoms - all mild in nature -hot flushes were reported by 1287(42%), sleep problems 1251(40.9%), depressive mood 1169(38.2%), physical and mental exertion 1169(38.2%), muscle and joint pain 861(28.1%), sexual problems 827(27%), bladder problems 685(22.4%) and dryness of vagina 676(22.1%).

In multivariate analysis the odds of reporting psychological symptoms remained significantly high at 54-60 years of age ($p < 0.05$), while the physical symptoms were found significantly high in women more than 60 years of age ($p < 0.05$).

Psychological symptoms like anxiety and depressive mood were frequently reported by women having 8-10 years of education ($p < 0.05$). Perimenopausal status had significant association with vasomotor and psychological symptoms ($p < 0.05$). There was no significant association of menopausal symptoms with socioeconomic status, occupation and parity of women ($p > 0.05$ each) (Table-3).

Discussion

The cross-sectional survey was conducted in rural Sindh with the aim of investigating menopausal symptoms prevalence and their association with sociodemographic and reproductive characteristics. To the best of our knowledge it is the first kind of survey from this region of Pakistan.

The prevalence of menopausal symptoms was high than what has been reported in literature.^{3,10-12} The occurrence of most of the symptoms was high, but the worth mentioning aspect about the symptoms is that most of the symptoms were categorised as mild on MRS by majority of the studied population.

Variety of reasons may be responsible for this high frequency. The different sociocultural aspects, economical status, reproductive parameters like number of children and individual perception of menopause can be the reason for different frequencies. Along with all the above differences, the different study design and the

instruments used may also account for different results.¹⁰

The present study indicated an overall increased occurrence of psychological, somatic and symptoms similar to literature.^{3,13-15,19}

The majority of our population belonged to poor socioeconomic and educational status with high parity. Poor women deprived of healthy diet and prone to excessive physical work experience increased occurrence of psychological and physical symptoms.

The less frequently reported symptoms were bladder problems and dryness of vagina; these findings were consistent with the literature.¹⁶

It may be due to the reason that in our rural society postmenopausal women are less active sexually¹⁷ as they become involved in taking care of their grand-children and give more time to religious activities.⁹

Multivariate analysis indicated that the psychological symptoms were significantly associated with age 45-60 years and somatic symptoms were more prevalent after 60 years; similar to earlier reports.^{18,19}

The prevalence and severity of vasomotor symptoms was high, but we did not find any significant association of vasomotor symptoms with any age group. This was inconsistent with other studies.¹⁸

It has been reported in literature that women with high educational level report less menopausal symptoms than those with low educational attainment. Inconsistent with previous reports,²⁰ our data did not indicate any significant association of most of the menopausal symptoms with the level of education except the few psychological symptoms like depressive mood and anxiety which were significantly associated with 8-10 years of education. Similarly, the present data did not reveal any correlation between the symptoms and occupation, socioeconomic status and parity of women studied. These findings are inconsistent with those of a number of other studies.^{21,22}

The prevalence of most of the vasomotor, psychological and sexual symptoms was significantly associated with perimenopause²³ while muscle and joint pains had significant association with postmenopausal status.²⁴

This may be due to the fluctuating level of oestrogen in the blood at perimenopause. Other factors may be the social issues related to the family, stress and concern regarding growing children.

An oestrogen decline during postmenopausal status has

been associated with degeneration of cartilage and, therefore, generation of bone pains. Other attributed reasons to bone pain are the lack of physical activity and weight-gain.

Conclusion

The prevalence of most of the menopausal symptoms was high except for bladder problems and dryness of vagina. Majority of the symptoms were categorised as mild by large proportion of women. Significant association of menopausal symptoms was found with age, education and menopausal status.

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