ORIGINAL ARTICLE

Symptoms of Early Onset of Menopause in Women, A Cross-Sectional Study in District Shaheed Benazirabad

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ABSTRACT

Background: Early menopause is a significant public health concern as the reproductive health of women gets affected and predisposed to early risk, psychological, sexual, and other disorders, poor bone health, and chronic diseases.

Objective: This study aimed to assess symptoms of early menopause in females presenting to the outpatient clinics of the Gynecology and Obstetrics Department of Peoples Medical College Hospital in District Shaheed Benazirabad.

Methods: A descriptive cross-sectional study was conducted on women with a history of early menopause. The study was conducted in outpatient clinics of the Gynaecology and Obstetrics Department of Peoples Medical College Hospital from August 2022 to October 2022. 180 women aged between 40 and 50 years were included with a history of early onset of menopause before the age of 40. Data was analyzed using SPSS version 27.

Results: The mean age was found to be 38.5 ± 0.5 Years for early menopause. Females were observed to be housewives at 77.8%. Family history was present in 26% of women, of whom 35% constituted mothers. The frequency of symptoms was headache 152(84.4%), followed by hot flashes 145(80.6%), night sweats 142(78.9%), mood changes and sleeping problems 135(75.0%), joint pain 133(73.9%), while osteoporosis 128(71.1%), joint stiffness 125(69.4%), vaginal dryness 54 (30.0%) and UTI 40 (22.2%).

Conclusion: The most common symptoms studied in this study included headaches, joint pain, hot flashes, night sweats, vaginal dryness, urinary tract infections, and anxiety. Many approaches have been promoted as aids in managing early menopause. Some complementary and alternative recommendations are impactful education and increased awareness that can help preserve the quality of life of women.

Keywords: Menopause, early menopause, reproductive health, pre-menopause, early onset of menopause, reproductive age.

INTRODUCTION

Menopause is the permanent cessation of the menstrual cycle brought on by a reduction in ovarian follicular activity, which also, in some cases, causes amenorrhea for a full year. The age and duration of natural menopause are important determinants of negative health outcomes [1]. Menopause can be classified as "early" if it occurs before the age of 45 and "premature" if it starts before the age of 40 [2]. Understanding the reasons why particular circumstances contribute to a faster reduction in ovarian function may aid in preventing early fecundity loss and the effects of long-term estrogen deficiency-related health issues like osteoporosis, cardiovascular disease, and possibly Alzheimer's disease. The elements that have been suggested to contribute to the early onset of natural menopause are succinctly illustrated. Smoking, race, education, parity, menstrual cycle duration, oral contraceptive use, age at menarche, severe depression, and anthropometry handedness are some of these variables. It has been discovered that smoking cigarettes can hasten the onset of menopause by up to one year [3]. According to estimates, 50% of women's genetic origin influences when menopause first occurs. Additionally, it

has been discovered that women with hypertension and very little sun exposure throughout their lives undergo menopause early [4]. Every year, 1.5 million women go through the menopause transitions, which are frequently accompanied by uncomfortable symptoms such as vasomotor symptoms, diminished libido, vaginal dryness, insomnia, lethargy, and joint pain. Most women directly connect the common menopause symptoms of hot flashes, parched vagina, sleeplessness, and restless sleep (with or without associated night sweats). Women may also encounter cognitive impairments and depressive symptoms during menopause, which are less regularly related to hormones. It can be difficult for women to deal with depression and cognitive decline, which increases the burden of medical sickness on the aging female population [5].

Most women in Western countries experience menopause between the age of 40 and 58 years. Premature or early menopause has been associated with an increased risk of coronary artery disease and a slightly consistent with an increased risk of stroke. With, an analysis from the Women's Health Initiative found a mild association between earlier menopausal age and increased risk of heart failure [6]. Another Asian-based study regarding the assessment of early menopause symptoms in early and late menopausal women stresses that women experienced adverse symptoms

in the premature menopause phase as compared to the late menopausal period [7]. Another major finding about the association of oral contraceptives with early onset of menopause shows a positive relationship that if women use, oral contraceptives may have a higher risk of premature menopause [8]. According to recent research, women who go through early menopause are more likely to die young and have cognitive decline among other unfavorable health effects. A study conducted at Punjab Rangers Hospital Lahore, revealed early menopausal symptoms, among them vasomotor and psychological symptoms were associated [9]. Symptoms of early menopause are often underreported or misdiagnosed. Women may experience atypical or more severe symptoms such as cognitive changes, mood disorders, sexual dysfunction, and cardiovascular risk that are not commonly discussed or understood in the context of menopause. Current research has not sufficiently addressed the impact of these symptoms on mental health, daily life, and long-term well-being. The study aimed to examine the symptoms of onset of early menopause in females presenting to outpatient clinics of the Gynaecology and Obstetrics Department of Peoples Medical College Hospital in District Shaheed Benazirabad.

MATERIALS AND METHODS

A hospital-based descriptive cross-sectional study was conducted at the Gynecology and Obstetrics Department of Peoples Medical College Hospital, Nawabshah from August 2022 to January 2023. Approval for the study was sought from the Institutional review board (PUMHS/SBA/CHS 434) and the gynaecology department at Peoples Medical College Hospital, Nawabshah. The study population includes women aged 40 to 50 who visited the hospital due to gynecological problems but experienced early menopause. The data from attendant women was also gathered who came with patients and experienced early menopause. The study population was comprised of conveniently sampled women. A sample size (n) of 180 was computed using the single population formula Z^2pq/e^2. Taking into account the 95% confidence level, 5% margin of error, and 9.4% prevalence of early onset of menopause from a previous study [10] (Z = 1.96, e = 0.05, p = 0.094, and q = 0.95).

Data was collected based on the symptoms reported by the participants. The questionnaire was divided into three parts. The first part of the questionnaire was based on the basic characteristics of the participants which include Employment status, income level, and educational status of the participants. The second part of the questionnaire includes family history of early menopause, parity of women, and history of menstruation. The third part of questionnaire included the information related to symptoms of early menopause. The questionnaire was written in English, Urdu, and Sindhi for the understanding of the participants. The questionnaire was pre-tested on 10 females with a history of early-onset of menopause.

For the quality of the data, simple, clear, and acceptable language was used. The data was collected by the researchers themselves. The adjustments were made based on feedback from the pre-tested questionnaire. A one-day training was conducted on data collection and accuracy. Data coding and data entry were checked at every step. The strict monitoring and rechecking of the data was done regularly to address any issues with the data. Informed written consent of participants was obtained before involving them in the study. The participants were informed about the purpose, method of collection, benefits, and risks of the study. They were assured of the maintenance of privacy and confidentiality throughout the data collection, analysis, and dissemination of the research.

The data was coded, entered, and analyzed using the Statistical Package for Social Sciences (SPSS) for Windows version 27. Descriptive statistics of frequencies and percentages were generated for categorical variables and supplied in the form of descriptions and tables. Age for the early menopause was taken as mean ± standard deviation. History of menarche and birth spacing, family income, and educational status were calculated as frequencies and percentages. Symptoms were also listed based on the frequency and percentage of reporting each symptom by the participants.

RESULTS

According to our study, the mean age was found to be 38±0.5 years for early menopause. The employment status showed housewives 77.80%, are homemakers. 40% of husbands earn this income bracket as shown in Table **1**. 45% have completed primary education. In income, most people below 12000 PKR were 40%. In educational status uneducated and primary comprised 45% respectively. In 26% of individuals, a history of early menopause was present and, the mother dominated with 19.40%. In parity status, mothers with 5 or above children constituted 72.80%. An irregular menstrual cycle was found in 36.10% of women. History of birth spacing was found in 22.8% of women. 51% of women fell in the normal weight range, whereas those categorized as overweight to obese (1, 2, 3) represented a collective frequency of 44%.

Table 1: Sociodemographic characteristics and reproductive history of women with early menopause.

Sociodemographic Characteristics	Frequency	Percentage
Employment status		
Housewife	140	77.8
Labor	25	13.9
Farmer	11	6.1
Tailor	4	2.2
Incomes of husband		
Up to 12000 per month	72	40.0
13000 to 25000 per month	61	33.9
26000 to 40000 per month	23	12.8
Above 40000 per month	24	13.3

Sociodemographic Characteristics	Frequency	Percentage
Educational status		
Illiterate	81	45.0
Primary	81	45.0
Middle	3	1.7
Secondary	7	3.9
Intermediate	6	3.3
College or university	2	1.1
Early menopause (Family History)		
Present	47	26.0
Absent	133	74.0
Early menopause family history relationships		
Mother	35	19.4
Mother-in-law	4	2.2
Grandmother	7	3.9
Mention relation	1	0.6
Parity status of women with early menopause		
No any	1	0.6
1-2	18	10.0
3-4	30	16.7
5 or above	131	72.8
Irregular menstrual cycles		
Yes	65	36.1
No	115	63.9
histories of birth spacing		
Yes	41	22.8
No	139	77.2
Body mass index in women with early menopause		
Underweight	10	3.0
Normal	91	51.0
Overweight	49	27.0
Obese 1	24	13.0
Obese 2	5	3.0
Obese 3	1	1.0

The frequency of symptoms in menopausal were shown in Table **2**. The following symptoms were reported as headache 152(84.4%), followed by hot flashes 145(80.6%), night sweats 142(78.9%), mood changes and sleeping problems 135 (75.0%), joint pain 133 (73.9%), while osteoporosis 128 (71.1%), joint stiffness 125 (69.4%), problem with memory and concentration 122 (67.8%), thinning of hair 121 (67.2%) anxiety 117 (65.0%), dry skin 88 (48.9%), loss of breast fullness 81 (45%), palpitation 66 (36.7%), vaginal dryness 54 (30.0%), chills 52 (28.9%), increase facial hair 50 (24%), feeling of loss of self-44 (24.4%), recurrent UTI 40 (22.2%), loss of confidence 32 (17.8%), discomfort during sex, reduce sex drive 17 (9.4%), and tinnitus 13 (7.2%).

DISCUSSION

Early menopause is widely studied in many countries for the mean age and symptomatology. However such studies were not previously conducted in the rural parts of Sindh, Pakistan. According to our study, the mean age was found to be 38.5±0.5 years for early menopause. It is comparatively lower than the mean age reported in the West [8]. The age reported in our study is much higher than the study previously conducted in the urban cities of Pakistan, which has reported the mean age for menopause as 35 (+/- 1.5 years) [10]. The study identifies 26.1% of early menopause cases with a family history, predominantly from mothers (19.4%). Consistent with Asian literature, suggesting a higher risk when mothers experience early menopause. In interior Sindh, similar patterns emerge as early menopause with family history, ovarian cancer, and specific surgeries. History of premature menopause in parents and siblings, contributing to 25-30% of early menopause cases was reported in a previously conducted study [11], which is similar to the results of the current study. A study in Massachusetts identified early menopause is frequently found in females whose mother and sister experienced menopause before the age of 46 years [12].

Our study indicates high parity (5 or more children) in 72.8% of women. In contrast, a Karachi-based study opposes our findings, citing parity delays in menopause in females. This difference may have occurred due to a small sample size taken in a study previously conducted [13]. The present results highlight that females in our study with a high number of children have early menopause and a Turkish-based study supports our study results [14]. Our study shows that 20.0% of women with early menopause had their menarche at the age of 13. A study from Pakistan shows that those females whose age of menarche was early were having

Table 2: Frequency of symptoms related to early onset of menopause.

Symptoms	Frequency	Percentage	Symptoms	Frequency	Percentage
Headache	152	84.4	Loss of breast fullness	81	45.0
Hot Flashes	145	80.6	Palpitation	66	36.7
Night Sweets	142	78.9	Vaginal dryness	54	30.0
Mood Changes	135	75.0	Chills	52	28.9
Sleeping Problems	135	75.0	Increase facial hair	50	27.8
Joint Pain	133	73.9	Feeling of loss of self	44	24.0
Osteoporosis	128	71.1	Recurrent UTI	40	22.2
Joint Stiffness	125	69.4	Loss of self confidence	32	17.8
Problems with Memory/Concentration	122	67.8	Discomfort during sex	17	9.4
Thinning of Hair	121	67.2	Reduce sex drive	17	9.4
Anxiety	117	65.0	Tinnitus	13	7.2
Dry Skin or Changes in Skin	88	48.9	-	-	-

early menopause giving similar results as in our study [15]. A study based in seven Southeast Asian countries backed our study and the statement justified that age at menarche is important to understand the age of early menopause. Females with early menarche with less than 11 years have a risk of entering into early menopause [16]. Our study aligns with prior research, emphasizing gestational age as a significant factor in early menopause. Specifically, we found that gestational age between 17-20 years occurred in 46.1% of cases. A study from the UK further supports this connection, highlighting extremes of birth weight standardized by gestational age are crucially linked to early menopause [17]. The results of our research indicate that the frequency of irregular menstrual cycles was less in females with early menopause. Specifically, 63.9% of women in our study had no irregular menstrual cycles, while 36.1% had no irregular cycles. In contrast, a study on Japanese women found a high frequency of irregular menstrual cycles in females with early menopause, suggesting that irregularities are more common in females with earlier age of menopause [18].

According to data collected in our present study 18 (10.0%) women were addicted to cigarette smoking along with drug abuse 15 (8.3%). It is stated that females who smoke, are more likely to enter early menopause at younger as compared to non-smokers [19]. A study conducted in Lahore Pakistan presented frequency of cigarette smoking is more in females with early menopause [20]. In our sample, 81.7% of women were not engaged in any form of addiction. A study from New York found no frequency of drug use in females with early menopause [21]. Our findings show that 50.6% of women with normal BMI and 44% are overweight to obese. Our study that age at natural menopause and BMI diverges from the findings of a study conducted in Iran and Pakistan, where low BMI and reduced diet were linked to early menopause [22, 23]. The research findings indicate a connection between physical activity and early menopause. Surprisingly, 67.8% of women engaged in intense physical work, contradicting the literature. A Pakistani study emphasized age as a key factor affecting body composition and nutrient intake, highlighting low physical activity as a significant contributor to the age at menopause [24]. The study majority of the females have insufficient educational background, with 45% having no education and 45% having primary education. This was relevant to a European study suggesting that lower education has a role in earlier menopause [25].

Our study found that 40% of women with early menopause had husbands earning around 12000 per month, suggesting a lower socioeconomic status. This aligns with an Islamabad study, where monthly earnings below 30000 were frequent in females with early menopause due to poor socioeconomic status [26]. The study results of New York identified that the highest income is more frequent in females with late age of menopause

which is similar to our findings of very less females with high income at early menopause [27]. Our study indicates that only 22.8% of women used birth spacing methods, suggesting it is not frequent with the early age of menopause. In contrast, a Turkish study suggests a potential impact of methods, such as oral contraceptives. Our findings show 8.9% used injections, and 4.4% used pills. Regarding diseases, our study reveals significant portions with hypertension (39.4%), anemia (22.2%), and diabetes (17.8%). This aligns with a Saudi Arabian study linking chronic diseases to age at menopause using Menopausal Rating Scales (MRS) [28]. An Iran-based study proves that females with a history of chronic diseases such as HTN and DM experience menopause earlier than their counterparts without such history [29]. In early menopausal women, prevalent symptoms include headache (84.4%), hot flashes (80.6%), night sweats (78.9%), mood changes, and sleeping problems (both 75.0%), joint pain (73.9%), osteoporosis (71.1%), poor memory and concentration (67.8%), anxiety (65.0%), palpitations (36.7%), vaginal dryness (30.0%), increased facial hair (27.8%), and recurrent UTI (22.2%). Frequent symptoms are headache, sleep disturbance, hot flashes, lack of concentration, and night sweats. A Norwegian study highlighted high-risk symptoms in premenopausal women, including vaginal dryness, heart palpitations, depression, anxiety, and irritability [30].

The study has some limitations that are important to understand. First, the study conducted was based in a hospital, not at the community level as the study was self-funded and had limited resources and timelines. Second, females were conveniently taken into the study and an equal chance of not given to each participant to take part in this study as the duration of the study was very short and probability sampling was not possible to be done in a short period to complete the sample size.

CONCLUSION

In this study, the early menopausal women having factors like family history of early menopause, age at menarche, irregular menstrual cycle, high parity status, gestational age, smoking, body mass index, employment status, husband's income, educational status, and history of birth spacing were more frequently found in early menopause. Frequent symptoms that are very common included headache, joint pain, hot flashes, night sweats, vaginal dryness, urinary tract infections, and anxiety. Early menopause can affect the quality of life, often due to a lack of awareness of medical intervention.

ETHICS APPROVAL

Prior to the start of study, the research proposal was presented to the Institutional Review Committee (IRC: PUMHS/SBA/CHS 434) and approval was taken from the IRC. The Helsinki Statement, National/International and institutional ethical standards were followed in every aspect of the study as human subjects were involved.

CONSENT FOR PUBLICATION

Written consent was taken from all the females who were participating in this study.

AVAILABILITY OF DATA

The data can be shared after obtaining consent from all the concerned authors depending on the need for data.

FUNDING

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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AUTHORS' CONTRIBUTION

IM developed the main concept, questionnaire, and data analysis. HKT writing the manuscript, its revisions, and correspondence. RL and NK Initial writing and conceptualizing. KJ and DT data collection and corrections. K did data collection.

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