

# Severity and Frequency of Menopausal Symptoms in Middle Aged Women, Rasht, Iran

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## ABSTRACT

**Introduction:** Menopause is a natural event in women's life. Some studies have shown that, these symptoms can lead to low quality of life.

**Aim:** To identify the severity and frequency of menopausal symptoms in different stages of menopause, in a group of middle aged women.

**Materials and Methods:** This cross-sectional study was conducted on 646 women aged 45-60 years in Rasht, Iran, who were included in the study by convenience sampling method. Menopause Rating Scale (MRS) was used to measure the severity of menopausal symptoms. Descriptive and analytical statistics by SPSS software version 19.0 was used for analysis.

**Results:** Mean age of women was  $50.7 \pm 4.65$  years. About half

of the participants (49.2%) were postmenopausal. The remaining 18.1% (n=117) and 32.7% (n=211) were perimenopausal and premenopausal, respectively. The score of physical domain for menopause symptoms was higher in postmenopausal women. Joint and muscle problems were the most frequent symptoms in post and perimenopausal women. Also, total score for menopausal symptoms was more in postmenopausal group than other groups ( $p < 0.001$ ). Severe symptoms were seen only in three postmenopausal women and 55.2% of them had mild to moderate symptoms.

**Conclusion:** The menopause related symptoms differed based on the stage of menopause. Such studies are useful for creating awareness among women so that they can identify common menopausal symptoms and consequently may improve their quality of life.

**Keywords:** Menopause, Menopause rating scale, Premenopause, Perimenopause, Postmenopause

## INTRODUCTION

Menopause is a physiological event in women's life and is considered as a period of decreased ovarian gonadotropins, oestrogen and progesterone [1-3]. Most health professionals believe that complications of this physiological process are due to lack of sex hormones. The effects and complications include hot flushes, irregular menstrual cycle, psychological changes, sexual dysfunction, physical symptoms, osteoporosis, increased risk of cardiovascular disease, colon cancer, etc., [2-5]. More than 80% of women above 45 years of age, experience these symptoms in the transition period leading to menopause. The common symptoms can be grouped as somatic symptoms, psychological symptoms, urogenital symptoms and sexual dysfunction [6-11].

Several studies [4,6,11-16] have been conducted to determine the symptoms and signs associated with menopause, their impact on Quality Of Life (QOL) and effective interventions to maintain or improve the quality of life. Frequency and intensity of symptoms vary in different cultures and also according to stage of menopause situation. For instance, in some Asian studies, vasomotor and psychological symptoms were less common. Also, perimenopausal and postmenopausal women suffered from symptoms more frequently than premenopausal women. Such symptoms can be severe enough to influence their daily activities [11,14,17].

It is also important to note that long term effects of oestrogen deficiency on heart and bones causes adverse cardiovascular changes and osteoporosis [12]. Most of the studies indicate a negative impact of menopause on quality of life and women with menopausal symptoms have lower quality of life scores based on different instruments [5,7,8,10,16,18-20] and few studies did not

confirm such a relationship [15,21].

The mean age of menopause is about 51 years worldwide [1], but after reviewing studies in different regions of Iran, it was observed that the average age of menopause is lower [4,22,23] than most of the developed countries [24,25]. On the other hand, with increase in life expectancy, it is estimated that almost one third of the women's life is in menopausal period and hormone deficiency, that may impair their quality of life. This indicates the importance of menopause period as premenopausal period. Women near the menopausal period and after it are among the groups that have been neglected in most societies and little research has been done on their quality of life [1,4,5,20,26]. Most of the research on menopausal women has been conducted in the developed countries while little information is available from developing countries [13].

Hence, the study of consequences of menopause and problems related to it can determine educational, treatment, counseling and care needs and also helps in the formulation, implementation and evaluation of care programs, health policies and optimal investment. Taking advantage of the results of such community level studies, can be effective in promoting women's health, helping them to pass midlife by maintaining physical and mental health and be a productive elder for society in subsequent years [5].

This study aimed at determining severity of menopausal symptoms in middle aged women of Rasht, Iran.

## MATERIALS AND METHODS

This cross-sectional study was a community based study conducted from March 2013 to November 2014. The research sample included 646 women, aging 45-60 years, at different menopausal stage.

Total sample included: 211 premenopausal, 117 perimenopausal and 318 postmenopausal women.

The sample size of 327 was calculated based on literature review [5] through formula mentioned below, with  $p=0.05$ , precision of 5% and 95% Confidence Interval (CI):

$$n = \frac{z^2 \cdot P(1-P)}{d^2}$$

By considering design effect, the final sample size was increased to about 650 participants.

Exclusion criteria included Hormone Replacement Therapy (HRT), underlying chronic disease, artificial menopause and hysterectomy. After obtaining permission from Research Committee of Islamic Azad University of Rasht and Health Deputy of Guilan University of Medical Science (GUMS), the researchers and five trained assistants completed the research questionnaires. All of assistants were midwifery and nursing students. One of the research team members trained them how to interview the participants. Research assistants were trained about method of interviewing and importance of participant's privacy. All the interviews were held in the local language. Written informed consent was obtained from the participants after explaining the study procedure completely.

### Sampling

The research sample included 646 women aging 45-60 years at different menopausal stages. Cluster sampling method was considered at the level of Rasht city (The center of Guilan Province in the North of Iran) by home to home visit, but since the sampling license could not be obtained from Rasht Government, the study location was changed to health centers and convenience sampling was used. Therefore, 15 health- centers can be randomly selected for this study. First of all, a list of all state health centers in the Rasht city was prepared, and then a number was devoted to each center. In the last stage, 15 centers were drawn from the list by chance. Study samples were chosen among patients or their relatives, healthy volunteers and qualified individuals nominated by volunteers from religious meetings, women's gyms and parks. On the basis of menopausal history, the selected samples participating in the study were divided into three groups of premenopause with normal menstruation, perimenopause with the last period of more than three months and less than 12 months, and postmenopause with the absence of menstruation for at least one full year.

### Measurement Tools

Data collection instruments included a demography recording sheet and Menopause Rating Scale (MRS) to assess the intensity of menopausal symptoms in the form of presence or absence of menopausal symptoms at the time of study and during previous four weeks. MRS is a standard international scale that is widely used in different settings [14,17,18,27-33]. In the present study, Persian version of MRS which was translated and validated previously was used [34,35]. The permission was taken from the researcher who had developed and translated this questionnaire. Data were collected by face to face interview.

**Demographics questionnaire:** Demographic data including age, education, occupation, marital status, menstruation age, menopause age (if happened) and obstetrics history.

**Menopause Rating Scale (MRS):** MRS has three categories i.e., physical, psychological, uro-genital. Subcategories include: 1) physical (hot flushes/sweating, heart discomfort, sleeping problem, muscle and joint problem); 2) psychological (depressive mood, irritabilities, anxiety, tiredness); 3) uro-genital (sexual problem, bladder problem and dryness of vagina). Internal consistency of the questions of MRS was 0.83 based on Cronbach's alpha indicating the high reliability of the scale. Respondents had five choices: No

symptoms, mild to moderate, marked and severe. The total score of the MRS is between 0 (asymptomatic) and 44 (highest degree of complaints). Based on literature reviews, total score  $\leq 11$ , 12-35 and  $\geq 36$  are considered as asymptomatic, mild to moderate and severe to very severe, respectively. Then the 11 symptoms were categorized in three subgroups as physical, psychological and urogenital symptoms [18,27].

### STATISTICAL ANALYSIS

Statistical analysis was carried out using IBM® SPSS® Statistics version 19.0 (IBM® Corp., Armonk, NY, USA). Quantitative data were computed as means and Standard Deviations (SD). Kolmogorov-Smirnov test and standard deviation methods were used to determine the normal distribution of data. The result of Kolmogorov Smirnov test did not show normality of distribution so Kruskal Wallis and Mann Whitney U-test were used to compare differences between three study groups and within two groups respectively. A p-value less than 0.05 was considered significant throughout the study.

### RESULTS

The research samples included 646 women aging 45-60 years with an average age of  $50.7 \pm 4.65$  years and had on an average three children. Of the total, 211 cases (32.7%) were in the premenopause group, 117 patients (18.1%) were in the perimenopausal group, and 318 (49.2%) were in the postmenopause group. An 89% of individuals were married, 31.6% had high school diploma and mostly were housewives (72.2%). The mean and standard deviation for menarche and menopause was  $12.81 \pm 1.46$  and  $48.85 \pm 3.6$  years, respectively [Table/Fig-1].

MRS was used to examine menopausal symptoms in the study samples. This scale consisted of 11 symptoms in three domains of physical, psychological and uro-genital. The menopausal women had higher scores in all the fields including physical, psychological, and uro-genital and there was a significant difference between the three study groups. The severity of symptoms in postmenopause group was in the range of mild to moderate in 55.2% of samples and only three members of this group had severe symptoms [Table/Fig-2]. Based on separate symptoms as indicated in [Table/Fig-3], symptoms in all aspects had a higher frequency from premenopause to postmenopause. Only anxiety was slightly higher in premenopause group compared to perimenopause group. Scores of each domain and was highest among postmenopausal group when compared with other two groups and differences were statistically significant ( $p < 0.001$ ), as it is observed in [Table/Fig-4].

Characteristics	Number (%)	Characteristics	Number (%)
<b>Age (years)</b>	<b>Mean± SD 50.7± 4.6</b>	<b>Career</b>	
45-49	301(46.6)	Housewife	466(72.2)
50-54	201(31.1)	Employee	51(7.9)
55-60	144(22.3)	Teacher/Trainer	30(4.6)
<b>Menopausal status</b>		Medical Staff	27(4.2)
Premenopause	211(32.7)	Retired	41(6.3)
Perimenopause	117(18.1)	Others	31(4.8)
Postmenopause	318(49.2)	<b>Marital status</b>	
<b>Education</b>		Married	575(89)
Lower than high school diploma	321(49.7)	Widow	42(6.5)
High school diploma	204(31.6)	Single	17(2.6)
Academic education	121(18.7)	Separated	12(1.9)

[Table/Fig-1]: Characteristics of participants.

Factor (MRS Severity level)	Menopausal status		
	Premenopause (n=208)	Perimenopause (n=115)	Postmenopause (n=308)
	n(%)	n(%)	n(%)
No symptom (≤11)	152(73.1)	63(54.8)	135(43.8)
Mild to moderate (12-35)	56(26.9)	52(45.2)	170(55.2)
Severe to very severe (≥36)	0(0)	0(0)	3(1)

**[Table/Fig-2]:** Severity of menopausal symptoms according to Menopause Rating Scale (MRS).  
(Total 631 patients, data of 15 patients was missing)

among different countries and even in different areas of a country. For example in Abedzadeh KM's study, night sweating was more common but the most severe complaint was about pain in joints and muscles [16]. These differences may be the result of physical and mental stress, available support and compliance mechanisms, Socio-economic factors, cultural issues and even instrumental and methodological issues [38,39].

Considering the severity of symptoms, 43.8% of the postmenopause samples in this study were asymptomatic and only 1% of samples had severe or very severe symptoms while none in the other two groups were complaining of severe symptoms. The results of this study are consistent with some studies in Asia. Nevertheless differences were found with other studies. For instance, in the

Factor (Menopausal symptoms)		Menopausal situation					
		Premenopause		Perimenopause		Postmenopause	
		Yes	No	Yes	No	Yes	No
		n (%)	n (%)	n (%)	n(%)	n (%)	n (%)
Physical symptoms	Hot flushes, sweating	68(32.4)	142(67.2)	74(63.2)	43(36.8)	242(76.1)	76(23.9)
	Heart discomfort	54(25.3)	156(74.3)	52(44.4)	65(55.6)	162(50.9)	156(49.1)
	Sleep problem	85(40.5)	125(59.5)	65(55.6)	52(44.6)	209(65.7)	109(34.3)
	Muscle and joint problem	128(61)	82(39)	82(70.1)	35(29.5)	263(82.7)	55(17.3)
Psychological symptoms	Depressive mood	65(31)	145(69)	46(39.7)	70(60.3)	171(53.8)	147(46.2)
	Irritability	88(41.9)	122(58.1)	51(43.6)	66(56.4)	174(54.9)	143(45.1)
	Anxiety	126(60)	84(40)	66(56.4)	51(43.6)	221(69.5)	97(30.5)
	Tiredness	129(61.4)	81(38.6)	78(66.7)	39(33.3)	246(77.4)	72(22.6)
Uro-genital symptoms	Sexual problem	45(21.6)	163(78.4)	42(35.9)	75(64.1)	127(41.1)	182(58.9)
	Bladder problem	54(25.7)	156(74.3)	43(36.8)	74(63.2)	128(40.3)	190(59.7)
	Dryness of vagina	43(20.6)	166(79.4)	43(37.1)	73(62.9)	140(44.1)	177(55.8)

**[Table/Fig-3]:** Frequency of menopausal symptoms in different domains of Menopause Rating Scale (MRS).

The number of individuals in premenopause, perimenopause and postmenopause are 211,117 and 318 respectively but we had some missing data in each category and subcategory, so the differences are related to this missing data

Domain	Menopause situation			p-value			
	Premenopause <sup>a</sup>	Perimenopause <sup>b</sup>	Postmenopause <sup>c</sup>	p1,2,3*	p1,2**	p1,3**	p2,3**
	Mean(SD)	Mean(SD)	Mean(SD)				
Physical	3.22(2.96)	4.79(3.11)	6.30(3.45)	<0.001	<0.001	<0.001	<0.001
Psychological	3.53(3.79)	3.57(4.29)	3.94(5.36)	<0.001	0.178	<0.001	0.013
Uro-Genital	2.05(1.27)	2.43(2.01)	2.96(2.70)	<0.001	0.03	<0.001	0.282
Total	6.87(8.28)	7.17(11.09)	8.52(14.35)	<0.001	<0.001	<0.001	0.001

**[Table/Fig-4]:** Mean scores of different Menopause Rating Scale (MRS) domains.

<sup>a</sup>premenopause=1, <sup>b</sup>perimenopause=2, <sup>c</sup>postmenopause=3

\*Kruskal-wallis test, \*\*Mann Whitney U-test

## DISCUSSION

Menopause is an important issue in women's life. Symptoms that they experience may influence their quality of life. The aim of this study was to identify the frequency and severity of menopausal symptoms in middle aged women.

Based on the present study, symptoms in all fields of physical, psychological and urogenital had a higher frequency in postmenopause than perimenopause or premenopause women.

The results of this study were similar to other studies in this field, particularly in Asia, while other studies showed differences in the frequency of some symptoms [7,14,36,37]. Some studies reported [6,9,12-14,27] higher levels of physical and psychological symptoms in perimenopausal women and observed more urogenital symptoms in postmenopausal women. However, in present study, the frequency of symptoms in postmenopausal women was more than perimenopausal women.

The higher prevalence of joint and muscle disorders than flushing in this study may be explained by the characteristics of regional climate. However, the prevalence of reported symptoms varies

study of Satoh T and Ohashi K [9], 75% of premenopause group had mild symptoms while more than half of the people in the two groups of perimenopause and postmenopause complained of mild, moderate and severe symptoms. Severe symptoms were seen in only two perimenopause women and one postmenopause woman. In another study, severity of symptoms was also segregated in each area, but unlike the present study, the severity of symptoms between the groups before, during, and after menopause was not compared [6].

The reason for the differences in the type and severity of menopausal status can be justified by the effect of racial differences on the prevalence and severity of menopausal symptoms, the average age for menopause and duration from menopause which results in differences in sample characteristics of the research. In addition, in different areas of the country, women experience menopause symptoms caused by oestrogen deficiency in a different way [14].

The differences in the findings of those studies with our study may be due to a higher incidence of joint and muscle disorders in our

research geographic area which leads to higher physical domain scores in the MRS questionnaire [15,18,40].

The difference in the results of different studies are due to the impact of socio-cultural features, social-underlying features of race, genetics, people's perception of menopause, differences in sample size, study design, and instruments [5,6,41].

## LIMITATION

Access to samples and completing the sample size were the limitations of this study. Therefore, it is suggested to design a study with sufficient sample size of perimenopause and early postmenopause women to take a closer look at the impact of duration from menopause on severity of symptoms. In contrast, the strength of this study was its community-based design and using valid questionnaires to measure menopausal symptoms. Another limitation was individuals were asked to provide some information related to their memory such as symptoms they experienced in previous weeks, menopause age, regularity of menses, Last Menstrual Period (LMP), so recall biases were inevitable. Incorrect data regarding menstrual cycle may lead to categorize samples improperly. Also, because of regional humidity and warmth in summers, distinguishing menopausal vasomotor symptoms from weather related symptoms may be difficult for some study samples and controlling this confounding factor was out of researchers' control.

## CONCLUSION

Finally, the result of this study showed, many women face some disturbing symptoms in years leading to menopause and postmenopause women experience more severe symptoms than pre and perimenopause women. Women's awareness of menopause symptoms can be increased by educating them on how to deal with the symptoms.

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