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# Investigation of the quality of life of patients with hypertension in health centers

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## Abstract:

**INTRODUCTION:** Hypertension is one of the most critical factors for chronic diseases such as cardiovascular disease, stroke, arrhythmias, heart failure, and renal disease. The aim of this study was to evaluate the quality of life and its related factors in hypertensive patients.

**MATERIALS AND METHODS:** This study was descriptive research. The sampling method was simple random, i.e., 137 were selected among the ten health centers of the list of the existing patients by simple random sampling. Data were collected using a questionnaire World Health Organization Quality of Life-BREF (Short Form-26). After collecting the questionnaires, the data analysis was carried out using SPSS software and using statistical methods (e.g., number, percentage, mean, standard deviation, and MANOVA tests).

**RESULTS:** The results showed that the mean score for the physical domain (52.82), the psychological domain (50.26), the social domain (48.33), the environmental domain (46.1), and the total quality of life (49.60). Among the demographic variables, the education level variable ( $P=0.000$ ), job ( $P=0.013$ ), and the duration of hypertension ( $P=0.039$ ) were significantly correlated with the quality of life of patients. The "levels of education" variables are significantly correlated with the physical domain ( $P=0.000$ ), psychological domain ( $P=0.000$ ), social domain ( $P=0.000$ ), and environmental domain ( $P=0.000$ ) of the quality of life. The "job status" variable is only significantly correlated with the social domain of the quality of life ( $P=0.005$ ). The "duration of hypertension" variable is only significantly associated with the physical domain of the quality of life ( $P=0.011$ ).

**CONCLUSION:** The findings of the present study show that demographic variables such as educational level, occupation, and duration of hypertension have a significant relationship with the quality of life domains of hypertensive patients. It is recommended that the principled education of patients is a step toward the improvement of the quality of life of patients.

## Keywords:

Blood pressure, hypertension, quality of life

## Introduction

Hypertension is one of the most critical factors for chronic diseases such as cardiovascular disease, stroke, arrhythmias, heart failure, and renal disease<sup>[1]</sup> which is defined as a systolic blood pressure of 140 mmHg or more and a diastolic blood pressure of 90 mmHg or more<sup>[2,3]</sup> and is the first factor of premature death and failure among all causes of death

in the world.<sup>[4]</sup> It is a common disease without any symptoms, and a person may have hypertension for years without knowing that he/she has a blood pressure.<sup>[5]</sup> Recent studies have estimated the general prevalence of hypertension in Iran by 22%, and evidence suggests a growing trend in Iran.<sup>[6,7]</sup> Hypertension has hit about 50 million Americans and more than 600 million people around the world. It is also the most common cause of adult visits to doctors.<sup>[8]</sup> Hypertension is the cause of 45% of myocardial infarction, 51% of

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stroke deaths, and 9.5 million deaths annually, and it is predicted that hypertension will account for one-fourth of all deaths by 2030.<sup>[9,10]</sup> The annual cost of hypertension in the US is \$ 46 billion, including health-care costs, drugs for treatment, and working days lost.<sup>[11-13]</sup> Like most chronic diseases, hypertension is closely associated with lifestyle, mental health, and quality of life of patients, and if it is not controlled on-time and appropriately, it will cause various diseases, significant disabilities, reduction of productivity, and ultimately reduction of the quality of people's lives.<sup>[14-18]</sup> The study of Ebadi *et al.*<sup>[19]</sup> and Shamsi *et al.*<sup>[20]</sup> showed that the total score of quality of life in healthy individuals was higher than hypertensive patients. Recently, one of the main essential goals of the country's health system has been to improve the quality of life.<sup>[21-23]</sup> In recent years, interest in the assessment and improvement of the quality of life of patients with chronic diseases has increased significantly so that the improvement of the daily performance and quality of life of patients with chronic illness has become a goal.<sup>[24]</sup> According to the World Health Organization (WHO), the quality of life is people's understanding of living in the form of culture and values prevailing in the society and is in line with individual goals, standards, expectations, and interests. In other words, the quality of life is a logical process and a concept based on culture, which demonstrates a summary of values, beliefs, symbols, and experiences formed by that culture and provides a way of knowing and understanding human conditions and experiences in life.<sup>[25]</sup> Given that high blood pressure in people causes severe dietary restrictions, changes in daily activities and recreational activities, and high stress on the sick, this can negatively affect the quality of life of the patient. Therefore, the present study was conducted to evaluate the quality of life in hypertensive patients in Mahdasht health centers in Karaj to determine the factors affecting the quality of life in hypertensive patients.

## Materials and Methods

This study was descriptive research carried out to study the quality of life of patients with hypertension in hypertensive patients in Mahdasht health centers in Karaj, Iran. According to contextual studies and previous investigations as well as using the corresponding statistical formula, the sample size was determined to be 118 people. Given 10% of the additional sample size related to the sample loss, the total sample size was estimated to be 130 people. The sampling method was simple random, i.e., 137 were selected among the ten health centers of the list of existing patients by simple random sampling. Inclusion criteria included willingness to participate in the study, having at least 1 year of history of hypertension, and no diabetes and exclusion criteria included incomplete completion of questionnaires, in the acute and severe stages of the disease (hypertensive

emergency), data were collected using a questionnaire in which two questionnaires were used for research purposes. The first questionnaire was a demographic profile questionnaire which used one item to determine demographic variables such as gender, age, job, education, marital status, family history of the disease, and year of the disease. The second questionnaire was WHO Quality of Life-BREF (Short Form-26), which was a 26-item questionnaire that measured four aspects, for example, physical health, psychological health, social relationships, and environmental health with 24 items. Each of the areas of quality of life had 7, 6, 3, and 8 items, and two questions did not belong to either of the areas and evaluated the state of health and quality of life in general. The questionnaire was in the form of a 5-point Likert scale. The reliability and validity of the quality of life questionnaire were confirmed with correlation and Cronbach's alpha values  $>0.7$ .<sup>[26]</sup> The project was implemented as follows: first, the researcher gets a letter of introduction from the Iran University of Medical Sciences (IUMS). Then, after going to Alborz University of Medical Sciences and obtaining a license, he shows up in the health centers of the city. Afterward, he explains the research purpose to the patients. Then, after obtaining their informed consent, patients were asked to complete the questionnaires.

## Statistical analysis

After collecting the questionnaires, the data analysis was carried out using SPSS software version 21 (IBM Corporation, Armonk, NY, USA) and using statistical methods (e.g., number, percentage, mean, standard deviation, and MANOVA tests).

## Ethical considerations

The following ethical issues were considered in the present research. First, the ethics code of IR.IUMS.REC 1395.9321108003 was approved by the Faculty of Health of IUMS. The required permissions were gained from the health network organization. The research patients were assured about the confidentiality of the study data. They were informed about the study objectives and were allowed to enter or exit the research at will. Proper conditions were provided for comprehending the content and patients' responses.

## Results

In the present study, a total of 137 individuals were sampled whose demographic characteristics are observed in Table 1. The results of Table 1 showed that the number of males (62.04) is higher than females (37.95). In the study, 100% of the people were married and only 6.59% had higher education. In terms of job status, nearly 60% of people were self-employed and housekeeper and 56.93% of individuals had a family history of hypertension. Furthermore, the average age

**Table 1: Demographic characteristics of hypertensive patients based on gender, marital status, education level, occupation, and family history of hypertension**

Demographic variables	Frequency (%)
Gender	
Male	85 (62.04)
Women	52 (37.95)
Total	137 (100)
Marital status	
Single	0 (0)
Married	137 (100)
Total	137 (100)
Level of education	
Illiterate	41 (29.92)
Elementary	31 (22.62)
Guidance	31 (22.62)
High school	25 (18.24)
University	9 (6.59)
Total	137 (100)
Job	
Unemployed	12 (8.75)
Housekeeper	44 (32.11)
Worker	21 (15.32)
Self-employed	37 (27.00)
Employee	6 (4.37)
Retired	17 (12.40)
Total	137 (100)
Family history of hypertension	
Yes	78 (56.93)
No	59 (43.06)
Total	137 (100)

of patients was 52.62 years, and the mean duration of hypertension in the subjects was 3.78 years.

The results of Table 2 showed the mean percentage of the maximum score for physical domain (52.82), psychological domain (50.26), social domain (48.33), environmental domain (46.1), and total quality of life (49.60).

In Table 3, multivariate tests showed that among the demographic variables, the education level variable ( $P = 0.000$ ), job ( $P = 0.013$ ), and the duration of hypertension ( $P = 0.039$ ) were significantly correlated with the quality of life of patients.

In Table 4, univariate *post hoc* analysis using multiple regression showed that the "levels of education" variable were significantly correlated with the physical domain ( $P = 0.000$ ), psychological domain ( $P = 0.000$ ), social domain ( $P = 0.000$ ), and environmental domain ( $P = 0.000$ ) of the quality of life. The "job status" variable was only significantly correlated with the social domain of the quality of life ( $P = 0.005$ ). The "duration of hypertension" variable was only significantly associated with the physical domain of the quality of life ( $P = 0.011$ ).

## Discussion

The aim of this study was to evaluate the quality of life and its related factors in hypertensive patients in Mahdasht health centers in Karaj, Iran. Findings associated with demographic variables in this study show that the number of male patients was more than female, which was consistent with the study of Mesror Rodsary *et al.*<sup>[27]</sup> However, in Khezri *et al.*'s<sup>[28]</sup> research and Heidari and Shahbazi's<sup>[29]</sup> study, female participants were more than male participants. There was no significant relationship between gender and quality of life in the present study, which was in line with the study of Mesror Rodsary *et al.*,<sup>[27]</sup> however, it was inconsistent with the study of Carrasco Garrido *et al.* Carrasco Garrido *et al.* found that gender is one of the factors affecting the quality of life, and females have lower levels of quality of life than males in both physical and psychological dimensions.<sup>[30]</sup> In the present study, there was a significant relationship between the levels of education and the quality of life. The higher the level of education, the higher the quality of life scores of individuals. The results were consistent with the studies of Mesror Rodsary *et al.*<sup>[27]</sup> and Shams *et al.*,<sup>[31]</sup> however, they were inconsistent with the study of Nabavi *et al.*<sup>[32]</sup> Moreover, the study of Shabany *et al.* was not in accordance with the present results, i.e., there was no significant relationship between the levels of education and the quality of life.<sup>[33]</sup> This lack of connection was due to the illiteracy, different cultures, and ethnicities of most of his research units. In the present study, all individuals were married. A majority of the participants in the studies of Khezri *et al.*<sup>[28]</sup> and Heidari and Shahbazi<sup>[29]</sup> were married. In this study, there was a significant relationship between the quality of life in patients with hypertension and job, which was consistent with the studies of Mesror Rodsary *et al.*<sup>[27]</sup> and Bairami *et al.*<sup>[21]</sup>

However, in the study of Shabany *et al.*, there was no relationship between employment status and quality of life.<sup>[33]</sup> This lack of connection may be due to the inactivity of most of his research units. In the present study, 56.93% of patients had a family history of hypertension, which was in line with the study of Bairami *et al.*<sup>[21]</sup> In the study of Eftekhari Ardebili *et al.*, 60% of the individuals in the intervention group and 47.4% of the individuals in the control group had a history of hypertension in the first-degree relatives.<sup>[34]</sup> Based on the findings of the present study regarding the quality of life of patients with hypertension, the mean overall score of the quality of life was moderate and weak (49.60), which was in agreement with the studies of Eftekhari Ardebili *et al.*,<sup>[34]</sup> Mesror Rodsary *et al.*,<sup>[27]</sup> and Mohalli *et al.*<sup>[35]</sup> The results of these studies showed that the overall score of the quality of life in these patients was moderate. Moreover, the results of the study of Trevisol *et al.* showed that the

**Table 2: Mean score of quality of life in hypertensive patients**

Variable	Mean	Mean percentage of maximum score	SE	95% CI
Physical quality of life	18.49	52.82	0.198	18.10-18.89
Psychological quality of life	15.08	50.26	0.164	14.76-15.41
Social quality of life	7.25	48.33	0.114	7.02-7.47
Environmental quality of life	18.44	46.1	0.263	17.92-18.96
Total quality of life	64.49	49.60	0.691	63.13-65.86

CI: Confidence interval, SE: Standard error

**Table 3: The results of multivariate regression test (MANOVA) for variables of gender, levels of education, job, history of hypertension, and the duration of hypertension to communicate with life quality in patients with hypertension**

Demographic variables	F	Wilks lambda	Hypothesis df	Error df	P
Gender	1.26	0.956	4.00	111.00	0.289
Levels of education	9.47	0.324	16.00	339.74	0.000
Job	1.87	0.726	20.00	369.09	0.013
Family history of hypertension	1.18	0.959	4.00	111.00	0.322
Duration of hypertension	1.43	0.589	44.00	426.61	0.039

DF: Degrees of freedom

**Table 4: The results of the univariate potshot test by using multiple regression for variables of gender, levels of education, job, History of hypertension, and the duration of hypertension to communicate with life quality in patients with hypertension**

Demographic variables	Quality of life domains	F	P
Levels of education	Physical domain	9.62	0.000
	Psychological domain	29.02	0.000
	Social domain	23.72	0.000
	Environmental domain	31.88	0.000
Job status	Physical domain	1.92	0.096
	Psychological domain	1.06	0.381
	Social domain	3.52	0.005
	Environmental domain	0.250	0.939
Duration of hypertension	Physical domain	2.37	0.011
	Psychological domain	1.01	0.435
	Social domain	0.940	0.505
	Environmental domain	0.482	0.911

status of all aspects of the quality of life in patients with hypertension was below average and undesirable.<sup>[36]</sup>

On the contrary, in their study, Gusmão *et al.* found that the scores of the quality of life of patients were high, suggesting that antihypertensive therapy had little or no adverse effects on the quality of life of patients. According to the researchers of the study, it was probably because of a low number of side effects of modern antihypertensive drugs.<sup>[37]</sup> The results of this study showed that among the four domains of the quality of life, physical health and environmental health domains had the highest and the lowest score, respectively. In a study by Rimaz *et al.* on the quality of life of the head of household women, the environmental health had the lowest quality of life score; however, the highest quality of life score was associated with the "social relation" domain.<sup>[38]</sup> In a study by Ebadi

*et al.* entitled "the comparison of the quality of life of hypertensive male patients with healthy individuals," they used the Short Form-36 questionnaire, and the quality of life score associated with the physical health dimension was higher in both the groups of healthy individuals and hypertensive patients than the psychological health score.<sup>[39]</sup> Furthermore, Hadi and Malek and Ziapour and Kianipour reported similar results.<sup>[40,41]</sup> Limitations of this study included self-reporting and low sample size. Given that in this study, the quality of life status of patients with hypertension was not acceptable, it is suggested that researchers promote the quality of life of patients with hypertension using educational models.

## Conclusion

The results of this study showed that the quality of life of patients with hypertension is moderate and undesirable. Among demographic variables, educational level, occupation, and duration of hypertension were the most correlated with patients' quality of life. Among these demographic variables, the level of education had a significant relationship with all domains of quality of life. It is recommended that the principled education of patients is a step toward the improvement of the quality of life of patients.

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## Conflicts of interest

There are no conflicts of interest.

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