



# Comparison of Quality of Life Between Urban and Rural Menopause Women and its Predictors: A Population Base Study

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## Abstract

**Objectives:** Quality of life is a sense of physical and psychological well-being and a concept affected by various factors such as place of residence. The present study was conducted with the aim to explore quality of life of postmenopausal women in urban and rural areas of Tabriz, Iran.

**Materials and Methods:** The present cross-sectional study was conducted on 544 postmenopausal women from rural and urban areas, selected by cluster sampling method. Data were collected through a 3-part questionnaire consisting of demographic details, quality of life (SF-36) and a research made questionnaire for assessment of physical and psychological menopausal symptom.

**Results:** Following adjustment of basic variables, rural women obtained significantly higher scores in “physical function”, “general health” and “vitality.” Although the subscales of “bodily pain,” “social function and “role limitation” were better in urban women. Multivariate linear regression results revealed factors affecting quality of life, including the number of children, satisfaction with children’s conduct, income, occupation and score of postmenopausal symptoms in urban women; and satisfaction with children’s conduct, income, chronic diseases, age, postmenopausal duration, education, and score of postmenopausal symptoms in rural women.

**Conclusion:** The present study results showed that various dimensions of quality of life were at an acceptable level, but the two groups were significantly different in most subscales. Considering the increasing middle-aged and older population, attention to the quality of life of women in these age groups is crucial. The present study determined the difference in dimensions of quality of life between urban and rural women and identified their possible health requirements.

**Keywords:** Health, Menopause, Quality of life, Women

## Introduction

The World Health Organization (WHO) defines quality of life (QOL) as one’s perception of their living conditions based on the culture and value system in which they live as well as the relationship of the perception with objectives, expectations and standards (1).

In fact, the concept of QOL comprises physical and psychological well-being as well as those valuable characteristics caused by the sense of comfort in line with development and rational maintenance of physical, emotional and mental performance and help individuals preserve their capabilities in life activities (2).

Menopause women experience special physical and psychological changes caused by severe estrogen drop and face numerous problems such as vasomotor symptoms, sleep disorders, sexual dysfunction as well as psychological and cognitive problems such as depression, irritability and loss of memory and concentration (3). Furthermore, issues such as children’s marriage and parents’ or spouse’s death or illness, which often occur during menopause (4),

may affect QOL in these women (5).

Researches show that different factors such as living environment can affect menopausal symptoms and consequently QOL (6). Despite substantial improvement in health indicators of rural areas after 1993 (7), many villages still suffer the shortage of health services. Rural women experience some degrees of deprivation and social isolation and have little access to resources. These factors along with low levels of development in rural areas can affect QOL in rural women (8).

Some of studies addressed the effect of place of residence on QOL in menopausal women. For example, researchers in Poland found that QOL is different between menopausal rural and urban women (9). Moreover, Khademi et al found a more negative attitude to menopause in Iranian rural women than in urban women. They also found sociocultural factors to be playing a key role in both physical and mental aspects of menopause (10).

Different studies suggest reduced QOL in menopause women as a result of menopausal symptoms experienced

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by them (11,12). Given QOL as an important health issue and a healthcare objective in menopause women in different communities as well as the effect of living environment on menopausal symptoms, the present study was conducted to compare QOL in urban and rural menopause women in northwest Iran.

### Materials and Methods

This cross-sectional study was conducted on urban and rural menopause women in Tabriz. While the inclusion criteria comprised having amenorrhea for 1-5 years, no surgeries in the past 3 months, having physiological menopause and not taking psychiatric medications, unwillingness to participate in the study was the only exclusion criterion.

The maximum sample size calculated as per the study conducted by Hakimi et al ( $m=8.42$ ,  $SD=19.3$ ) (13),  $\alpha=0.05$  and precision of 0.1 was 158. Considering a cluster study and design effect of 1.5 and dropout rate of 15%, the minimum required sample size was calculated as 544 (272 in each of the urban and rural women groups).

Cluster sampling was used to consider 46 clusters for each of the urban and rural groups. Using the address list of 50-55 years old women in Tabriz Register Office, extracted from the last national census, 46 addresses were randomly selected and considered cluster heads.

A total of 23 villages of Tabriz were randomly selected for sampling. Two clusters were randomly selected for each village using the health houses information. In each cluster, 6 subjects completed the questionnaires. The sampling began from the cluster head and continued by moving leftwards sequentially. If the inclusion criteria were not met, participants were not home or were unwillingness to take part in the study, the next house was referred to. All the interviews were conducted by the first author and 2 trained interviewers. After controlling the inclusion criteria, all the participants were asked to sign a written consent form. All the subjects were free to leave the study at any stage.

Data collection tools included a socio-demographic questionnaire, Short-Form Health Survey (SF-36) and Questionnaire to Assessment Women's Experiences of Menopause.

The socio-demographic questionnaire comprised 13 items on personal information. The subjects completed the 36-item SF-36 that assessed physical and psychological health using a combination of scores obtained from eight subscales. The reliability and validity of this data collection tool was confirmed by Montazeri et al in Iran (14).

A researcher-made 44-item questionnaire on physical and psychological symptoms, anxiety, emotions, attitude and menopausal compatibility was completed by the scores of menopausal symptoms. Psychometric evaluation of this data collection tool was conducted by assessing the face, content and constructs validities as well as internal consistency and retest reliability. The Cronbach's alpha and test-retest reliability calculated were respectively 0.96

and 0.78 (15). All the three questionnaires were completed by face-to-face interviews with all the participants.

After completing the questionnaires, the data were analyzed in SPSS 17. *P* values of less than 0.05 were considered statistically significant. Descriptive statistics were used to describe socio-demographic characteristics, QOL and menopausal symptoms. General linear model (analysis of covariance – ANCOVA) was used to compare QOL after adjusting baseline variables such as age, education level, housing condition and satisfaction with the behavior of wife and children as well as presence of chronic diseases.

In order to determine the predictors of QOL in urban and rural women, independent variables with *P* values of less than 0.2 in bivariate tests such as independent *t* tests, one-way analysis of variance (ANOVA) and Pearson correlation coefficient were included in multivariate linear regression model with backward strategy.

### Results

The present study was conducted on 544 urban and rural menopause women from March to September 2015. The mean age and number of children of these women was  $51.8 \pm 3.1$  years and  $3.7 \pm 1.3$  respectively. A total of 78.9% of the subjects were housewife, 66.6% were illiterate or had primary education, while 76.6% had moderate income levels. Table 1 gives the socio-demographic information of the study subjects in terms of place of residence.

After adjusting the baseline variables, the comparison of the mean scores of QOL showed significant differences between urban and rural menopause women in terms of physical functioning, bodily pain, general health, vitality, social functioning and role limitations due to emotional problems (Table 2).

According to the results of bivariate tests, *P* values of less than 0.2 were attributed to number of children, satisfaction with the behavior of wife and children and education level in urban women and to number of children, satisfaction with the behavior of wife and children, occupation and presence of chronic diseases in rural women. These variables were therefore included in the linear regression model.

Results of multivariate linear regression showed that number of children, satisfaction with children's behavior, sufficiency of monthly income, occupation status and score of menopausal symptoms affect and predict 54% of variations in QOL in urban women. Although satisfaction with children's behavior, sufficiency of monthly income, presence of chronic diseases, age, duration of menopause, education level and score of menopausal symptoms are effective variables on QOL in rural women, they predict a mere 26% of the variations (Table 3).

### Discussion

The present study was conducted to compare QOL in urban and rural menopause women. The results obtained indicated above average QOL in all dimensions of QOL

**Table 1.** Comparison of Socio-Demographic Information of Urban and Rural Women

Socio-demographic information	Urban (n = 272)	Rural (n = 272)	P
Mean age (y), Mean (SD)	50.9 (2.9)	52.6 (4.2)	<0.001 <sup>a</sup>
Mean duration of menopause (y), mean (SD)	3.2 (1.6)	2.9 (1.4)	0.071 <sup>a</sup>
Mean number of children, mean (SD)	3.6 (1.3)	3.8 (1.3)	0.093 <sup>a</sup>
Employment status, No. (%) (Housewife)	200 (78.7)	229(84.2)	0.116 <sup>b</sup>
Education level, No. (%)			<0.001 <sup>b</sup>
Illiterate	60 (22.2)	111 (40.8)	
Primary-secondary school	132 (48.6)	141 (53)	
High school/college diploma	47 (17.5)	14 (5.1)	
University education	32 (11.9)	3 (1.1)	
Marital status, No. (%)			0.662 <sup>b</sup>
Married	237 (87.1)	241 (88.6)	
Single/divorced	17 (6.2)	10 (3.6)	
Widow	18 (6.6)	21 (7.2)	
Sufficiency of monthly income, No. (%)			<0.001 <sup>c</sup>
Quite adequate	60 (22.1)	39 (14.3)	
Fairly adequate	192 (70.5)	230 (84.5)	
Inadequate	20 (7.1)	3 (1.1)	
Housing ownership, No. (%)	204 (75.0)	232 (85.3)	0.004 <sup>b</sup>
Satisfaction with the behavior of wife, No. (%)	193 (71)	217 (80.5)	0.012 <sup>c</sup>
Satisfaction with children's behavior, No. (%)	175 (64.3)	210 (77.5)	0.001 <sup>c</sup>
Presence of chronic diseases, No. (%)	88 (32.4)	41 (15.1)	0.001 <sup>b</sup>

<sup>a</sup>Independent t-test; <sup>b</sup> Chi-square; <sup>c</sup> Chi-square for trend.

**Table 2.** Comparison of the Mean Scores of QOL in Rural and Urban Women

Variable	Urban	Rural	p
Physical functioning	73.7(23.4) <sup>b</sup>	77.3(19.2) <sup>b</sup>	0.021 <sup>a</sup>
Role limitations due to physical problems	72.4(33.9) <sup>b</sup>	70.1(74.1) <sup>b</sup>	0.103
Bodily pain	75.8(19.6) <sup>b</sup>	71.5(16.6) <sup>b</sup>	0.043 <sup>a</sup>
General health	57.8(14.8) <sup>b</sup>	66.0(12.7) <sup>b</sup>	0.041 <sup>a</sup>
Vitality	64.7(14.1) <sup>b</sup>	68.7(12.1) <sup>b</sup>	0.042 <sup>a</sup>
Social functioning	76.5(36.4) <sup>b</sup>	65.8(17.3) <sup>b</sup>	0.008 <sup>a</sup>
Role limitations due to emotional problems	72.7(35.5) <sup>b</sup>	57.5(40.6) <sup>b</sup>	<0.001 <sup>a</sup>
Mental health	68.9(18.7) <sup>b</sup>	70.5(13.4) <sup>b</sup>	0.063

<sup>a</sup> GLM (baseline variables controlled); <sup>b</sup> Mean (SD).

in the participants. Out of 8 dimensions assessed, general health and role limitations due to emotional problems, as vulnerable dimensions of QOL, respectively received the lowest scores in urban and rural women, which is consistent with different studies (16-18).

Unlike Żołnierczuk-Kieliszek et al who reported statistically significant differences between the total score of QOL in urban and rural women (9), the present study found differences in some dimensions of QOL in the two groups.

Rural women studied had higher mean age and satisfaction with their children and lower socioeconomic status compared to the urban population. Physical functioning, general health and vitality were found to be higher in the studied rural compared to urban women, a potential cause of which is different lifestyle and higher mobility in rural women.

The present study found lower bodily pain in urban women. Davatchi et al, who conducted a comprehensive study in Iranian villages, found higher prevalence of musculoskeletal pain in rural women compared to

those in urban women. The occupation of most Iranian villagers, especially in small villages, is mainly agriculture, which is non-mechanized in some cases (19). People in rural areas therefore do more physical work than they do in urban areas. Furthermore, the present study found 7% of the women to be helping their spouse with agriculture. The difference in bodily pain is therefore justifiable given this rural lifestyle.

Social functioning was found to be higher in the studied urban women compared to rural women. Women living in towns have generally more opportunities to engage in sociocultural and economic activities (20) and naturally have better social functioning compared to rural women.

Role limitations due to emotional problems were also found to be significantly better in urban women compared to rural women, which can be justified by little access to psychiatric services in villages. Unlike other studies mental health in this study was not significantly different between rural and urban women (9,21,22).

According to the regression model, income, satisfaction with children and menopausal symptoms are predictors

**Table 3.** Multivariate Predictors of QOL Among Urban and Rural Menopausal Women (n = 544)

Variable	Urban Women, n = 272		Rural Women, n = 272	
	B (95% CI)	P	B (95% CI)	P
Number of children	-2.97 (-4.6 to -1.38)	0.009	-	
Occupation				
Housewife	Referent	0.035	-	-
Employed	4.46 (-2.72 to -7.29)			
Sufficiency of monthly income				
Fairly adequate	Referent		Referent	
Inadequate	-6.9 (-12.7 to -0.1)	0.021	-4.46 (-6.72 to -0.29)	0.035
Satisfaction with children's behavior				
Satisfied	Referent	0.021	Referent	0.011
Dissatisfied	-2.7 (-8.2 to -1.2)		-3.1 (-9.2 to -0.2)	
Score of menopausal symptoms	-0.39 (-0.55 to -0.36)	<0.001	-0.433 (-0.64 to -0.22)	<0.001
Duration of menopause <sup>a</sup>	-	-	-1.9 (-3.2 to -0.7)	0.002
Age <sup>a</sup>	-	-	-0.4 (-0.8 to 0.03)	0.07
Education level <sup>a</sup>				
School diploma	-		Referent	0.001
University education and high			12.8 (7.3 to 18.5)	
Illiterate and primary school			-11.4 (-21.1 to -4.5)	0.002
Chronic diseases <sup>a</sup>				
Presence of chronic diseases	-		Referent	
Absence of chronic diseases			-6.03 (-10.91 to -1.20)	0.095
Adjusted R square	0.54		0.26	

<sup>a</sup>Not appeared in the final model.

of QOL in both groups. In the urban population, occupation, income, number of children, satisfaction with children and presence of menopausal symptoms were found to predict over half of variations in the score of QOL. Although education level, income, satisfaction with children's behavior, age, menopausal duration and presence of chronic diseases were effective factors on QOL in rural women, they explained less than 30% of the variance, which indicates that other factors also contribute to QOL.

Menopausal symptoms were found to predict QOL in both groups of urban and rural women. Menopause is associated with physical and psychological changes that may affect women's health (23). Menopausal effects on QOL may be caused by biological changes associated with menopausal symptoms or sociocultural factors. Effects of socioeconomic class on QOL are well demonstrated. Research suggests that income, education level and being employed improve QOL (24).

The present research found unemployment and lack of university education contributed to lower QOL in urban and rural women respectively, while low income contributed to lower QOL in both groups. All these three indicators are regarded as socioeconomic factors. Many studies suggest that low income and education lower the score of QOL obtained in SF-36 (16,25).

Chronic diseases were unexpectedly found to predict QOL only in rural women although a third of the urban population suffered chronic diseases such as diabetes and hypertension. Having any type of chronic disease can affect all dimensions of QOL (26). Furthermore, children's

undesirable behavior was identified as an effective variable on QOL in both groups, possibly by affecting mental health (27).

Some studies suggest destructive effects of aging on QOL, especially on physical dimension (28-30). Age was also found a predictor of QOL in the present study rural women.

### Study Limitations

The present study has strengths such as being community-based. On the other hand, subjects living in villages in the vicinity of towns may follow urban lifestyle, which may affect the results obtained.

### Research Highlights

The results obtained in this research can be used by health care system managers to develop QOL improvement programs for menopause women living in towns or villages.

### Conclusion

The results obtained in the present study suggest acceptable level of QOL dimensions in urban and rural women although most domains were significantly different in the 2 groups. Menopausal symptoms, socioeconomic indicators and satisfaction with children's behavior were identified as effective factors on QOL in both groups. Given the Iranian population pyramid and growing population of middle-age and older adults in the present and future, paying attention to QOL in this age group of women is crucial. The present research identified

differences in QOL dimensions and specified possible health needs of urban and rural women.

### Ethical Issues

This study was approved by the Ethics Committee of Tabriz University of Medical Sciences, Tabriz, Iran (Ethical code: 1393. 9.27-5.4.8904).

### Conflict of Interests

Authors declare that they have no competing interests.

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