

Original Article

Evaluation of the relation between poverty and health-related quality of life in the people over 60 years-old in the district 4 of Tehran municipality in 2009-2010

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Abstract

As the articles in recent years well indicate, more than all other factors, social determinants of health are involved in people's health status and quality of life (QOL). Among these social factors, the economic one is introduced as the main factor determining health status. This study was designed to evaluate the impact of poverty on QOL. The health-related QOL of poor people under coverage of a public charity institution (group 1) was compared with the QOL of ordinary people (group2) using the SF-36 questionnaire. The QOL scores in the groups 1 and 2 were analyzed by Mann-Whitney, Kruskal -Wallis tests and logistic regression using the SPSS 16.00 software. A total of 400 individuals were studied. The results showed significant differences between the two groups in the QOL measures of SF-36, except for physical and mental health measures ($P < 0.001$). With regard to the adverse consequence of the Physical Component Scale (PCS), employing logistic regression analysis, statistically significant relationships between the two groups in the demographic characteristics, except age and marital status, were found. For the adverse consequence of Mental Component Scale (MCS), logistic regression showed statistically significant differences between the two groups in the demographic characteristics, except for age. The findings indicate that poverty diminishes the QOL in most aspects; however, considering all aspects of QOL is necessary to promote the individuals' health.

Keywords: poverty, quality of life, social determinants of health.

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Introduction

Social Determinants of Health (SDH) are involved in people's health status and Quality of Life (QOL) more than all other factors. This study was designed to assess the effects of poverty on QOL. At first, the effect of the poverty phenomenon on health was the most considered one, in other words, it was believed that if an individual does not have sufficient economic power, he would not be able to supply for a proper nutrition, receive an adequate training about health and ultimately provide for his own and his family's health. But what is more important, is the impact of health on

reducing poverty and economic growth of each country, because the wealth of a poor individual is his body and losing health leads him to more poverty which consequently increases poverty of the community and reduces the economic growth of the country¹. Currently, it is considered to use QOL assessment as one of the best ways to measure the impact of diseases on human health. Today, life without disability is paid attention to, as an important indicator in evaluating the effect of injuries and diseases on life^{2,3}.

QOL means a personal understanding of one's own life position in the culture and the environment which he or

she lives in and is associated with his goals, expectations and concerns; it is also a range of human needs achieved in relation to personal feeling of well-being^{4,5}. What is clear and accepted by all scholars in the field of life satisfaction is the feeling of health and well-being by which a person can be creative⁶. Studies show that poor people of a rich society have even a lower QOL and a lower health level compared with the average of the poor societies, and more disadvantaged groups have a shorter life and a lower QOL; however, social determinants of health play a significant role in the development of QOL changes¹. It is observed that individuals who are in a higher economic level at the beginning of childhood, have a better health status; there are more subjective indicators in this field than objective⁷. All studies on health disparities indicate the effect of socioeconomic factors on health. Socioeconomically disadvantaged groups clearly experience a higher mortality and a poorer mental health⁸⁻¹³. It is estimated that the overall burden of the diseases is associated with income. The relation between income and life expectancy as well as life expectancy matched with health level and lost years of life has been found¹⁴. Socioeconomic state might have the greatest impact on health. The mortality for the individuals with an income below the poverty line is twice of those with income above the poverty line; however, the effect of these determinants can be positive or negative¹⁵. Health status questionnaires, measuring a person's ideas (comments) about his health and widely used in clinical trials and health monitoring, have also been used in this field¹⁶⁻¹⁸. According to the published articles, SF-36 is one of the tools already translated to Persian and the validity and reliability of the Persian version has been confirmed^{18,19}. This questionnaire in fact, measures health-related QOL in 8 scales and the studies in Iran in which the questionnaire was conducted, indicated the Persian version of this questionnaire to be practical, reliable and valid to measure QOL. It is also seen that the answers obtained through face to face interview using the questionnaire encounter more biases than when the completed questionnaire is sent by mail¹⁶. Similar questionnaires are available, such as SF-12 which is a summarized version of SF-36 providing the same information²⁰. Other questionnaires like SF-6D and EQ-5D are also used to investigate in various social

and clinical groups^{21,22}. Observing changes in QOL is useful in decision and policy making. Planning to promote poor individuals' health level requires sufficient information about different aspects of their QOL²³; as a result, this study aimed to evaluate the poor's QOL and compare it with the same aged group in order to realize the aspects of QOL which are more affected by poverty and needs more attention and planning.

Materials and Methods

In a retrospective cohort study in the district 4 of Tehran municipality, QOL of 200 poor individuals over 60 years old under the coverage of a public charitable institution (group 1) was compared with ordinary individuals (group 2) using SF-36 questionnaire. The level of the QOL of the study population was investigated in a 9-months period using a standardized SF-36 questionnaire including two main parts. The first part consisted of demographic questions such as age, sex, occupation, marital status and education level while the other part included all questions available in SF-36 questionnaire which has already been translated into Persian and the validity and the reliability was approved by the Institute of Health Science Research, ACECR 18. This questionnaire is one of the most important questionnaires used to assess QOL of healthy individuals and also patients with chronic diseases, for which validity and reliability is confirmed by researchers. The questionnaire, in fact, measures health-related QOL in 8 scales including 36 questions consisting of two general questions about health status, 10 questions about daily physical activity, 4 questions about physical problems of patients and 3 questions about the effects of psychological problems caused by disease. There are: one question about the presence of pain and its impact on daily activities, 4 questions about people's perception of their health, 9 questions about personal feeling regarding the environment and one question about the effect of physical and psychological problems caused by disease on people's social relations. This tool has two summarized combinations obtained from merging the scales as follows: Physical Component Scale (PCS) (physical functioning+ physical pain+ role limitation due to

physical problem+ general health). Mental Component Scale (MCS) (social functioning+ mental health+ vivacity+ role limitation due psychological problems) Enough information about the method and the aim of the study was provided to the participants. After gathering, data was analyzed in SPSS using parametric (t test) and non-parametric (Mann-Whitney) statistical methods and regression analysis for SF-36 questions in the poor and the control groups. Group 1 consisted of the individuals under the coverage of a charitable institution in the district 4 of Tehran municipality while ordinary people living in different geographical regions of the district 4 of Tehran municipality included the control group who were selected through a random sampling from 4 public parks in the district 4 of Tehran. The inclusion criteria for the cases was all people over 60 years old under the coverage of the charitable institution in the district 4 and for the control group all ordinary people living in the district 4 who were not under the coverage of the institution. Individuals who were not living in the district or did not desire to answer the questions during the investigation were excluded from the study. Due to asymmetric distribution of scores of QOL measurement, data analysis was performed using Mann-Whitney and Kruskal-Wallis statistical methods for the measures of QOL. Regression analysis was performed as well in which PCS and MCS were divided into two groups based on the mean score. Those above the mean score were considered as the favorable group and those below the mean score as unfavorable group. This score was the dependent variable while age, sex, education level, marital status were entered into the analysis as independent variables in order to measure the risk and the odds ratio.

Results

Chi-square test and t-test used to evaluate the significance of difference in the demographic characteristics examining age, sex, education level, marital status and occupation showed that except for sex, in the other demographic characteristics significant differences were seen between the two groups (table 1). About the measures of QOL and the comparison between the cases and controls, Mann-Whitney showed that individuals in group 1 had a

lower mean score in all measures of QOL and there were significant differences between the two groups in all measures of QOL in SF-36, except for PCS and MCS ($P < 0.001$) (table 2).

Table 1: The frequency distribution of the study population regarding the demographic characteristics.

		Group 1 No (%)	Group 2 No (%)	P*
Age	Mean(sd)	70.56 (8.65)	65.8 (5.26)	0.0001
	Sex			
	Male	62 (31%)	75 (37.5%)	
	Female	38 (69%)	125 (62.5%)	
Education level				0.0001
	Illiterate/undereducated	196 (98%)	84 (42%)	
	High school/college	4 (2%)	16 (58%)	
Marital status				0.0001
	Married	131 (65.5%)	26 (13%)	
	Death of spouse/ separation	69 (34.5%)	174 (87%)	
Occupation				0.0001
	Employed	1 (0.5%)	66 (36.1%)	
	Unemployed	193 (99.5%)	117 (63.9%)	

*P-values are obtained from chi-square test for stratified data and from t-test for continuous data.

Table 2: The mean and standard deviation of the QOL measures separately for each group by Mann-Whitney statistical test.

	Group 1 Mean (sd)	Group 2 Mean (sd)	P*
Physical functioning	29.78 (29.71)	65.10 (18.5)	0.0001
Role limitation due to physical problems	21.75 (28.93)	52.12 (41.46)	<0.0001
Physical pain	28.74 (27.12)	58.62 (20.18)	0.0001
General health	35.40 (18.40)	57.34 (18.13)	0.62
Vivacity	34.45 (22.75)	59.45 (16.89)	0.0001
Social functioning	34.88 (23.16)	71.75 (19.42)	0.0001
Role limitation due to psychological problems	24.83 (30.62)	58.83 (43.31)	<0.001
Mental health	43.68 (19.68)	68.92 (18.37)	0.101

*P-values are obtained from t-test.

Regarding the adverse consequence of PCS in logistic regression, there were significant associations between the two groups in the demographic characteristics, except for age and marital status. About the adverse consequence of MCS, logistic regression showed significant differences between the two groups in the all demographic characteristics, except for age.

Table 3: Results of logistic regression for adverse outcome of PCS.

		OR (95% CI)	P
Age		0.99 (0.95-1.03)	0.661
Sex			0.005
	Male	1.00 (ref.)	
	Female	2.6 (1.3-5.3)	
Education level			0.0001
	High school/college	1.00 (ref.)	
	Illiterate/undereducated	0.36 (0.26-0.5)	
Marital status			0.226
	Married	1.00 (ref.)	
	Single/widow	1.48 (0.78-2.8)	
Occupation			0.01
	Employed	1.00 (ref.)	
	Unemployed	3.15 (1.3-7.6)	
Economic state			0.0001
	Normal	1.00 (ref.)	
	Disadvantaged	10.6 (6.7-16.9)	

Table 4: The results of logistic regression for the adverse outcome of MCS.

		OR (95% CI)	P
Age		0.99 (0.94-1.02)	0.41
Sex			0.0001
	Male	1.00 (ref.)	
	Female	4.31 (2.1-8.86)	
Education level			0.0001
	High school	1.00 (ref.)	
	Illiterate/undereducated	0.49 (0.36-0.7)	
Marital status			0.0001
	Married	1.00 (ref.)	
	Single/widow	11.6 (3.8-34.8)	
Economic state			0.0001
	Normal	1.00 (ref.)	
	Disadvantaged	15.1 (9.3-24.9)	

Discussion

In the present study, group 1 obtained lower scores in many of the aspects studied and inequality in health highly reflected inequality in determinants of health including age, education level, sex, marital status and occupation. In our study, there were significant differences between the poor group and the controls in the demographic characteristics regarding education level, occupation and marital status; however, it is

observed that sustainable difference in socioeconomic state leads to a weaker cognitive and psychological performance²⁴. Socioeconomic state is determined by measuring the level of education, income, occupation as well as a combination of these factors, and a correlation was also seen between education and income^{25, 26}. Inequality in determinants of health is important in people's QOL which has since been worked on a little. It is clear that the poor countries have a lower outcome and a worse prognosis of health in which differences in education level and mental state is evident²⁴. In another study, it was found that the elderly in Tehran are in a poor situation which is more obvious in the female. Good economic state and social support should be considered as the basis in social determinants of health^{27, 28}. People in the top 5% of income live 25% longer; income increase is associated with the same decline in mortality²⁹. Qualitative methods are used to measure issues related to economy such as financial state. Both qualitative and quantitative methods have their places in social analysis³⁰. The impact of income inequality on mortality is great and after adjusting for income, it was recognized that income distribution and inequality in income distribution are important in health; however, the effect of social gradient on health is clear as well. It is interesting that poverty in the neighborhood is associated with poor health of the individuals³¹⁻³⁴. Individuals' living place especially outdoors surrounding the elderly plays an important role in maintaining and improving QOL of people especially the older ones; these environments are influenced by the individuals' income level³⁵. In a study by Adam Wag's staff in the bulletin of the World Health Organization in 2002, it was indicated that poor countries seemed to have a worse prognosis of health. Disease itself has an obvious negative effect on family income because it will be accompanied with costs for providing health services. But there are few works on the importance of inequality in health determinants on health. What we know suggests that inequality in health highly reflects inequality in determinants of health in levels of individuals and family³⁶. Generally, living in diverse areas affects QOL and diseases courses which are getting worse; this indicates that we still have not achieved nations' target which is planning

to reach a healthy society³⁷. In a study by Bazazian and Rajaei in Abhar Azad University in 2007 in which the relation between the indicators of socioeconomic state (income, education level and occupation) and physical and mental health was evaluate, 150 participants including farmers, academics and other professions participated in the study. Data were analyzed by multivariate analysis showing the obvious impacts of occupation and income on the mental health state. Also, mental health showed differences between the male and the female but physical health did not²³. In the study by Dr. Montazeri and Dr. Vahdaninia in Tehran in 2006-2007 on socioeconomic origin and level, differences in the incidence and the prevalence rate of health problems in different socioeconomic states were seen. But according to the authors' opinion, the data needs further studies to monitor health inequality³. As sufficient information about different aspects of the poor's QOL is required to promote their health level, the present study aimed to evaluate the QOL of poor individuals and compare it with the same-aged group to find the aspects of QOL which are most affected by poverty. This study provided a field for further investigations on the social determinants of health.

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