

Health-related quality of life and related factors among members of family medicine teams at Kerman University of Medical Sciences, Iran

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Abstract

Background: Different factors affect the health care workers' health and quality of life which lead to reduced performance, quality, and safety of services provided. The present study aimed to evaluate health-related quality of life (HRQoL) and its related factors among members of family medicine teams (FMTs).

Methods: A cross-sectional descriptive study was carried out in the winter of 2015. Using SF36 questionnaire, HRQoL of all FMTs (physicians, midwives, and health technicians) at Kerman University of Medical Sciences was evaluated. Data were analyzed using Independent T test, ANOVA, Pearson Correlation coefficient, and multiple linear regression in IBM SPSS Statistics for Windows, Version 22.0.

Results: Mean (SD) of total HRQoL score in FMTs was 71.6 (12.3) (out of 100). The Means (SD) of Physical Component Summary (PCS) and Mental Component Summary (MCS) scores were 75.1(14.3) and 68.0 (14.2), respectively. Also, there was a positive correlation ($r=0.49$) between the PCS and MCS ($P<0.001$). Multivariate linear regression analysis showed that work experience was a predictor for total HRQoL ($P<0.001$) and PCS ($P<0.001$), while marital status was a predictor variable for MCS ($P=0.04$).

Conclusion: The results of the current study revealed that HRQoL, particularly the MCS, is not at an appropriate level among FMTs. Therefore, it is necessary to design and implement interventions in order to increase their quality of life, especially with focus on mental aspect.

Keywords: Mental health; Health care workers; Physical health; Physicians; Quality of Life

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Introduction

According to the definition provided by World Health Organization, health is a state of complete physical, mental, and social well-being (1). Therefore, in measuring and evaluating health care interventions, alongside traditional health indicators like mortality and morbidity, other indicators such as Quality of Life

(QoL) should also be noted. The QoL is so important a concept that the present century is tagged as the era of improved QoL and not merely to survival (1, 2).

In their work places, health care workers suffer from various adverse factors such as job stress, high workload, problems of patients, organizational and managerial

challenges, and inadequate professional skills. These factors have adverse effects on their QoL and health conditions (3-5). Decline in health care workers' QoL can lead to reduced professional performance, quality, and safety of health care services provided by them to the patients (1, 2, 6). Health related quality of life (HRQoL) includes functioning and well-being of physical, mental and social aspects of life. In fact, HRQoL is associated with happiness and personal satisfaction in different aspects of life that affects health or is influenced by health (1, 6). HRQoL is a method of assessing the health consequences, and it is employed as an important measuring indicator of health outcomes in healthy populations, like the health sector staff (2, 4).

Since 2005, the family medicine program has been carried out in Iran in rural areas and towns with populations less than 20,000 people (7). Members of the family medicine teams (FMTs) in health care centers include physicians as team managers, midwives, and health technicians (8). The FMT is the first line of contact with community and coordinate health care services in the health system (8,9). The FMTs mainly provide primary health care to the defined population, in cooperation with other staff playing a key role in the health care system of Iran (7-10). The results of studies in different countries showed that the QoL of physicians and other health care workers was unsatisfactory (5, 11-15). The aims of the present study were to evaluate the HRQoL and its related factors among FMTs of health centers affiliated to Kerman University of Medical Sciences in Iran.

Methods

The present cross-sectional descriptive study was carried out in the winter of 2015 in Kerman. Kerman province is located in the south east of Iran, with a population of more than 3 million. Health care services in three different levels are provided to approximately 1.7 million of the population

by Kerman University of Medical Sciences. Primary health cares are the most important health services which are provided in health centers. At the beginning of the study, there were 85 FMTs in Kerman University of Medical Sciences. The study population included all FMTs including physicians, midwives, and health technicians in health centers affiliated to Kerman University of Medical Sciences. FMTs with at least one-year work experience in family medicine program were enrolled in the study.

SF36 standard questionnaire was used to evaluate HRQoL. This questionnaire consists of 36 questions that measure the HRQoL in eight subscales, including physical functioning (PF), role limitations due to physical problems (RP), bodily pain (BP), general health (GH), vitality (VT), social functioning (SF), role limitations due to emotional problems (RE), and mental health (MH). The four subscales of PF, RP, BP, and GH were measured together as physical component summary (PCS). In addition, four subscales of VT, SF, RE, and MH were measured as mental component summary (MCS) (16). Items on this questionnaire evaluate the positive and negative aspects of health and according to the questionnaire guide, the different aspects were scored on a scale of 0 to 100. Score zero indicates the worst quality of life while score 100 indicates the best quality of life (17). Two studies in Iran have confirmed the validity and reliability (Cronbach's $\alpha = 0.7$) of the questionnaire for Iranian version (17, 18). In addition, demographic and work related data such as age, gender, marital status, work experience as well as place of work and job category were collected. Filling out the questionnaire was completely anonymous. The FMTs were enrolled based on their willingness to participate in the study. The questionnaires were administered among the team members and the completed questionnaires were collected. The questionnaires with more than 10% incomplete data were excluded from the study, while the remaining data were fed into IBM

SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp. The results were presented based on descriptive statistics using mean, standard deviation. To analyze the data, independent t-test, ANOVA, Pearson correlation coefficient and multiple regression analysis were used. The level of statistical significance was set at 0.05.

Results

A total of 204 FMTs including physicians (31.4%), midwives (33.3%) and health technicians (35.3%) participated in the study; 81.9% of the participants were women and 71.9% were married. The mean (SD) of age, total work experience, and work experience in family medicine team were 33.1 (6.9), 8.5 (6.9), and 5.9 (3.1) years, respectively. More than four fifth (80.4%) of the participants' work place was rural health centers while the resident place for more than half (53.9%) was in the cities. Over half of the participants (51%) had the contract without residence, and this implies that in every workday, they worked in either morning or evening shifts (Table 1). The mean (SD) of HRQoL score in FMTs was 71.6 (12.3) (out of 100). Also, the mean (SD) scores of PCS and MCS were 75.1 (12.3) and 68.0 (14.2), respectively. There was a positive correlation between PCS and MCS scores ($r=0.49$) which was

statistically significant ($P=0.01$). Table 2 shows the direct correlations between the scores of PCS with four subscales of MCS among which VT subscale has the highest correlation ($r=0.47$). In addition, there were positive correlations between the MCS and different subscales of PCS with the highest correlation coefficient found between the MCS and BP subscale ($r=0.48$). Moreover, there were positive correlations between all subscales of HRQoL, except for two subscales of PF with MH (Table 2).

Comparison of the means of HRQoL scores regarding job categories revealed a significant difference ($P<0.001$). In addition, the mean of HRQoL score for midwives (mean=74.6) was significantly higher than that for health technicians (mean=68.3) ($P<0.001$) while there was no statistically significant difference between the means of HRQoL score for physicians and that of other job categories. The mean of HRQoL score for FMTs who lived in the cities was significantly higher than that for those who lived in the villages ($P<0.001$). Moreover, the mean HRQoL score in FMTs who had contract without residence was more than those who had a contract with residence ($P=0.01$). The mean of HRQoL score in terms of gender, marital status, and place of work showed no statistically significant differences (Table 3).

Table 1. Participants' individual and job characteristics

Variable		N (%)
Sex	Female	167 (81.9)
	Male	37 (18.1)
Marital status	Married	163 (71.9)
	Single	41 (20.1)
Job category	Physician	64 (31.4)
	Midwife	68 (33.3)
	Health technician	72 (35.3)
Resident place	City	110 (53.9)
	Village	94 (46.1)
Work place	Rural health center	164 (80.4)
	Urban health center	40 (19.6)
Contract type	With residence	104 (51)
	Without residence	100 (49)

The mean score of PCS in single participants ($P<0.001$) and those who lived in the cities ($P=0.004$), as well as those who had the contract without residence ($P=0.01$) were higher than their corresponding groups. The mean PCS score in terms of job category demonstrated a statistically significant difference ($P<0.001$) such that the mean scores of physicians ($P=0.03$) and midwives ($P=0.002$) were significantly higher than that for health technicians. The mean PCS scores in terms of gender and workplace were not significantly different. The mean score of MCS for married participants was significantly higher than that of single participants ($P=0.04$). The comparisons of the mean scores of MCS in terms of other independent variables did not yield a significant difference either (Table 3).

There was an indirect correlation between age and PCS ($r=-0.12$, $P<0.001$) while no significant correlation was observed between age with HRQoL and age with MCS. There were statistically significant indirect correlations between the overall years of work experience with HRQoL ($r=-0.15$) and overall years of work experience with PCS ($r=-0.27$), while the work

experience had no significant correlation with MCS. The work experience in FMTs had a significant indirect correlation with PCM score ($r=-0.23$) while it demonstrated no significant correlation with HRQoL and MCS.

There was a significant negative correlation between age and PF ($r=-0.59$), while no significant correlation was observed between age and other subscales. Also, there were negative correlations between work experience and subscales of PF ($r=-0.55$), RP ($r=-0.16$), and BP ($r=-0.20$). The correlations between work experiences and other subscales were not found to be significant, either.

A multivariate linear regression analysis showed that work experience was independently associated with HRQoL and PCS. The negative coefficients showed that the total HRQoL and PCS scores decrease with increasing work experience. In MCS regression model, marital status variable was a predicting variable ($P=0.04$). The coefficient of 4.89 in the regression model showed that the MCS in married people was considerably higher than that of single people (Table 5).

Table 2. Correlation coefficient between different subscales of quality of life in the participants

Variable	MCS	PF	RP	BP	GH	MH	RE	SF	VT
PCS	0.491 ^{†*}	0.568**	0.735**	0.855**	0.603**	0.333**	0.343**	0.389**	0.479**
MCS	1	0.279**	0.408**	0.489**	0.444**	0.698**	0.764**	0.557**	0.718**
PF	-	1	0.313**	0.425**	0.262**	0.110	0.149*	0.314**	0.158*
RP	-	-	1	0.515**	0.215*	0.192*	0.298**	0.178*	0.350**
BP	-	-	-	1	0.357**	0.248**	0.289**	0.306**	0.408**
GH	-	-	-	-	1	0.416**	0.199*	0.338**	0.414**
MH	-	-	-	-	-	1	0.313**	0.235**	0.673**
RE	-	-	-	-	-	-	1	0.197*	0.271**
SF	-	-	-	-	-	-	-	1	0.298**

Abbreviations: PCS, physical component summery; MCS, mental component summery; PF; physical functioning; RP, role limitations due to physical problems; BP, bodily pain; GH, general health; MH, mental health; RE, role limitations due to emotional problems; SF, social functioning; VT, vitality;

* $P<0.05$, ** $P<0.001$

Table 3. Comparison of the mean scores of PCS, MCS, and total HRQoL in terms of independent variables

Variable		HR-QoL	PSC	MSC
Sex	Female	72.2 ± 11.4	75.45 ± 12.97	69.0 ± 13.3
	Male	71.5 ± 12.5	75.1 ± 14.6	68.0 ± 14.4
	<i>P</i> *	0.75	0.89	0.68
Marital status	Single	72.4 ± 11.1	80.6 ± 10.4	64.2 ± 17.3
	Married	71.4 ± 12.6	73.7 ± 14.8	69.1 ± 13.1
	<i>P</i> *	0.64	0.00	0.04
Job category	Physician	72.3 ± 14.5	76.6 ± 16.8	68.1 ± 17.5
	Midwife	74.6 ± 11.6	78.6 ± 13.8	70.7 ± 11.8
	Health technician	68.2 ± 9.9	70.6 ± 10.8	65.8 ± 12.6
	<i>P</i> **	0.00	0.00	0.12
Work place	Urban health center	70.1 ± 13.5	72.8 ± 18.1	67.5 ± 12.2
	Rural health center	72.0 ± 12.0	75.7 ± 13.2	68.3 ± 14.6
	<i>P</i> *	0.68	0.25	0.74
Resident place	City	73.7 ± 13.1	77.8 ± 15.8	69.7 ± 13.0
	Village	69.2 ± 10.8	72.0 ± 11.5	66.4 ± 15.3
	<i>P</i> *	0.00	0.00	0.09
Contract type	With residence	69.6 ± 11.4	72.6 ± 12.7	66.6 ± 14.5
	Without residence	73.8 ± 12.8	77.7 ± 15.3	69.8 ± 13.7
	<i>P</i> *	0.01	0.01	0.10

*t test, **ANOVA

Table 4. The correlation coefficients of total QL, PCS, and MCS with age, overall work experience, and work experience in family medicine team in the participants

Variable	HR-QoL	PSC	MSC
Age	-0.122	-0.227*	-0.038
Total work experience	-0.156*	-0.272**	-0.058
Work experience in family medicine team	-0.126	-0.238**	-0.047

P*<0.05, *P*<0.001

Table 5. Linear regression analysis of the total QoL, PCS, and MCS scores with independent variables

Dependent variable	Independent variable	R ²	β	t	P
THR-QoL	Total work experience	0.031	-0.33	-2.72	0.007
	Constant		74.53	55.37	<0.001
PCS	Total work experience	0.056	-0.50	-3.67	<0.001
	Constant		79.48	51.61	<0.001
MCS	Marital status	0.014	4.89	1.98	0.049
	Constant		59.41	13.8	<0.001

Discussion

The mean score of HRQoL in FMTs was 71.6 (out of 100). In a study carried out in Iran, the mean score of QL in nursing staff was found to be 64.7 where their health status was assessed to be relatively favorable (13). The results of other studies have demonstrated that the QoL of healthcare workers was not satisfactory,

and the QoL was reported to be moderate or in poor condition in a considerable percentage of the studies (1, 11, 12, 19). Several factors such as working conditions, job stress, high workload, age, work experience, salary, working hours and shift work of the health personnel can affect their QoL and decrease it (1, 3, 15, 19).

In other studies, the comparisons between QoL of health care workers and other occupational groups as well as general population revealed no significant differences (14, 20, 21).

The results of the study showed that the mean score of PCS (75.1 ± 14.3) was higher than that of MCS (68 ± 14.2), so problems related to the mental aspect of HRQoL is more frequent than the physical aspect in the FMTs members. The reported results of other studies on healthcare workers showed that the mental aspect of QoL was less favorable than the physical aspect (2, 12, 13). It seems that health care workers' workplace environmental conditions have a greater impact on their mental aspect compared with the physical aspect of health.

In the current study, a direct correlation ($r=0.49$) was found between PCS and MCS scores ($P=0.01$). In addition, direct correlations were found between scores of PCS with each of the four subscales of MCS as well as between PCS and the four subscales of MCS. In other studies, physical and mental aspects of life also demonstrated a significant positive correlation; different subscales of these two aspects also had a significant correlation (6, 22).

The evidences suggest that mental and physical aspects are strongly connected, so that people who have chronic physical diseases are two to three times more likely to develop psychological problems, such as anxiety and depression. Furthermore, in 45% of people with mental health problems, a physical illness also occurs (23, 24). Moreover, the mortality in psychiatric patients is two to three times higher than that for the general population and about 60% of these excess deaths are due to the physical illnesses (23).

The results of the present study showed that the mean score of PCS in single people and the mean score of MCS in married FMTs were higher and, therefore, single FMTs had less physical problems and married individuals had less mental problems. In a

research carried out on physicians in China, the physical aspects of QoL in singles and mental aspect in married individuals were in a better condition, which is consistent with the results of the present study (2). Nevertheless, there are other studies reported to obtain different results. A study on nurses revealed that the mental and physical status of QL was better in single individuals (22), while in two studies on nurses and psychiatrists, no significant difference was observed in physical and mental aspects of QoL scores in terms of marital status (3, 4).

In the current study, linear regression analysis indicated marital status as a predicting variable for MCS. Social relationships in general and marriage in particular are considered as the causes of mental health promotion by sociologists. Marriage creates a sense of belonging, meaningfulness, and purpose. By increasing confidence and receiving emotional support, this aspect of social interaction leads to a better mental health in couples (25).

The total mean score of HRQoL and PCS in FMTs who had a contract without residence (working in morning shift in a workday), were higher than that of the individuals who had a contract with residence (day & night shift) while MCS was not significantly different in the two groups. Those who have a contract with residence have more working hours and have to work at nights. The previous studies have demonstrated that increase in working hours and especially working in night shift has a negative impact on QoL (1, 2). In another study, physicians who work more than 10 hours a day had a lower QoL. Also, working more than 40 hours a week was reported to be associated with a poorer QoL in both physical and mental aspects of QoL (2, 3).

The results of the present study revealed that PCS scores of physicians and midwives were higher than that for health technicians, but there were statistically significant differences in the mean scores of MCS in

different job categories. Unlike the results of the present study, in a study in Turkey, scores of PCS in health technicians were higher than physicians' and midwives' scores; however, consistence with the results of our study, no difference was observed in MCS in various job categories (15). Several studies have shown that various factors such as work environment, work load, job satisfaction, job control, the quality of interpersonal communication in the workplace, job stress, and a healthy lifestyle can affect physical aspects of health and these factors are different in various job categories (1, 2, 12).

The results of the present study revealed that there was an indirect correlation between age with PCS ($r=-0.22$, $P<0.05$), while there was no significant correlation between age and MCS and age with HRQoL scores. The result of a survey among nurses was consistent with the results of the present study, too (13). Results of a meta-analysis study showed that in the majority of studies, negative consequences of aging are greater on the physical aspect than on mental aspect of QoL (26). In addition, the results of four researches in Turkey, China, Iceland, and Taiwan in different groups of health care workers demonstrated no significant differences in PCS and MCS in terms of age (3, 12, 15, 19). However, another study revealed that PCS is deteriorated with increasing age while MCS is improved (1).

The current study showed that as work experience increased, HRQL and PCS decreased. Linear regression analysis also showed that work experience is the main indicator of variance changes for HRQL score and PCS. Unlike the findings of our study, two studies showed that there was no relationship between work experience and physical and mental aspects of QoL (12, 15). It seems that inappropriate work conditions, such as long working hours and high workload, job stress, and long distance between work place and resident place in FMTs, lead to a lower QoL in physical aspects with increasing work experience.

The results of the present study showed that HRQL, particularly MCS, in the FMTs are not satisfactory. Undesirable HRQoL, and particularly MCS, can result from several factors such as organizational characteristics, work environment, interpersonal relationship, personal characteristics, job stress, and individual behaviors. Hence, it seems necessary to improve these factors in order to increase the quality of life, especially with the focus on mental aspect which results in improved professional performance and higher quality health services in FMTs.

Conflict of interest

Authors declare no conflict of interests.

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