Original Article

Quality of Life in Postmenopausal Women in Iran: A Population-based Study

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Objectives: Menopause can have psychological, physical, and vasomotor symptoms along with sexual dysfunction and these symptoms can affect the quality of life (QOL). The purpose of this research was to determine and association the effective factors on QOL among postmenopausal Iranian women.

Methods: This cross-sectional study was conducted in 2015 on 300 postmenopausal women in Hamadan, Iran. We used the Menopause-Specific QOL questionnaire (MENQOL) for measuring QOL in postmenopausal women. SPSS version 16 was used for data analysis.

Results: The mean scores of QOL for vasomotor, psychosocial, physical, and sexual domains were 11.65 ± 5.93, 19.36 ± 1.20, 39.12 ± 1.95 and 11.02 ± 5.66, respectively. Higher scores had worse QOL. Using MENQOL scores, our study showed significant differences in QOL based on age, education level, financial status, number of children, employment, and body mass index (BMI).

Conclusion: Menopause causes a decrease in QOL, which is dependent to age, work, BMI, financial status and number of children variables. Therefore, it is necessary to develop effective intervention programs to improve QOL in postmenopausal women. **(J Menopausal Med 2016;22:31-38)**

Key Words: Cross-sectional studies · Iran · Menopause · Quality of life

Introduction

Natural menopause is the permanent cessation of menstruation which is determined 12 months after the last menstrual period.[1] The number of postmenopausal women has been increasing in recent years due to the increase of life expectancy.[2,3] Nowadays, most women spend more than one-third of their life beyond their menopause.[4] The etiology of menopause is not well-known. However, it seems that it is related to ovarian dysfunction and hormonal changes.[5]

Nearly, 50% to 80% of women complain of menopausal symptoms such as hot flashing, sweating, sleep disturbance, tiredness, and depression.[6]

Menopause can have psychological, physical, and vasomotor symptoms along with sexual dysfunction.[5,7,8] These symptoms can affect the quality of life (QOL). According to the World Health Organization (WHO), QOL is defined as "an individual's perception of their position in the context of the culture and value systems in which they live and in relation to their goals".[9,10]

A review study in 2015 reported that different socio-demographic factors such as body mass index (BMI), marital dimension, economic dimension, educational level, working status, duration of menopause, parity, and race affected the

QOL in menopausal women.[11]

Iranian culture give special value and importance on the elderly and older women have a significant place in the culture because of their extensive experience as mothers and wives. In addition, some of the values women hold in Iran might be at risk due to mood fluctuations and other challenges might occur related to QOL.[12] Only a few studies showed the association between socio−demographic factors and QOL among postmenopausal women.[13]

Therefore, the purpose of this cross−sectional research was to determinate the effective factors on QOL among postmenopausal Iranian women.

Materials and Methods

This cross sectional study was conducted in 2015. We enrolled eligible postmenopausal women in Hamadan city located in the west of Iran from June 2015 to October 2015. This research was approved in the Ethics Committee of Hamadan University of Medical Sciences.

According to the results of a cross−sectional study conducted by Makvandi et al.[14] in Iran, the mean (standard deviation [SD]) QOL in postmenopausal women was 9.72 (3.27). Based on these results, we arrived at a total sample size of 280 at 95% significance level. Anticipating an 8% rejection due to failure in completing the questionnaire, we increased the sample size to a maximum of 300 women. For this purpose, we prepared a list of all the 20 health centers in Hamadan city and categorized them into four different areas based on socio−demographic status. Eligible women were selected randomly based on quotas set for each health center and their names and numbers were listed. If a woman was absent for the interview, she was given a second chance. In case a woman was not present, we selected another woman from the center.

Inclusion criteria consisted of women (a) from whose last menstrual period at least 1 year had passed (b) had intact uterus and ovaries (c) had no history of physical and mental disorders (d) and had not used hormone replacement therapy. Exclusion criteria consisted of women who participated in classes of promoting QOL.

We used the Menopause−Specific QOL (MENQOL)

questionnaire for measuring the QOL in postmenopausal women. This questionnaire consists of 29 items in vasomotor (3 items), psychosocial (7 items), physical (16 items) and sexual (3 items) domains.[15] The validity and reliability tests for this questionnaire were conducted in Iran.[16] In this study, test−retest (intraclass correlation coefficients) was used for the MENQOL questionnaire reliability. The scores of MENQOL questionnaire were 0.93, 0.88, 0.87, and 0.92 for the physical, psychological, sexual and vasomotor domains, respectively.

This questionnaire has seven−point Likert scale and ranges from 0 to 7. A "zero" is equivalent to a woman responding "no", showing she has not experienced this symptom in the past month. Score "one" shows that the woman experienced the symptom, but it was not bothersome at all. Scores "two" through "seven" show increasing levels of bother experienced from the symptom and correspond to "1" through "6" check boxes on the MENQOL. Each item was manually calculated into a 0−7 score. Hence, the average for each domain was calculated between 0 and 7. The high scores in MENQOL subscales indicate low QOL.

Moreover, some socio−demographic variables were asked from these women including age, menopause duration, marital status, education, employment status, number of children, income level, weight, and height. BMI is weight in kilograms divided by the square of the height in meters. BMI is divided into underweight (<18.5 kg/m^2), normal weight ($18.5−24.9$ kg/m^2), overweight ($25−29.9$ k/m^2) and obese (≥ 30 kg/m^2).[17]

The postmenopausal women were interviewed by female interviewer and on average, each interview lasted 19 minutes.

SPSS version 16 (SPSS Inc., Chicago, IL, USA) was used for data analysis. The relation of demographic variables with QOL was investigated using analysis of variance (ANOVA), t−test and logistic regression analysis. P values less than 0.05 were considered significant.

Results

Overall, 11 women refused to participate in this study and were replaced by other eligible women. The age range of

women was 45 to 65 years and the mean age was 55.46 (SD = 5.49).

Most of the women (48%) had between 4 to 6 live children. 41.3% of the menopausal women had overweight. The mean BMI in postmenopausal women was 26.48 (SD = 4.48). Table 1 shows the characteristics of the eligible women. The mean (median) scores of QOL for vasomotor, psychosocial, physical and sexual domains were 11.65 ± 5.93 (median: 12), 19.36 ± 1.20 (median: 18), 39.12 ± 1.95 (median: 39) and 11.02 ± 5.66 (median: 12), respectively.

According to the MENQOL questionnaire most mean scores in vasomotor, psychosocial, physical and sexual domains belong to the items of "night sweats" (4.17 ± 2.08), "feeling anxious or nervous" (3.34 ± 2.14), "ache in muscles and joints" (3.41 ± 2.04) and "change in your sexual desire" (3.77 ± 2.11), respectively.

The mean score of QOL in four domains have been presented in Table 2. Sixty to 65 years old women had significantly lower QOL scores (better QOL) in psychosocial, physical and sexual domains compared with the other age group and 45 to 49 years old women had significantly higher scores in all the domains of QOL.

Women with university degrees had the lowest scores in the physical domain and the highest scores of sexual, physical and vasomotor domains belonged to women with guidance school degrees.

Women with fewer than four live children had lower QOL scores in psychosocial domain ($P = 0.017$). Compared to married women, divorced/widowed women did not affect all the domains of QOL.

Financial status was associated with physical domain and women with higher incomes had lower scores in QOL compared with other groups.

Women with higher BMI had significantly higher scores in all the QOL domains. Menopausal duration was not associated with all the domains of the QOL. In vasomotor domain employed women had lower scores than housewives ($P = 0.012$).

According to the results of the logistic regression analysis after adjusted variables, obesity increased scores of physical, psychosocial and vasomotor above the median. Employment and incoming decreased the risk of vasomotor and physical scores above the median, respectively (Table 3).

Table 1. Characteristics of the participating women

Variables	Number	Percent
Age group (year)		
45-49	47	15.7
50-54	85	28.3
55-59	81	27.0
60-65	87	29.0
Number of live children		
0-3	117	39.0
4 and more	183	61.0
Financial status		
Unsatisfactory	66	22.4
Satisfactory	117	39.8
Good	111	37.8
Employment status		
Employed	35	11.7
Housewife	264	88.3
Body mass index (kg/m^2)		
<18.5	5	1.8
18.5-24.9	102	36.3
25-29.9	116	41.3
30 and higher	58	20.6
Education		
Illiterate	56	18.7
Elementary	137	45.8
Guidance	33	11.0
High school	62	20.7
University	11	3.7
Menopausal duration		
<5	173	58.1
5 and higher	125	41.9
Divorced/widowed		
Yes	53	17.7
no	247	82.3

Discussion

In our study, 45 to 49 years old women had significantly

Table 2. Mean scores of quality of life per item in postmenopausal women

Variables	Vasomotor	Psychosocial	Physical	Sexual
Age group (year)				
45-49	13.14 ± 5.12	21.85 ± 12.21	43.06 ± 21.60	11.58 ± 5.35
50-54	12.28 ± 5.71	19.05 ± 12.44	39.44 ± 20.52	10.89 ± 5.77
55-59	10.98 ± 6.25	17.04 ± 11.23	37.14 ± 19.47	10.47 ± 5.65
60-65	10.85 ± 6.11	20.45 ± 12.10	38.50 ± 17.40	11.30 ± 5.81
P value	0.041	0.001	< 0.001	0.016
Number of live children				
0-3	11.10 ± 5.71	17.28 ± 10.85	35.96 ± 17.89	10.97 ± 5.33
4 and higher	12.00 ± 6.05	20.68 ± 12.60	41.09 ± 21.85	11.05 ± 5.90
P value	0.199	0.017	0.419	0.908
Financial status				
Unsatisfactory	12.19 ± 5.66	22.65 ± 12.89	44.53 ± 20.66	10.79 ± 6.12
Satisfactory	11.70 ± 5.86	19.32 ± 11.72	40.67 ± 17.89	11.50 ± 5.43
Good	11.43 ± 6.29	18.15 ± 11.52	35.18 ± 19.86	10.69 ± 5.79
P value	0.714	0.051	0.006	0.576
Employment status				
Employed	9.31 ± 6.37	19.02 ± 10.45	37.42 ± 21.81	9.66 ± 5.39
Housewife	11.97 ± 5.82	19.47 ± 12.22	39.38 ± 19.29	11.19 ± 5.70
P value	0.012	0.836	0.579	0.187
Body mass index (kg/m^2)				
<18.5	10.40 ± 3.75	21.40 ± 11.41	31.20 ± 12.85	15.25 ± 2.50
18.5-24.9	10.66 ± 6.38	15.59 ± 12.20	34.12 ± 19.06	9.75 ± 5.54
25-29.9	11.60 ± 5.77	20.95 ± 11.25	38.68 ± 19.05	11.44 ± 6.02
30 and higher	13.39 ± 4.90	22.05 ± 10.94	47.86 ± 19.95	12.48 ± 4.57
P value	0.041	0.001	< 0.001	0.016
Education				
Illiterate	11.10 ± 5.58	19.78 ± 13.01	40.76 ± 20.28	10.51 ± 5.98
Primary	12.45 ± 6.32	21.05 ± 12.05	40.21 ± 18.93	11.55 ± 5.52
Secondary	12.48 ± 5.47	20.66 ± 12.25	44.15 ± 17.92	12.77 ± 5.18
High school	9.80 ± 5.25	14.69 ± 10.46	33.87 ± 19.74	9.61 ± 5.83
University	11.09 ± 5.95	15.36 ± 8.60	27.72 ± 16.51	9.18 ± 5.05
P value	0.033	0.006	0.002	0.069
Menopausal duration (year)				
<5	12.10 ± 5.93	20.19 ± 12.30	40.61 ± 20.25	10.82 ± 5.72
5 and higher	12.10 ± 5.93	18.20 ± 11.68	37.04 ± 18.53	11.29 ± 5.55
P value	0.149	0.159	0.121	0.528

Table 2. Continued

Variables	Vasomotor	Psychosocial	Physical	Sexual
Divorced/widowed				
Yes	11.16 ± 5.99	21.71 ± 13.05	41.09 ± 21.85	-
No	11.75 ± 5.92	18.85 ± 11.78	38.69 ± 19.04	-
P value	0.514	0.117	0.419	

higher scores in all the QOL domains. Aging in women decreased the scores of QOL except for 60 to 65 years old women whose scores increased again in psychosocial, physical and sexual domains. Aging in vasomotor domain decreased QOL scores. Fallahzadeh's study[16] shows the lowest scores for 60 to 65 years old women in the vasomotor domain which is in agreement with our study, while Blumel et al.'s study[18] in Chile could not show a significant relation between aging and QOL. Some studies have shown that age is a predictor of reduction in QOL.[19,20]

In our study, women with university degrees had lower scores in all domains but this association was significant in vasomotor, psychological and physical domains. Similar results have been reported in different studies.[21~23] In contrast, Fallahzadeh's study[16] showed that women with university degrees had the highest mean scores in vasomotor domain. These studies show that knowledge and education are the reason for having fewer problems and a better QOL. Having an education makes a positive contribution to women's lives in that they reach a higher level of income.

In this study, employed women had lower scores in QOL in vasomotor domain. This is similar to the study of Blumel et al.[18] Another study[13] reported that working women had lower scores of QOL compared to housewives which was not significant. The employed women seemed that had better social support.

Women with more than three children obtained higher scores of QOL compared to those who had fewer than four children, this difference was significant in psychosocial domain. This is similar to other studies.[13] Fallahzadeh[16] in Iran reported that the number of children had a significant impact on physical domain scores. A study defined that higher number children could increased parental stress and responsibility as well as financial problems.[24]

Women with lower incomes had significantly higher mean scores in physical and psychosocial domains. This is similar to Fallahzadeh's study.[16]

Daley et al.[25] reported that obese women had significantly higher vasomotor and somatic symptoms than women of normal weight. A review study reported that obesity was associated with a poor health−related QOL in postmenopausal women.[26] In our study, a high BMI predictor higher scores in vasomotor, psychosocial and physical domains of QOL. Obesity is a health problem that can decrease QOL in postmenopausal women.[22]

Based on the present study, duration of menopause did not have any impact on QOL, and this finding has been confirmed by another study.[13] In contrast, Caylan et al.[27] reported that duration of menopause was associated with higher scores in psychosocial, physical and sexual domains in QOL. It seems that low QOL more than four years after menopausal duration may be due to various factors such as race, age and culture.[28]

This study assessed QOL and related factors in postmenopausal women in Iran. Our study had a few limitations: (a) the women self−reported their weight and height. The literature shows that overweight and obese women are more likely to under−report their weight while those who are underweight are more likely to over−report their weight.[29,30] (b) Our design was a cross−sectional study. We had no information about the women's QOL in their premenopausal period which could affect their postmenopausal QOL. Therefore, more evidence based on large prospective cohort studies is required for a more precise investigation of effective factors on postmenopausal women's QOL.

Table 3. The multivariate predictors of different items of the quality of life of associated with presenting higher score (above the median) in postmenopausal women.

Variables	Vasomotor (score> 12)		Psychosocial (score> 18)		Physical (score >39)		Sexual (score> 12)	
	OR (95% CI)	P value	OR (95% CI)	P value	OR (95% CI)	P value	OR (95% CI)	P value
Age group (year)								
45-49	2.14 (0.92, 4.95)	0.074	0.98 (0.43, 2.21)	0.960	0.92 (0.40, 2.09)	0.844	1.10 (0.47, 2.57)	0.817
50-54	2.18 (1.07, 4.43)	0.030	0.65 (0.32, 1.30)	0.217	0.71 (0.35, 1.43)	0.342	0.98 (0.47, 2.05)	0.964
55-59	0.97 (0.48, 1.94)	0.937	0.38 (0.18, 0.77)	0.008	0.73 (0.36, 1.48)	0.390	0.84 (0.49, 1.80)	0.667
60-65	1.00		1.00		1.00		1.00	
Number of live children								
0-3	1.00		1.00		1.00		1.00	
4 and higher	1.01 (0.55, 1.85)	0.971	1.14 (0.63, 2.06)	0.653	1.63 (0.90, 2.97)	0.106	0.99 (0.53, 1.83)	0.981
Financial status								
Unsatisfactory	0.65 (0.28, 1.50)	0.319	1.10 (0.49, 2.47)	0.802	2.40 (1.06, 5.43)	0.034	1.04 (0.42, 2.56)	0.487
Satisfactory	0.75 (0.40, 1.42)	0.384	0.81 (0.43, 1.52)	0.515	1.75 (0.93, 3.28)	0.080	0.87 (0.46, 1.64)	0.211
Good	1.00		1.00		1.00		1.00	
Employment status								
Employed	1.00		1.00		1.00		1.00	
Housewife	2.90 (1.10, 7.63)	0.031	0.75 (0.29, 1.94)	0.564	0.97 (0.37, 2.50)	0.952	0.87 (0.27, 2.25)	0.646
Body mass index (kg/m^2)								
<25	1.00		1.00		1.00		1.00	
25-29.9	1.23 (0.69, 2.18)	0.479	2.33 (1.31, 4.14)	0.004	2.15 (1.21, 3.81)	0.008	1.23 (0.67, 2.26)	0.487
30 and higher	3.22 (1.50, 6.96)	0.003	4.50 (2.15, 9.44)	<0.001	5.83 (2.74, 12.42)	<0.001	1.62 (0.75, 3.47)	0.211

OR: odds ratio, CI: confidence interval

Conclusion

Menopause causes a decrease in QOL, which is dependent to age, work, BMI, financial status and number of children variables. Therefore, it is necessary to develop effective intervention programs to improve QOL in postmenopausal women.

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Conflict of Interest

No potential conflict of interest relevant to this article was reported. This article is part of a PhD thesis supported by Hamadan University of Medical Sciences.

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