

## ORIGINAL ARTICLE

## AGE AND SYMPTOMS AT NATURAL MENOPAUSE: A CROSS-SECTIONAL SURVEY OF RURAL WOMEN IN SINDH PAKISTAN

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**Background:** Age at menopause and symptoms vary among populations and societies. Scarce data is available about menopausal age, symptoms and socio-demographic and reproductive factors from rural women of Sindh, Pakistan. The present study was conducted to find out the self reported age at natural menopause, prevalence of menopausal symptoms, and to identify socio-demographic and reproductive factors that may influence the onset of menopause. **Methods:** A survey was carried out on women aged 40–70. A multistage random sampling technique was used to retrieve 1,355 women with natural menopause from 10 union councils of district Matiari. These women were further categorised into 3 groups, I, II, and III having menopause for 1–5, 6–10, >10 years respectively. Pearson's chi-square test was used to analyse the percentage of symptoms distribution. ANOVA was used to analyse the relationship between demographic, reproductive factors and the age at natural menopause. **Results:** Age at menopause in our subjects was 46.2±6.4 years. The prevalence of menopausal symptoms ranges from 26 % to 83%. Frequency of somatic, psychological and urogenital symptoms was high in group II. No significant association was found between parity, socioeconomic status and age at natural menopause. **Conclusion:** The results have shown the early age at menopause. The prevalence of menopausal symptoms is high. Results regarding correlation of age at menopause with socio-demographic and reproductive characteristics were different from literature.

**Keywords:** Menopause, Postmenopausal Syndrome, Age, Sindh, Reproductive, Rural, Women

### INTRODUCTION

Natural menopause signals the end of women's reproductive period. It usually results from failure of ovaries which lead to decline in the production of oestrogen and progesterone. The deficiency of these hormones elicits various menopausal symptoms which not only impairs the quality of life of women but can have implications for subsequent health of women.<sup>1,2</sup> It has been observed in several reports that the menopause is highly variable in timing and pattern. The age at occurrence of natural menopause, the nature, frequency, and severity of symptoms is affected by several socio-cultural, psychological and environmental factors.<sup>3,4</sup> The age at natural menopause and the experience of menopausal symptoms vary not only among the individuals of the different countries but also in the same population with different cultures and ethnicities. The concepts of local biologies, reproductive parameters and socio-cultural aspects in relation to age at menopause and menopausal symptoms have been discussed in various studies.<sup>4-6</sup>

The assessment of age at menopause and factors that affect it are important for clinicians due to increased risk of associated morbidity and mortality. The risk of cardiovascular disease and osteoporosis tends to be high in women who experience early menopause whereas delayed menopause is associated with increased risk of breast and endometrial cancer.<sup>7,8</sup>

Many studies have been carried out to estimate the age at natural menopause but most of these studies were based on the sample of Caucasian women from western countries. One international study from 11 countries found the mean age at menopause as 50 years.<sup>9</sup> Few studies on non-Caucasian women have reported younger age at menopause than those reported from Caucasian women.<sup>10</sup> In India reported age at menopause is between 40–49 years.<sup>11</sup> Very few Studies from Pakistan reported the mean age at menopause to be 47 years.<sup>12</sup> Data from Pakistan regarding the age at natural menopause and the factors affecting it is scanty.

The present study was conducted with aim to find out the self-reported age at natural menopause and to estimate the prevalence of menopausal symptoms and to identify the socio-demographic and reproductive factors that may influence it.

### MATERIAL AND METHODS

This population-based survey was carried out on women aged 40–70 residing in Matiari district of Sindh, Pakistan. Matiari District is one of the rural districts of Sindh Province of Pakistan. A multistage random sampling technique was used for identification of women included in the study.

At first stage of sampling 10 union councils from all 3 Talika were selected by lottery method. During the second stage of sampling the name and

address list of all women aged 40–70 years was drawn from the Basic Health Centres record (KHANDAN) register which is one of the Health Management and Information System (HMIS) Tools of National Program for Family Planning and Primary Health Care Pakistan. The total 15,721 women’s names and addresses were retrieved. In the third stage, out of established list every fourth women was selected randomly. The net sample comprised of 3,929 women. Out of it, the women who reported natural menopause were included in the present study.

For collection of data five teams were trained each team comprising of 3 members two Lady Health Workers and one Lady Health Supervisor of National Programme of Family Planning and Primary Healthcare Matiari. The questionnaire used for collection of data contains information regarding demography, and reproductive parameters. The socioeconomic status of participants was categorised according to the working status of husband.

The parity was categorised according to the number of pregnancies in whole reproductive life. The natural menopause was defined as amenorrhea for last  $\geq 12$  months without any other pathological cause. Surgical menopause was defined as cessation of menstruation following either removal of ovaries (with or without hysterectomy).<sup>13</sup>

Women who reported natural menopause were categorised according to the period since menopause into 3 groups, I, II, and III having menopause for 1–5, 6–10, >10 years respectively. Menopause Rating Scale (MRS) was used to record the menopausal symptoms.<sup>14</sup> Informed consent was taken from every participant.

Data analysis was done using SPSS-15. Results are presented as numbers (percentages) for qualitative variables and Mean $\pm$ SD for normally distributed quantitative variables. Pearson’s chi-square test was used to analyse percentage of symptom distribution in postmenopausal women at different periods of menopause. ANOVA was used to analyse the relationship between demographic, reproductive factors, and age at natural menopause, and  $p < 0.05$  was considered significant.

## RESULTS

The mean of population surveyed was 53.6 $\pm$ 6.7 years (40–70 years). Seventy percent of women were aged 47–60 years. The population of women received no formal education was 1223 (90.3%). 1062 (78.4%) of women were housewives, 880 (64.9%) were married and 922 (68.1%) belongs to poor socioeconomic status. Mean parity was 6.9 $\pm$ 3.5 (0–20). Fifty percent of women experience menarche at the age of 11–14 years. Mean age at menarche was 14.35 $\pm$ 1.5 years. Mean age at menopause was 46.2 $\pm$ 6.4 years. Five hundred eighty two (43%) reported menopause since 1–5 years (Table-1).

**Table-1: Socio-demographic data of subjects (n=1,355)**

Factors	n	(%)
<b>Age (years)</b>		
40–46	218	16.1
47–53	451	33.3
54–60	495	36.5
>60	191	14.1
<b>Education years</b>		
No formal education	1223	90.3
5	103	7.6
8	11	0.8
10	10	0.7
>10	8	0.6
<b>Occupation</b>		
House wife	1062	78.4
Former	93	6.9
Labourer	117	8.6
Servant	16	1.2
Others	67	5.0
<b>Socioeconomic status</b>		
Poor	922	68.1
Middle class	354	26.2
Upper class	79	5.8
<b>Age at Menarche (years)</b>		
<11	18	1.3
11–14	701	51.7
>14	636	46.9
<b>Parity</b>		
None	53	3.9
1–3	179	13.2
4–6	384	28.3
>6	739	54.5
<b>Years since Menopause</b>		
1–5	582	43
6–10	527	38.9
>10	246	18.1
<b>Marital Status</b>		
Married, living as married	880	64.9
Widow	450	33.3
Separated	15	1.1
Divorced	10	0.7

The percentage occurrence of menopausal symptoms in the three domains of MRS is presented in (Table-2). The prevalence of menopausal symptoms was mostly high except bladder problems (440, 32%) and dryness of vagina (336, 26%). Most prevalent symptoms in the studied population was physical and mental exertion (1,134, 83.7%) followed by muscle and joint problem (1,126, 83.1%).

**Table-2: Frequency of menopausal symptoms (n=1,355)**

Menopausal Symptoms	Number	Percentage
<b>Somatic Symptoms</b>		
Hot flushes/sweating	940	69.4
Heart discomfort	907	66.9
Sleep problem	1068	78.8
Muscle/Joint Problems	1126	83.1
<b>Psychological Symptoms</b>		
Depressive Mood	1039	76.7
Irritability	1021	75.4
Anxiety	973	71.8
Physical/Mental exertion	1134	83.7
<b>Urogenital Symptoms</b>		
Sexual problems	626	60
Bladder problems	440	32
Dryness of vagina	336	26

Analysis of different symptoms in three groups shown no significant difference in most of the reported

symptoms however the reported frequency of somatic, psychological and Urogenital symptoms was high in group II (menopause since 6–10 years) and declined in group III (>10 years since menopause). The significant difference in three groups was found only in the frequency of sexual symptoms (Table-3).

**Table-3: Frequency of symptoms at different years since menopause [n(%)]**

Domains	Years since Menopause			p
	1-5 year	6-10 year	>10 year	
<b>Somatic symptoms</b>				
Hot flushes/sweating	401 (69.1)	373 (71.0)	164 (67.2)	0.540
Heart discomfort	375 (64.7)	366 (69.7)	162 (66.4)	0.199
Sleep problem	459 (79.1)	423 (80.6)	182 (74.6)	0.164
Joint/muscle problems	476 (82.1)	444 (84.6)	201 (82.4)	0.512
<b>Psychological symptoms</b>				
Depressive Mood	446 (76.9)	404 (77.0)	184 (75.4)	0.880
Irritability	448 (77.2)	393 (74.9)	175 (71.7)	0.233
Anxiety	423 (72.9)	372 (70.9)	173 (70.9)	0.707
Physical/Mental exertion	489 (84.3)	439 (83.6)	200 (82.0)	0.709
<b>Urogenital Symptoms</b>				
Sexual problems	295 (62.9)	245 (60.8)	84 (49.7)	0.010
Bladder problems	169 (29.5)	185 (35.7)	84 (34.4)	0.081
Dryness of vagina	144 (25.9)	135 (27.0)	56 (23.9)	0.676

Analysis of relationship between age at natural menopause and various demographic and reproductive parameters like socioeconomic status and age at menarche and parity does not indicate any significant association (Table-4).

**Table-4: Relationship between socio-demographic and reproductive factors and age at onset of menopause (Mean±SD)**

Characteristics	Age at menopause	p
<b>Age at menarche</b>		
<11 years	43.3±6.3	0.008
12-14 years	46.4±6.3	
>14 years	45.9±6.7	
<b>Parity</b>		
None	45.7±7.4	0.091
1-3	45.2±6.7	
4-6	45.8±6.9	
>6	46.5±6.3	
<b>Socioeconomic Status</b>		
Poor	46.2±6.6	0.527
Middle	45.8±6.4	
Upper	46.6±7.6	

## DISCUSSION

The present survey was conducted in rural area of Sindh, Pakistan with an aim to find out the age at natural menopause and the factors affecting its onset and to investigate the prevalence of menopausal symptoms

The recalled age at menopause observed in present study was 46.2±6.4 years which is comparable with other available reports.<sup>10,12,15,16</sup> Studies from Pakistan, India and other developed countries observed the mean age at menopause higher than the present study.<sup>5,11,17,18</sup>

Though the women's age at natural menopause is determined by the number of primordial ovarian follicles, that is women experience menopause when the number of primordial follicles has fallen to the

crucial number<sup>19</sup>, but along with this fact the variation in the age at natural menopause may be attributed to the geographic, environmental, nutritional, cultural and genetic factors..

The present study indicated an overall increase in the prevalence of menopausal symptoms in studied population than those found in the literature.<sup>16,20</sup> This may be due to many factors like early age at menopause, socio-demographic/socio-cultural factors, and individual perception of menopause, genetic and racial differences and reproductive parameters like parity. Apart from all these, the different instruments used to record the menopausal symptoms may have accounted for the discrepant findings.

Frequency of psychological and somatic symptoms ranges from 70% to 83% and these symptoms were frequent at 6–10 years of menopause and declined after 10 years of menopause. These findings are similar to the literature.<sup>17,21</sup> The increased frequency of psychological and somatic symptoms may be due to the fact that most of subjects were poor, less educated, and had high parity.

Poor women with fewer intake of healthy diet, poor excess and awareness of health facility, excessive physical work to take care of family and stress regarding need of growing children may be the reason for the above findings.

The increased frequency of symptoms during earlier years of menopause and declined frequency during later years of menopause may be due to the fact that at later years of life women in rural society are usually less active physically and involved in religious activities like offering prayers and other rituals. Other reason may be the experience and maturity attained by women at that age to cope effectively with the biological changes.

The less frequently reported symptoms were dryness of vagina, bladder problems and sexual problems. These findings are consistent with literature.<sup>22,23</sup> The possible explanation to it may be that the postmenopausal women are less active sexually in Pakistani society.<sup>24</sup> They become involved in taking care of their grand children and offering religious activities.

The findings of present study in relation with age at occurrence of menopause and parity does not correlate with the literature<sup>3,25</sup> who support that for parous women age at menopause occur significantly later than nulliparous women however few reports find such relation only in women with high socioeconomic status.<sup>26</sup> The majority of women in present study belong to lower socioeconomic status.

Regarding socioeconomic status in relation to age at menopause literature reported that poor and undernourished women appear to have menopause 4 years earlier than well-nourished women.<sup>27</sup> Other

factors observed in relation with early age at menopause were the lower educational attainment and unemployment.<sup>3,28</sup> The researcher did not find any significant association with age at menopause and socioeconomic status. The reason may be that the majority of women belong to one category.

Single women have been found to experience earlier menopause than ever married women.<sup>26</sup> we did not analyze the data regarding relationship of age at menopause and marital status as more than 60% of women belongs to one category this may result in biased results.

In the present study the researcher observed that age at menarche is significantly associated with age at menopause this is similar to the other studies.<sup>26,29</sup>

There are several limitations with the present study. First the women were asked to provide some retrospective information such as age at menopause and age at menarche hence the recall bias is unavoidable especially in some older women.

Second we have used MRS which is validated instrument to record the menopausal symptoms, but the symptom reported by it is the subjective perception of women which may have resulted in high prevalence of most of the symptoms.

Third the seasonal onset of some menopausal symptoms like sweating might be a confounding factor as the weather of the region is hot and women may not distinguish between the sensations of heat and sweating caused by hot weather. Further investigations will be expected in more extensive geographic areas with larger population in Pakistan. Strengths of present study are the population based character and the use of validated instruments to assess Menopausal symptoms.

## CONCLUSION

The menopause in women in rural Sindh is at an early age. The prevalence of menopausal symptoms is high except bladder problems and dryness of vagina. The findings regarding the association of age at menopause with Socio-demographic and reproductive characteristics are variably different from other regions of the world. Further work is recommended to look into the problem in depth.

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