

## **Original Article**

# **Quality of Life and Related Factors in Yazd in 2012**

Hossein Fallahzadeh<sup>1</sup>, Mahdiah Momayyezi<sup>2\*</sup>

1. Associate Professor Department of Biostatistics and Epidemiology, Prevention and Epidemiology of Non-communicable Disease Research Center, Shahid Sadoughi University of Medical Sciences, Yazd, Iran
2. MSc of Health Education, Prevention and Epidemiology of Non-communicable Disease Research Center, Shahid Sadoughi University of Medical Sciences, Yazd, Iran

Received: 8/18/2013

Accepted: 11/25/2013

---

### **Abstract**

**Introduction:** Quality of life is positive or negative evaluation of the characteristics of a person's life and a person's overall satisfaction with their lives, according to the goals and expectations it is the ideal goal for health care and evaluates the effect of health on life. This study assessed quality of life of people over 18 years old in Yazd city.

**Materials and Methods:** This descriptive cross-sectional study on 352 people over 18 years old living in households was conducted in the city of Yazd in 2011. Cluster sampling was performed according to the Yazd's health center and for measuring quality of life WHOQOW-BREF questionnaire was used.

**Results:** The mean scores for quality of life dimensions were  $12.99 \pm 2.76$  for physical health,  $13.23 \pm 2.58$  for mental health,  $13.15 \pm 2.92$  for public health and  $12.54 \pm 2.32$  for environmental health. Quality of life in people with chronic diseases was lower than the healthy people ( $P < 0.001$ ). There was an inverse relationship between BMI and quality of life score, and there was a direct correlation with income and housing infrastructure ( $P < 0.05$ ).

**Conclusion:** Quality of life in people with chronic diseases was lower than the healthy people. The creation of health care teams to provide supports in the field of physical, psychological, social services for People and also to guide them to having better life in all dimensions can be effective for improving quality of life.

**Keywords:** Quality of life, WHOQOW-BREF questionnaire, Yazd, related factors.

---

---

\* Corresponding author: Tel: +989137494161, Email: [mahdiah\\_momayyezi@yahoo.com](mailto:mahdiah_momayyezi@yahoo.com)

## Introduction

The Quality of Life was defined by World Health Organization as "the perception of the individual of their position in life, in the context of culture and value systems in which they live, and in relation to their goals, expectations, standards and concerns"<sup>[1]</sup>.

In fact, quality of life is the ideal goal for health care and evaluated the effect of health on life. Accordingly, Health care is just as good and decent that enhances the quality of life along with quantity of life in a person who is under the care. The measurement of health and the effects of health care must include not only an indication of changes in the frequency and severity of diseases and Death Index but also an estimation of well being and this can be assessed by measuring the improvement in the quality of life related to health care<sup>[2]</sup>. Quality of life is an important indicator that it is necessary to measure in the various health researches<sup>[3]</sup>.

However, information about the quality of life in a country can be considered as a basis of information to be used when evaluating interventions. The constitution of the World Health Organization (WHO) defines health as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. Quality of life is positive or negative evaluation of the characteristics of a person's life and a person's overall satisfaction with their lives, according to the goals and expectations<sup>[4]</sup>.

Three aspects of this concept is included the individual perspective about their overall health, satisfaction of Physical, psychological-social and economic dimensions and subset of these dimensions. In a study conducted by Nejat and

colleagues in 2005, quality of life of people in Tehran were studied in the a sample of 1200 people, the mean quality of life in all domains in the people in Tehran were significantly lower than all over the world. The mean quality of life in the various domains was: physical health 14.3 (SD=2.6), mental health 13.4 (SD=2.6), and social health 13.9 (SD=2.6) and the status of environment 12.3 (SD=2.4). Also, the researchers concluded that according to the lower quality of life in Tehran, necessary interventions required in this area<sup>[5]</sup>.

Hadi and colleagues conducted a study in 2003 that 102 teachers were assessed using questionnaire SF- 36. The results of this study showed that teachers' reported physical health was better than mental health status. ( $P<0.05$ ) Men evaluated their health better than women on measures of sexual function, physical limitations, emotional limitations, the dimensions of physical health, mental health and general health and teachers with more experience had better mental health<sup>[3]</sup>.

In a study conducted by Serrano and colleagues in 2008 entitled " Obesity and health related quality of life in the general adult population of the Canary Islands showed that people who were obese had lower quality of life and getting sick were higher in them. There was negative correlation between BMI and quality of life"<sup>[6]</sup>.

Another study entitled "Quality of Life in rural and urban populations in Lebanon using SF-36 Health survey" was conducted by Sabbah and colleagues and 1632 patients were selected randomly from the general population in urban and rural. This study showed that quality of life

was lower in women than men. Quality of life was different in urban and rural areas and older men had higher scores in most areas except for physical activity <sup>[7]</sup>.

In a study which was conducted in 2009 by Gallicchio and colleagues as "The relationship between gender, social support, and health-related quality of life in a community-based study in Washington County Maryland ", 626 women aged 45-54 years were studied. In this study, information on obesity index, quality of life, and the information about race and other demographic variables were examined. Relationship between race and quality of life were assessed using logistic regression. The results of this study showed that there is no correlation between race and quality of life. This study showed that there was a significant difference between menopausal symptoms and quality of life <sup>[8]</sup>. Therefore, this study is designed to assess quality of life and related factors in Yazd.

## Materials and Methods

This is a descriptive and cross-sectional study. The sample size was determined to be 180, But according to cluster sampling coefficient ( $Q=2$ ), 360 people were studied.

A two-stage cluster sampling was conducted and clusters selection was based on the framework of the health centers in Yazd. At first, 10 health centers were randomly selected and a cluster consisting of 30 households that were eligible were selected from each health center. Starting point of each cluster was selected randomly.

Data collected by Quality of life questionnaire

developed by the World Health Organization (WHOQOL-BREF) in which validity and reliability has been identified in various countries and in Tehran <sup>[4, 9]</sup>. The WHOQOL-BREF consists of 26 questions in four general domains: physical health (7 items), psychological health (6 items), social health (3 items), and environmental health (8 items) that is scored from 1 to 5 on a response scale and transformed linearly to a 0–100-scale <sup>[10]</sup>.

The physical health includes: mobility, daily activities, functional capacity, energy, pain, and sleep. The psychological health include: self-image, negative thoughts, positive attitudes, self-esteem, mentality, learning ability, memory concentration, religion, and the mental status. The social health include: personal relationships, social support, and sex life. The environmental health contains questions related to financial resources, safety, health and social services, living physical environment, opportunities to acquire new skills and knowledge, recreation, general environment and transportation <sup>[5]</sup>.

Researchers completed the questionnaire with an interview with one of the family members. Also, Weight and height were measured with appropriate tools. Sampling Within each cluster was quota and equal between the sexes. One person aged over 18 was selected from each household.

Median of quality of life aspects was measured to determine different levels: Scores below the Middle were considered as poor quality of life and Scores above the median were as desirable quality of life.

Of the 360 questionnaires that were distributed and completed, 8 cases were excluded (because they had filled the questions incompletely) and finally 352 cases were coded and entered into the computer. Data was analyzed with SPSS 15. T-test, ANOVA and non-parametric test include Mann-Whitney and Wilcoxon was used to analyze the variables and by using discriminated analysis for each sample, socioeconomic status (housing infrastructure, Type of home, income, life facilities and resources) was determined and predictors of quality of life were assessed using multivariate regression models. The dependent variable was binary (groups with QOL scores below the median and above the median) and independent variables (including age, marital status, BMI, socioeconomic status)

## Results

In this study, 360 participants were selected using cluster sampling of households living in urban areas of Yazd. They completed quality of Life questionnaire.

The results showed that the average age of the women was  $38.06 \pm 15.81$ . Most participants (30.3%) were in the age group of 20-29 years. Most of the participants (19.9%) had university education.

Table 1 shows the average quality of life dimensions. According to this table, the mean scores for physical health, mental health, social health and environmental health are significantly higher in healthy people. Results showed that mental health had highest mean and environmental health had the lowest mean.

**Table 1:** Quality of life Dimensions according to disease status

Diseases	Physical health	Mental health	Social health	Environmental health
	Mean(SE)	Mean(SE)	Mean(SE)	Mean(SE)
<b>Healthy</b>	13.85(2.25)	13.77(2.29)	13.63(2.94)	12.84(2.3)
<b>Chronic disease</b>	11.7(2.95)	12.42(2.77)	12.38(2.75)	12.1(2.26)
<b>Total</b>	12.99(2.76)	13.23(2.58)	13.15(2.92)	12.54(2.32)
<b>P-value</b>	0.0001	0.0001	0.0001	0.003

P<0.05 was considered significant

Table 2 shows the mean quality of life domains according to sex. According to the results, the mean physical health is significantly higher in men ( $13.34 \pm 2.4$ ) than women ( $12.72 \pm 2.9$ ). (P=0.039) But in other areas, there were no significant differences between men and women.

Also, Table 2 shows the mean quality of life domains in men and women which is based on results from studies in other parts of the world with the World Health Organization questionnaire.

**Table 2:** Mean of quality of life dimensions according to sex and compared with the general result in the world (one sample T-Test)

Domination		Women	Men	Total	P-value
Physical health	Yazd	12.72±2.96	13.34±2.43	12.99±2.76	0.039
	World	14.2	14.3	13.1	
	P-value	0.0001	0.0001	0.47	
Mental health	Yazd	13.13±2.67	13.36±2.45	13.23±2.58	0.414
	World	14	14.2	13.7	
	P-value	0.0001	0.0001	0.001	
Social health	Yazd	13.2±3.17	13.08±2.59	13.15±2.93	0.729
	World	14.4	14.1	14	
	P-value	0.0001	0.0001	0.0001	
Environmental health	Yazd	12.72±2.28	12.3±2.35	12.54±2.32	0.652
	World	13.9	13.8	13.8	
	P-value	0.0001	0.0001	0.0001	

P<0.05 was considered significant

The results showed that the mean of health in most domains in our study is less than the mean in other parts of the world and this difference is statistically significant.

Table 3 shows the mean quality of life domains

according to the age group. The results showed that the mean in all dimensions of quality of life decreases with increasing of age and mean scores of health were higher in the lower age groups (P<0.05).

**Table3:** Quality of life Dimensions according to age group

Age group	Physical health	Mental health	Social health	Environmental health
	Mean(SE)	Mean(SE)	Mean(SE)	Mean(SE)
<20	15.2(2.45)	14.9(2.36)	13.66(2.73)	13.8(2.46)
20-29	14.29(2.19)	13.84(2.45)	14.47(2.78)	13.88(2.34)
30-39	12.88(2.14)	13.09(2.37)	14.75(2.53)	12.19(2.37)
40-49	12.04(2.92)	12.48(2.59)	11.09(2.93)	12.1(2.31)
50-59	11.61(3.57)	12.74(2.56)	12.99(2.43)	12.27(2.1)
60<	11.79(3.35)	12.96(2.94)	12.07(3.7)	12.51(2.18)
P-value	0.0001	0.001	0.0001	0.047

P<0.05 was considered significant

Table 4 shows the correlation between the scores for the different domains of quality of life questionnaire variables with BMI, education level, number of children, income and housing infrastructure. Results showed that there was a significant negative correlation between BMI with physical health and mental health. ( $P < 0.01$ )

Also, there is a significant positive correlation between all domains of quality of life and income. ( $P < 0.01$ ) Also, there is a significant positive relationship between housing infrastructures with environmental health. ( $P < 0.01$ )

**Table4:** Quality of life Dimensions according to socioeconomic status

Socioeconomic status	Physical health Mean(SE)	Mental health Mean(SE)	Social health Mean(SE)	Environmental health Mean(SE)
Poor	13.19(2.62)	13.39(2.49)	12.95(2.95)	12.27(2.36)
Average	11.45(2.93)	12.4(2.82)	12.56(2.98)	12.27(2.22)
Good	13.9(2.32)	13.68(2.42)	14.1(2.69)	13.3(2.22)
P-value	.000	.005	.004	.001

$P < 0.05$  was considered significant

Although, the mean in all dimensions of quality of life were higher in nonsmokers than smokers, But there was a statistically significant difference between physical health and environmental health with smoking. ( $P < 0.05$ )

The mean quality of life in all dimensions was higher in single people than married and widowed and divorced However, this difference was statistically significant in physical health, mental health and environmental health domains ( $P < 0.05$ ).

**Table 5:** The correlation matrix of quality of life dimensions with BMI, Educational level, Number of children, income and housing infrastructure

Variables	Physical health	Mental health	Social health	Environmental health
<b>BMI</b>	$r = -0.191$	$r = -0.171$	$r = -0.091$	$r = -0.095$
	$P = 0.001$	$P = 0.003$	$P = 0.133$	$P = 0.091$
<b>Educational level</b>	$r = 0.304$	$r = 0.187$	$r = 0.249$	$r = 0.201$
	$P = 0.0001$	$P = 0.0001$	$P = 0.0001$	$P = 0.0001$
<b>Number of children</b>	$r = -0.031$	$r = -0.097$	$r = -0.112$	$r = -0.069$
	$P = 0.587$	$P = 0.088$	$P = 0.068$	$P = 0.228$
<b>Income</b>	$r = 0.144$	$r = 0.197$	$r = 0.178$	$r = 0.242$
	$P = 0.003$	$P = 0.008$	$P = 0.002$	$P = 0.003$
<b>Housing infrastructure</b>	$r = 0.024$	$r = 0.006$	$r = 0.021$	$r = 0.191$
	$P = 0.699$	$P = 0.926$	$P = 0.761$	$P = 0.002$

R: Pearson correlation

$P < 0.05$  was considered significant

The logistic regression models were used to determine factors associated with four domains of

the specific Quality of life, and the results are shown in Table 6.

**Table 6:** related factors associated with presenting higher scores (above the median) four different items of the quality of life questionnaire

Risk factor	OR	P-value	CI
<b>Physical health</b>			
Age		0.000	
<20	1		
20-29	0.7	0.61	(0.17-2.74)
30-39	0.16	0.01	(0.04-0.68)
40-49	0.16	0.01	(0.03-0.7)
50-59	0.1	0.003	(0.02-0.48)
60<	0.23	0.07	(0.04-1.16)
Marital Status		0.022	
Single	1		
Married	0.69	0.31	(0.34-1.41)
Divorced or	0.04	0.006	(0.005-0.41)
Widowed			
<b>Mental health</b>			
Marital Status		0.027	
Single	1		
Married	0.71	0.29	(0.38-1.33)
Divorced or	0.19	0.007	(0.06-0.64)
Widowed			
BMI		0.012	
> 18.5	1		
18.5-24.9	1.42	0.56	(0.42-4.74)
25-29.9	1.05	0.93	(0.31-3.54)
30<	0.38	0.16	(0.09-1.47)
<b>Social health</b>			
Age		0.022	
<20	1		
20-29	1.08	0.9	(0.26-4.5)
30-39	0.35	0.14	(0.08-1.45)
40-49	0.35	0.16	(0.08-1.52)
50-59	0.64	0.55	(0.14-2.82)
60<	0.5	0.42	(0.09-2.73)
<b>Environmental health</b>			
Socioeconomic status		0.000	
Poor	1		
Mild	0.92	0.8	(0.49-1.71)
Good	3	0.000	(1.72-5.21)

OR: odds ratio, CI: Confidence interval

## Discussion

In recent years, quality of life is an important issue in health Researches, because it compares the health status of different populations considering the sensitive indicators of health and quality of life.

In a general view, the quality of life in different areas was relatively good but in comparison with

other parts of the world, scores are lower in Yazd. Result showed that the mean of physical health in Yazd population is lower than in Tehran, but the mean of mental health in Yazd is higher than in Tehran<sup>[5]</sup>. Lack of parks and recreational facilities in Yazd concluded low score in mental health in Yazd.

But it should be noted that the mean of mental health in the WHO study in the three countries, Argentina (10.6), Greece (12.8) and Turkey (13.2) is lower than in Yazd. Also, mean environmental health in Argentina (11.7) and Tehran (12.3) was lower than Yazd<sup>[5, 11]</sup>.

In our study, Mean physical health in men was higher than women. There was also a statistically significant relationship in Tehran and World Health Organization study<sup>[5, 11]</sup>. Quality of Life in Kurdistan was also higher in men than women<sup>[12]</sup>. However, in our study, other dimensions of quality of life such as mental health, social health and environmental health were not significantly different between men and women, but in study conducted in Tehran, there were significant differences in quality of life dimensions with sex<sup>[5]</sup>. Maybe the limited physical activity of women outside home and more sensitivity of women in the face of unfortunate events are probably the main reasons for the differences between the sexes.

In this study, increasing age reduced quality of life dimensions scores. It has also been confirmed in other studies that quality of life is decreased with increasing age<sup>[5, 11]</sup>.

People are likely to be affected by psychological and physical changes due to increasing age and also increase of the risk of disease and disability, therefore support and empower factors in older people is important for improving the quality of life.

The results showed that increasing educational level increases the mean quality of life. Other studies have confirmed this issue<sup>[5, 11, and 12]</sup>. According to the findings, people had healthy and high quality living through the higher education.

Also, the increasing incomes have increased the quality of life.

Result showed that quality of life score was lower in smokers than nonsmokers. Other studies have confirmed this issue<sup>[11]</sup>. In a study conducted in Denmark it has shown that smoking has a negative impact on quality of life<sup>[13]</sup>. But there was no association between cigarette smoking and quality of life in Graham's study<sup>[14]</sup>.

In this study, physical health was lower in women than men; therefore it is necessary to pay more attention to women's health. Also due to the low quality of life in the elderly, more attention should be paid to this group. Due to the relationship between cigarette smoking and quality of life, strategies should be taught to reduce smoking, especially among young people and recreational activities should be provided to enhance the mental health community.

Logistic regression analysis showed that age and marital status are independent risk factors for physical dimension of quality of life, so the chance of having better quality of life in physical dimension decreases with increasing age and the odds ratio of physical health in 30-39 years old and 40-49 years olds were 84% and 50-59 years olds were 90% which were lower than under 20 years old, i.e. this trend is descending and this difference was statistically significant.

Also, married subjects (31%) and divorced-widowed individuals (96%) had lower quality of life in physical health dimension as compared to singles and this difference in divorced and widowed subjects was statistically significant. Considering that single people have more time to do activities related to quality of life such as physical activity, this difference seems logical.



According to the results, BMI and marital status were two factors affecting the mental health of quality of life. Individuals with normal BMI (BMI= 18.5-24.9) with odds ratio of 1.42 as compared with thin Individuals (BMI less than 18.5) had lower quality of life in mental dimension. Considering that BMI is one of the most important factors affecting the quality of life, so it is logical that people who have appropriate BMI, have a good condition of quality of life.

In terms of marital status, single, married and divorced - widow people respectively had the better chance of having better quality of life in mental health dimension which was statistically significant ( $p=0.027$ ). This difference is reasonable considering that divorced or widowed people are more concerned about their future and also Married people are more concerned about daily issues than singles.

Age was the only independent variable affecting the social health and people aged between "20-29" were more likely to have favorable social health dimension than other groups.

Socioeconomic status was also the only variable affecting the environmental health which was statistically significant ( $p=0.000$ ). Findings showed that subjects with good condition had 3 times more chances than People with poor condition for having higher quality of life in

environmental health condition and this difference was highly statistically significant. Limitations of this study were its cross-sectional design and self-report.

### Conclusion

Quality of life in people with chronic diseases was lower than the healthy people and also, was significantly lower in women than men in adult population in Yazd. Quality of life had a negative relationship with BMI. Creation of health care teams to provide supports in the field of physical, psychological, and social services for People and also to guide them to having better life in all dimensions can be effective for improving the quality of life.

The authors declare that they have no conflicts of interest.

This work was supported by prevention and epidemiology of non-communicable disease research center, Shahid Sadoughi University of Medical Sciences.

### Acknowledgement

The researchers feel themselves obliged to the prevention and epidemiology of non-communicable disease research center due to guidance and counseling for doing this study.

### References

- 1- The WHOQOL Group (1995) The World Health Organization Quality of Life Assessment (WHOQOL): position paper from the World Health Organization. *Soc Sci Med* 41(10):1403–1409.
- 2- Fairclough, D. L. Design and Analysis of Quality of life studies in clinical trials, 1st Ed. New York: Chapman & Hall 2002:4-15.

- 3- Hadi, N.; Malekmakan, L. Health and quality of life of primary school teachers in 1382 in Yazd. Hormozgan University of Medical Sciences. 2008; 10(4): 392-387.
- 4- WHO L group. Measuring quality of life, the development of the world Health organization quality of life Jutrumet (Who 1:1992).
- 5- Nejat, S; et al. Quality of life of Tehran's Population by WHOQOL-BREF questionnaire in 2005. Hakim. 2007; 10 (3):1-8.
- 6- Serrano-Aguilar, P.; et al. Obesity and health related quality of life in the general adult population of the Canary Islands. Qual Life Res. 2009 Mar; 18 (2):171-177.
- 7- Sabbah, I.; et al. Quality of life in rural and urban populations in Lebanon using SF-36 Health Survey. Health and Quality of Life Outcomes 2003; 1: 30.
- 8- Gallicchio, L.; Hoffman, S.C.; Helzlsouer, K. J. The relationship between gender, social support, and health-related quality of life in a community-based study in Washington County Maryland. Qual Life Res 2007, 16:777-786.
- 9- Nedjat, S.; et al. Psychometric properties of the Iranian interview-administered version of the World Health Organization's Quality of Life Questionnaire (WHOQOL-BREF): a population-based study. BMC Health Serv Res.2008; 8: 61.
- 10-Skevington, S. M.; Tucker, C. Designing response scales for cross-cultural use in health care: Data from the development of the UK WHOQOL. Br J Med Psycho 1999; 72: 51-61.
- 11-Skevington, S. M.; Lotfy, M.; O'Connell, K. A. The World Health Organization's WHOQOL-BREF quality of life assessment: psychometric properties and results of the international field trial. A report from the WHOQOL group. Qual Life Res 2004; 13:299-310.
- 12-Shams-Alizadeh, N.; et al. Quality of life in 15-64 years old people in Kurdistan province ,western part of Iran . Journal of Fundamentals of Mental Health 2010. Vol. 12, No. 1(45), P. 448-456.
- 13-Bronnum-Hansen, H.; Juel, K.; Davidsen, M. Sorensen J. Impact of selected risk factors on quality adjusted life expectancy in Denmark. Scand J Public Health 2007; 35(5): 510-5.
- 14-Graham, J. E.; et al. Health related quality of life in older Mexican Americans with diabetes: A cross-sectional study. Health Qual Life Outcomes 2007; 5: 39.