

## The Natural Menopause Age and Associated Factors at Women Menopause in Kerman, Iran<sup>1</sup>

Afsar Foroud,

Midwifery faculty, Kerman Branch, Islamic Azad University, Kerman, Iran

\*Corresponding author Email: [afsarforoud@yahoo.co](mailto:afsarforoud@yahoo.co)

Simin Mehdipour,

Nursing faculty, Kerman branch, Azad Islamic University, Kerman, Iran

Fatemeh Nikvarz,

Midwifery faculty, Kerman Branch, Islamic Azad University, Kerman, Iran

Khashayar Haj jafari,

Medical student in Afzalipor faculty, Kerman, Iran

Tahereh Shafieian

PhD. Candidate in Gerontology, University of Medical Sciences, Mashhad, Iran

**ABSTRACT**— Considering the physical, emotional and psychological complications of early or delayed menopause on women's life, it is necessary to determine associated factors of menopause age. On the other hand, family health primarily depends on mothers' health. Therefore, the present study aimed to determine age of menopause and factors related to age of natural menopause in Kerman, Iran.

**Materials & methods:** This is a cross-sectional study, 300 menopausal women in Kerman that had inclusion criteria, were selected. The tool for data collection was a questionnaire being filled out through interviewing the subjects and the weight and height of the subjects were measured after interviewing. Data were analyzed with T- students, ANOVA, and LSD and Pearson correlation coefficient.

**Findings:** The mean menopause age in women was  $35/3 \pm 56/48$  years, Statistically significant relationship was observed between menopause age and educational level of woman ( $p = 0/04$ ) and her husband ( $p = 0/0001$ ), age at first pregnancy ( $p = 0/003$ ), family history of early menopause ( $p = 0/001$ ).

**Conclusion:** Some of reproductive and social factors can affect in natural menopause age. Since menopause in women is related with some diseases, induced complications and mortality, this phenomenon should be noticed as an epidemiological issue in societies.

**KEYWORDS:** Natural menopause age, Factors related.

### Introduction

Menopause is defined as cessation of menstruation without any specific reason for a period of one year. Menopause is a very important and effective event in women's life. The obvious feature of menopause is permanent stoppage of menstruation that occurs after stopping in functioning of ovaries, and its clinical effects grow over the next years and decades (1). In different societies, the age of menopause is different. The Studies in Iran have stated various mean age for example in Yazd with mean age of 47.3 years (2), Tabriz, 47.38 years (3), Mazandaran, 47.93 (4) and Birjand, 47.19 (5) years. Studies done in the other countries have also stated various mean ages including the studies of Ortiz et al in Brazil with mean age of 51.3 (6), and Lamiadhia et al in Iraq with 47.96 (7) years. As said before the age of start of menopause in women is different. Despite the recent advances in understanding the hormone changes along menopause and remedies available for curing its symptoms, there are no considerable data on the effective factors on the time of menopause. Based on some past studies, economic-social and environmental factors, reproduction factors and life style like smoking, physical activities, level of education, job, income and BMI can be effective on the age of start of menopause. (8). This is while other studies have had a dual look at these connections. The age of start of menopause by inducing hormone changes affects the health and life quality of women. (9). Since on one hand the emergence of some chronic diseases like bone osteoporosis, heart and vascular diseases and some cancers are attributed to menopause (9&10) and on the other hand early menopause can be accompanied by increase of risk of heart and vascular diseases and bone osteoporosis and by increase of this age the possibility of breast and endometrial cancer increases. (11). Thus, the age of menopause has importance regarding the epidemiology of these diseases. Knowing this age and the factors associated can form the basis for planning and preventive hygienic measures. There are various factors that control this natural event but determining the main factor (except the reproduction hormones) is very difficult in emergence of this main event in women's lives. (12). Regarding the physical and mental damages of early and late menopause it is necessary that the effective factors on this time be recognized and data and required services before and after menopause be given to women since the health of family is primarily

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depended on health of mothers. Regarding the importance of menopause age in women's health, for measuring the mean age of natural menopause and examining the effective factors on it we did an analysis on a number of women in Kerman.

### **Materials and methods**

This cross section study based on population was done in 2014 on 300 women in Kerman who were selected by class random sampling each hygienic center of Kerman was considered as a class and based on the number of families covered by each center they were allocated ratios and then the samples were selected randomly among the classes and by referring of the researcher to the house doors the inventories were filled and the weight and height of samples were measured at same place (weight by digital balance with 100g precision and height by height-measure with precision without shoes). The criteria for entering the study were: 1 year residence in Kerman and natural occurrence of menopause, ages less than 60, lack of consumption of hormone treatment during the last 6 months and lack of mental diseases or any known systematic illness. The volume of sample based on the formula for mean estimation was found as 300 persons .Finally, 289 inventories were filled. The content validity was confirmed by the views of ten gynecologists and the reliability was found by a pilot study and alpha Cronbach ratio of 0.75. The data after collection were analyzed by SPSS software and descriptive methods of analysis like T-test, one-way variance analysis, LSD test, simple linear regression and Pearson correlational coefficient at 0.05 level of error.

### **Results**

The present study was done on 289 menopause women who were selected randomly. Regarding the findings, the least age was 31 years and the highest was 59 years. Less than 8% of women were less than 48 and 26.8% were above 58 years and 65.2% were between 49 and 57. The mean age of the menopause of the women was 48.56 and middle point of 49. Age of menopause in various ages and its comparison in different age groups shows that there is no significant difference between the current groups. Tables 1 and 2 show the relation of various factors with age of menopause. Examining this tables shows that there is a significant relation between the woman ( $p=0.04$ ) and husband's education ( $p=0.0001$ ) and the age of menopause. In addition, there is a significant relation between the age of first pregnancy ( $p= 0/003$ ) and family history of premature menopause ( $p = 0 / 001$ ) with the age of start of menopause.

### **Discussion and conclusion**

Regarding the findings of the study the least age of menopause in women of Kerman was 31 and the highest was 59 years. That means the mean age of women was 48.56 $\pm$ 3.35, which in comparison with the mean age of menopause in other cities of the country, it showed to be the same. In studies done in various cities and provinces the mean age of menopause is reported as following: Zahedan 47.3 $\pm$ 6.3 (13), Semnan province 52.40 $\pm$ 5.02 (14), Tehran 47.13 $\pm$ 3.9 (15), Shiraz 48.3 $\pm$ 5.3 (16), Yazd 47.39 $\pm$ 5.08 (2), Mazandaran 47.93 $\pm$ 4.37 (4), Ahvaz 47.97 $\pm$ 4.17 (17), Mashad 48.2 $\pm$ 3.7 (1) and Birjand 47.19 $\pm$ 5.31 years (5). In the study of other communities done in Iran, the mean age of menopause was found 49.2 $\pm$ 4.45 years in rural areas and 49.9 $\pm$ 3.45 years in urban areas. (18). In developed countries the mean age of menopause is 51 while in countries like Philippine, India, Pakistan, Thailand and Iran the mean age is reported as between 45 and 50. (19). the geographical, economic and cultural differences might be effective on the results of studies. Kaur et al also in examining the studies found that the age of menopause in developing countries is less than the developed countries. (20). The results of this study showed that economic conditions, husband's job , use of drugs, physical activity, the age of marriage and the age of first menstruation, use of contraceptives, diet records and BMI have no significant relation with the age of menopause. In a study done in Saudi Arabia also, there was no significant relation between the age of menopause and first menstruation, income of family, job and use of contraceptives. (21). Also in the study of Delavar Haj ahmadi there was no significant relation between the factors of woman's job, economic condition, use of drugs, first menstruation, number of pregnancies, use of contraceptives and BMI. (22). in the study of. Murugan the variables of income and economic-social conditions and use of contraceptives showed no significant relation with the age of menopause. (12). One of the results of this study was the effective relation of the woman's education and age of menopause, and in the study of Kaover and Talva also urban women had a higher menopause age than rural women, which shows education as one of the effective factors. (20). While Geukes et al regarded the factor of education as insignificant. (23). among the studied factors, the education of husband and woman has been one of the effective factors on the age of menopause. In demographic literature, education is treated as one of the decisive factors of fertility behaviour (24).In the study of Gold et al lower educational associated with earlier natural menopause age (25). In the current study, stress was one of the other factors effective on menopause age. Women with higher stress had a less menopause age. In the study of Ozedmir also this fact is mentioned. He states that joy and satisfaction can have a positive effect on the age of menopause. (26). In this study the age of first pregnancy was one of the other effective factors which was parallel with the results of Nahidi et al (15) while Ozedmir did not find tis relation. (26). Early menopause in family can also have a direct effect on menopause age. In Morgan's study also, there was a significant relation between menopause age and family history of early menopause. (12). this same result was also confirmed by Ozedmir (26). De Bruin et al also reported that women with a family record of early menopause were more exposed to menopause at early ages. Genetic factors can play to estimated menopause age (27).

**Table 1:** mean and standard deviation of the natural menopause age of women residing in Kerman based on demographic features

p-value	Mean and standard deviation	(%)percentage	(N)	Variables
0/04	49/85±3/5	26	75	Education level of woman
	48/52±3/5	51/3	148	Illiterate or elementary
	47/02±3/1	22/6	65	Guidance up to high school Diploma and higher
0/0001	49/01±3/5	25/3	73	Education level of husband
	48/15±3/4	50	144	Illiterate or elementary
	47/66±3/1	19/4	56	Guidance up to high school Diploma and higher
0/356	48/38±3/4	80/7	230	Housing condition
	48/17±2/4	19/3	55	Owner non-owner
0/284	48/64±3/4	49/6	139	Woman's job
	48/17±2/8	50/4	141	Housewife
				Working
0/08	48/89±3/2	26/9	65	husband's job
	48/86±2/7	73/1		Unemployed
			177	Working
0/208	48/37±3/35	5/3	15	Marital status
	48/64±3/04	79/9	227	Single
	49/38±3/4	14/8	42	Married
				Widower
0/705	48/8±3/06	12/3	35	Use of drugs
	48/57±3/39	87/7	249	Yes No
0/146	47/38±3/6	47/9	136	Physical activity
	48/71±3/5	52/1	148	Yes
				No
0/062	49/17±2/5	33/1	93	BMI
	48/9±3/5	44/1	124	Less than 25
	48/19±3/7	22/7	64	25-30
				More than 30

**Table 2:** mean (standard deviation) of the natural menopause age of women residing in Kerman based on some reproductive features

p-value	Mean and standard deviation	Percentage	(n) number	Variables
0/003	47/4±3/7	54	151	Age of first pregnancy
	45/7±4/3	36	101	Below 20
	48/3±4	9/7	28	20-24 >25
0/0896	48/1±4/5	28/9	86	Age of first menstruation
	47/7±4/3	63/08	188	9-12
	48/1±4/5	8/05	24	13-15 ≥16
0/961	48/57±3/59	61/8	178	Period regularity
	48/6±3/063	27/8	80	Always regular
	48/56±3/35	10/4	30	Sometimes irregular Always irregular
0/165	48/71±3/11	42/6	121	OCP consumption
	48/55±3/45	57/4	163	Yes No
0/643	48/47±3/2	22/3	59	IUD
	48/70±3/3	77/7	206	consumption Yes No
0/001	46/28±4/26	12/9	36	early menopause in family
	49/01±2/95	87/1	244	Yes No

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