Relationship between Health Literacy and Health-related Quality of Life and Work Life Quality of Employees in Golestan University of Medical Sciences

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Abstract

Background and objectives: : As the most important assets of each organization, employees face numerous challenges, which can have adverse effects on the quality of their work life and productivity, physical and mental health, well-being, and different dimensions of their health-related quality of life. This study aimed to evaluate the relationship between health literacy and health-related quality of life and work life quality of the employees in Golestan University of Medical Sciences, Gorgan, Iran.

Methods: This cross-sectional research was conducted on 285 individuals working in the departments of Golestan University of Medical Sciences. Subjects were selected through proportionate stratified random sampling. Data were collected using Walton Standard Health Literacy Questionnaire, as well as Quality of Life and Work Life Quality questionnaires. In addition, data analysis was performed in SPSS version 16 using descriptive indicators (frequency, mean and standard deviation) and inferential statistics (ANOVA, Tukey's test, and Pearson's correlation).

Results: In this study, the mean age of the participants was 36.1263 years. According to one-way ANOVA, a significant difference was observed between the age groups and their health literacy level (P=0.04). Moreover, a significant association was found between health literacy and all aspects of health-related quality of life and work life quality of the participants (P=0.001).

Conclusion: In the present study, the lowest score of quality of work life was related to fair payment, which showed the importance of more attention to this area by authorities and managers of universities.

Keywords: Health Literacy, Quality of Life, Work Life Quality, University of Medical Sciences

Introduction

Health literacy is the key to achieving public health and is the first priority to improve the quality of health services. This term is defined as the ability to acquire, process, and understand vital information and services used to make proper health-related decisions and includes a set of skills such as reading, listening, talking, analyzing, deciding and calculating, as well as the ability to use these skills in the field of health (1). New health systems increasingly rely on self-management of health by individuals, which requires a health literacy skill to understand health information and be able to participate in their healthcare decisions as an informant (2).

Today, with the development of communities and the improvement of life standards, the importance of quality of life has significantly increased since the ultimate goal of development is to achieve a desirable life. Quality of life is a multi-dimensional and fluid concept that expresses happiness and well-being. In addition, the quality of life describes how a person evaluates different aspects of his life, which includes emotional reactions of a person to a life event, orientation, feeling complete and happy about it, and job satisfaction and personal relationships (3). One of the factors that considerably affects the quality of life of individuals is their occupation. On one hand, work is a part of an individual's life and an important source of livelihood and social status and credit, reverence and economic development. On the other hand, it can lead to dissatisfaction, fatigue and physical and psychological weakness (4).

As one of the social determinants of health, work and employment are an important part of people's time. Therefore, the conditions associated with occupation and job satisfaction have become one of the essential elements for promoting health and life satisfaction (5). Organizations and managers must realize that human capital is the most valuable asset of an organization, and the success of organizations depends on intangible assets, such as employees' thinking skills, rather than financial and physical indicators. Employees become more committed to the organization when their needs are met (6).

Considering that universities, especially medical science universities, are among the most important educational and service institutions in the country and recruit a large number of employees and represent a significant place in the improvement and prosperity of the society, increasing the health and work quality and well-being of the employees of these institutions in various ways can improve their physical well-being, as well as performance and productivity. With this background in mind, this study aimed to evaluate the relationship between health literacy and health-related quality of work life of the employees in Golestan University of Medical Sciences, Gorgan, Iran.

Materials and Methods

This descriptive, analytical and cross-sectional study was conducted on all non-health administrative employees (permanent, under-a-contract, and temporary-to-permanent) working in the departments of Golestan University of Medical Sciences (health, treatment, education, research and technology, resources development and management, food and drugs, and cultural-student departments), Gorgan, Iran in 2016. This research was approved by the vice chancellor for research of Islamic Azad University, Tehran Medical Branch. A written informed consent was obtained from the subjects prior to the research, and they were assured of the confidentiality terms regarding

their personal information. In order to collect data, the researcher visited the university departments two days a week. Employees who were willing to participate in the research were enrolled by the researcher.

In total, 500 employees of the departments of Golestan University of Medical Sciences entered the research. Subjects were selected by proportionate stratified random sampling; to this end, various departments of the university were regarded as classes, and subjects were randomly selected based on the population of each unit. In this regard, 136 individuals were selected from the department of resources development and management, whereas 86, 56, 100, 60, and 62 subjects were selected from the health, education and research and technology, treatment, food and drugs, and student-cultural departments, respectively.

Inclusion criteria included working in the university, having an associate degree or higher degrees in non-medical fields, lack of diagnosis of acute or chronic diseases, lack of conscription recruitment, willingness to participate in the study and no acute diseases in the past six months. Exclusion criterion included incomplete questionnaires. Data were collected using demographic characteristics (age, gender, level of education, type of occupation, and work experience) questionnaire, Health Literacy Adults Questionnaire, the World Health Organization Quality of Life (WHOQOL), and Walton's Quality of Work Life Questionnaire. The Health Literacy Adults Questionnaire contains 33 items and five components, including access (items 1-6), reading skill (items 7-11), comprehension (items 11-17), evaluation (items 18-21), and decision-making and use of health information (items 22-33).

Health literacy was assessed at three score levels of inadequate (0-59), marginal (60-74) and adequate (75-100). The validity of the health literacy questionnaire was previously confirmed by Montazeri et al. (7), and its reliability was estimated at the Cronbach's alpha of 0.72-0.89. In the present study, the Cronbach's alpha was calculated at 0.89. In order to evaluate the quality of life, we used a 26-item health quality of life questionnaire, the first and second items of which assess the quality of life and health status, respectively. The other 24 items evaluate the quality of life in four areas of physical health, mental health, social relations, and satisfaction with the environment. After the calculation of the raw score, a score equal to 0-100 was allocated to each area. In this regard, the scores below 50 were indicative of low life quality, whereas the scores in the range of 50-74 demonstrated a moderate quality of life and the scores equal or higher than 75 showed a high quality of life. Validity of the mentioned questionnaire was confirmed by Nejat et al. (8), and its reliability was estimated at the Cronbach's alpha of more than 0.7 in all areas. In the current research, the reliability of this questionnaire was confirmed at the Cronbach's alpha of 0.91.

Moreover, Walton Standard Health Literacy Questionnaire was applied to evaluate the quality of work life of the subjects, which involved eight major components, including fair and adequate payment, safe and clean work environment, human capabilities development, provision of an opportunity for continued growth and development, social integration in the organization, questions of rule of law in the organization, general life environment, and social dependence of work life. The items were scored based on a five-point Likert scale. In addition, the validity of

the mentioned questionnaire was confirmed by Khaghanizadeh et al. (9), and its reliability was estimated at the Cronbach's alpha of 0.89. In the present study, the reliability was calculated at the Cronbach's alpha of 0.94.

Data analysis was performed in SPSS version 16 using descriptive indicators (frequency, mean, and standard deviation) and inferential statistical tests, including one-way ANOVA and Pearson's correlation coefficient.

Results

In this study, the mean age of the participants was 36.12±14.59 years. In addition, most participants (N=141, 49.5%) had a BSc degree, and 171 subjects (60%) were working in administrative areas. Furthermore, the majority of the personnel (N=162, 56.8%) had a work experience above 10 years in Golestan University of Medical Sciences (Table 1).

Table 1. Demographic Characteristics of the Non-medical Staff of Golestan University of Medical Sciences

Variables	Subgroups	Frequency (%)
Gender	Male	174 (61.1)
	Female	111 (38.9)
Level of education	Associate degree	30 (10.5)
	BSc	141 (49.5)
	MSc and higher	114 (40)
Type of occupation	Administrative	171 (60)
	Financing	114 (40)
Work experience (year)	3-5	25 (8.8)
	5-10	98 (34.4)
	More than 10 years	162 (56.8)
Age (year)		Mean ± SD
		36.12±14.59

The majority of the participants (N=153, 53.7%) had adequate health literacy (75-100 score), and mean and standard deviation of health literacy was 76.12±1.45. In addition, most subjects (N=209, 73.6%) had a high life quality (≥75), and mean and standard deviation of this variable was estimated at 81.89±11.81. In terms of the dimension of quality of work life, the highest score (11.96±2.96) was related to the development of human capabilities, and mean and standard deviation of quality of work life was 72.63±1.55 (Table 2).

Table 2. Scores of Health Literacy, Health-related Life Quality, and Work Life Quality of the Non-medical Administrative Staff of Golestan University of Medical Sciences

Variables	Subgroups	Frequency (%)
Health literacy	Inadequate (0-59)	36 (12.6)
	Marginal (60-74)	96 (33.7)
	Adequate (75-100)	153 (53.7)
	Total	285 (100)
	Range of scores	Lowest / Highest
		41 / 114
	Mean ± SD	76.12±1.45
Health-related quality of life	Low life quality ≤50	2 (0.7)
	Moderate life quality (50-74)	73 (25.7)
	High life quality ≥75	209 (73.6)
	Total	284 (100)
	Range of scores	Lowest / Highest
		49 / 115
	Mean ± SD	81.89±11.81
Work life quality dimensions		Mean ± SD
	Fair and adequate payment	6.74 ± 2.45
	Safe and clean work environment	8.52 ± 2.45

	Human capabilities development	11.96 ± 2.96
	Provision of opportunities for continued growth and security	10.43 ± 3.11
	Social integration	8.32 ± 2.25
	Rule of law in the organization	7.94 ± 2.25
	General home environment	8.10 ± 2.19
	social dependence of work life	10.31 ± 2.55
	Range of scores	Lowest / Highest
		26 / 130
	Mean ± SD	72.36±1.55

Health-related life quality had a significant relationship with all variables studied, with the exception of reading skill (P=0.001). In addition, in terms of the dimensions of health-related life quality, the highest and lowest associations were found between the health literacy with decision-making and use of health information and social relations, respectively (Table 3).

According to the results, a significant relationship was found between health literacy and all aspects of work life quality (P=0.001). Among the dimensions of work life quality, rule of law in the organization and social dependence of work life had the highest and lowest correlation with the health literacy of the personnel (Table 4).

According to the results, the highest and lowest means of health literacy were related to the age range of below 30 years (82.17±680.735) and 40-50 years (73.711±14.746). In addition, the one-way ANOVA showed a significant difference between the age groups studied and health literacy of the subjects (P=0.04). In this study,

the Tukey's test was applied to compare the age groups two by two in terms of health literacy. According to the results of this test, the only significant difference was observed between the age group of below 30 years and the age group of 40-50 years (P=0.033).

In this study, individuals with three-five years of work experience received the highest health literacy score. According to one-way ANOVA, a significant difference was observed between work experience and mean score of health literacy of the participants (P=0.037). In addition, the Tukey's test demonstrated a significant association between mean health literacy and work experience of more than 10 years (P=0.048).

In addition, age (P=0.04) and work experience (P=0.037) were significantly correlated with the health literacy of the subjects. However, no significant association was observed between the health literacy of the participants and other variables (gender, level of education and type of occupation).

Table 3. Correlation between Health Literacy and Health-related Life Quality and Demographic Characteristics of the Non-medical Administrative Staff of Golestan University of Medical Sciences

		Health Literacy	Access	Comprehension	Decision-making and use of health data	Physical health	Mental health	Social relations	Quality of life and health status
Health literacy	Correlation coefficient	1	0.693	0.757	0.816	0.316	0.355	0.211	0.404
	P-value		0.001	0.001	0.001	0.001	0.001	0.001	0.001
Access	Correlation coefficient	0.693	1	0.390	0.443	0.356	0.464	0.282	0.478
	P-value	0.001		0.001	0.001	0.001	0.001	0.001	0.001
Comprehension	Correlation coefficient	0.757	0.390	1	0.407	0.182	0.119	0.012	0.197
	p-value	0.001	0.001		0.001	0.002	0.045	0.837	0.001
Decision-making and use of health data	Correlation coefficient	0.816	0.443	0.407	1	0.310	0.352	0.199	0.358
	P-value	0.001	0.001	0.001		0.001	0.001	0.001	0.001
Physical health	Correlation coefficient	0.316	0.356	0.182	0.310	1	0.667	0.513	0.857
	P-value	0.001	0.001	0.002	0.001		0.001	0.001	0.001
Mental health	Correlation coefficient	0.355	0.464	0.119	0.352	0.667	1	0.529	0.861
	P-value	0.001	0.001	0.045	0.001	0.001		0.001	0.001
Social relations	Correlation coefficient	0.211	0.282	0.012	0.199	0.513	0.529	1	0.703
	P-value	0.001	0.001	0.837	0.001	0.001	0.001		0.001
Quality of life and health status	Correlation coefficient	0.404	0.478	0.197	0.358	0.857	0.861	0.703	1
	P-value	0.001	0.001	0.001	0.001	0.001	0.001	0.001	

Table 4. Correlation between Health Literacy and Work Life Quality of the Non-medical Administrative Personnel of Golestan University of Medical Sciences

		Health literacy	Fair payment	Human capabilities development	Social integration	Rule of law in the organization	Social dependence of work life	Work quality
Health literacy	Correlation coefficient	1	0.203	0.296	0.198	0.359	0.188	0.350
	P-value		0.001	0.001	0.001	0.001	0.001	0.001
Fair payment	Correlation coefficient	0.203	1	0.501	0.459	0.600	0.287	0.287
	P-value	0.001		0.001	0.001	0.001	0.001	0.001
Human capabilities development	Correlation coefficient	0.296	0.365	1	0.610	0.584	0.336	0.784
	P-value	0.001	0.001		0.001	0.001	0.001	0.001
Social integration	Correlation coefficient	0.198	0.459	0.559	1	0.620	0.521	0.790
	P-value	0.001	0.001	0.001		0.001	0.001	0.028
Rule of law in the organization	Correlation coefficient	0.359	0.600	0.574	0.620	1	0.502	0.850
	P-value	0.001	0.001	0.001	0.001		0.001	0.001
Social dependence of work life	Correlation coefficient	0.188	0.287	0.505	0.521	0.502	1	0.660
	P-value	0.001	0.001	0.001	0.001	0.001		0.001
Work quality	Correlation coefficient	0.350	0.689	0.799	0.790	0.850	0.660	1
	P-value	0.001	0.001	0.001	0.001	0.001	0.001	

Discussion

In the current research, the majority of the participants (N=153, 53.7%) had an adequate level of health literacy. In addition, the mean score of health literacy was 76.126. In a study by Khosravi and Ahmadzadeh (2015), which was conducted on patients referring to hospitals of Bushehr, Iran, the results were indicative of inadequate health literacy of the subjects (10). This lack of consistency between the results might be due to the possible and constant encounter of the subjects in the present research to relatively informed individuals (employed at the University of Medical Sciences).

However, some other studies conducted in Iran have reported a low level of health literacy of patients as well (11, 12). For instance, Peyman et al. (2016) evaluated the health literacy status of healthcare providers in rural areas. Similar to the present research, the mean health literacy of the students was estimated at 86.54, which showed their adequate health literacy level. The similarity between the results might be due to the encounter of the target student group with informed and updated individuals who had a similar condition to the society evaluated in the present research (13).

According to the results of the present study, the highest and lowest means of health literacy were related to the age groups below 30 years (82.680±17.735) and 40-50 years (73.711±14.746). in addition, there was a significant difference between the age groups and health literacy of the individuals evaluated. In a study by Shari'atinia et al. (2014), a weak reverse association was found between age and health literacy, which was not statistically significant (14) and might be due to the difference in the research populations. In the present study, all participants were employees and might have had more health-related information due to

their field of work (medical sciences) and possible encounters with more informed individuals. In the present research, there was a significant relationship between health literacy and work experience. Meanwhile in the study by Shari'atinia et al., the majority of the subjects were housewives; their aging could be associated with shortcomings in their health literacy as a result of reduced cognitive function and distance from formal academic years.

In the current research, no significant relationship was observed between the level of education and health literacy. Shari'atinia et al. performed a research entitled "evaluation of AIDS literacy" on a population residing in Yasuj, Iran with the age range of 15-49 years. According to their results, a significant association existed between health literacy and the level of education of the participants (14). This inconsistency between the results might be due to different health literacy measurement tools used in the studies. In the present research, the public health literacy questionnaire was applied, whereas Shari'ati et al. used the AIDS-related health literacy questionnaire. Furthermore, according to various studies, there is no complete correlation between literacy and academic years. Therefore, studying years alone is not a valid indicator of reading and learning skills. In general, it could be expressed that health literacy is not determined based on years of study or general reading ability (15).

In the current study, no significant relationship was observed between gender and literacy level of students. Meanwhile, Khosravi and Ahmadzadeh found a significant association in this regard, in a way that the mean health literacy score of male subjects was higher in the section of numerical perception, compared to the mean score of female participants (10). Conflicting

results were obtained by Kleindl and Lindstrom, who reported a higher health literacy score in female subjects, compared to male participants (16, 17). The most important cause of these conflicts might be the presence of measurement tools and significantly different statistical populations of different studies, which have made a comparison of the results extremely difficult.

The majority of the participants in the current research (N=209, 73.6%) had a high health-related life quality (≥75), and mean score of health-related life quality of these individuals was estimated at 81.89. Chica et al. (2015) conducted a research on patients with cardiovascular diseases, reporting the mean life quality scores of 39.6, 42.1, and 44.8 to be inadequate, marginal, and adequate health-related life quality, respectively (18). This lack of consistency between the results of the aforementioned research and the current study might be due to different tools used to measure life quality (SF-26 in the present research and SF-12 in the mentioned study) and different research population (healthy individuals in the present study vs. patients with cardiovascular diseases in the research by Chica).

In the present study, decision-making and application of health information had the most correlation with subjects' health literacy. On the other hand, social relations had the lowest correlation in this regard. In a research by Jenaabadi (2013), the most dissatisfaction was related to the dimensions of environmental health and social relations, respectively (19). The reason for the lack of satisfaction with social relations in the current study might be the fact that the studied individuals were employees and exposed to stresses from the work environment. However, as expected,

considering the nature of the subjects, the dimensions of decision-making and the application of health information had the highest correlation with health literacy. As expressed above, this issue might be due to better access of individuals to more informed people in the health area.

In the present research, the highest mean score of quality of work life was related to human capabilities development (11.96), whereas the lowest score was related to fair and adequate payment (6.74). In addition, the mean and standard deviation of quality of work life was 72.36±15.53, which might be due to the tendency of individuals to continue studying in the work environment and obtain promotion. This is not far from the mind considering the flexible approach of the university regarding the status of continuing education of the covered forces and their promotion. On the other hand, achieving of the lowest score in the area of fair and adequate payment might be due to low minimum salary for university staff and personnel, compared to other organizations, and some expectations and discrimination in bonuses and overtime pay.

Shafipour et al. (2016) performed a research to evaluate the quality of work life and relevant factors in 180 nurses of intensive care units (ICU) of educational hospitals of Sari, Iran, reporting a relative satisfaction with the component of work life quality in the majority of the participants. The results of the mentioned research are in congruence with our findings in terms of a significant relationship between the quality of work life and overtime hours, number of night shifts per month, and income adequacy (20).

In another research conducted in Gorgan, Iran on nurses, it was marked that only 42.5% of the subjects had a favorable quality of work life (21), which is inconsistent with our findings. This lack of consistency might be due to the difference in research populations and a higher level of occupational stress among nurses. In the current research, all participants were among the employees in the administrative section of Golestan University of Medical Sciences. Moreover, in the study by Shafipour et al. (2016), the lowest mean score was related to the dimension of human capabilities development, which is not in line with our findings (20) and might be due to their research population. In the mentioned study, nurses were assessed, who, in contrast to the population evaluated in the current research, had no chance of continuing education or receiving a promotion.

Conclusion

Given the lack of a significant relationship between health literacy and education, providing the necessary training in the form of workshops seems to be beneficial. Moreover, the lowest score of quality of work life was related to the dimension of fair payment, which showed the necessity of more attention to this area by university authorities and managers.

Authors' contributions

All authors contributed equally to this work.

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