ASSOCIATION BETWEEN ORAL HEALTH LITERACY AND SELF-REPORTED ORAL HEALTH BEHAVIOR IN ADULTS (2017-KERMAN-IRAN)

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ABSTRACT

Background and objectives: The role of health literacy has been studied in medical and general health in the recent years. The present study evaluated the association between oral health literacy and self-reported oral health behavior in individuals referring to Kerman health centers.

Methods: The cross-sectional study was conducted on 338 adults referring to Kerman health centers and selected by multiple cluster sampling method. Data collection was done through a valid oral health literacy questionnaire, demographic data and oral health behavior questionnaire. Data was analyzed by SPSS software/version 21, linear regression and T-tests. P-value was significant at the level of 0.05%.

Results: sixty two and seventy five percent   of samples were females in the present study. The mean age of individuals was 36.53 ± 10.02 years. Thirty two percent of them had educational degrees. The mean score of DMFT was 10.27 ± 6.79. The mean score of oral health literacy was 11.04 ± 4.43. Forty nine percent had inadequate oral health literacy. There was a significant association between the oral health literacy, educational level, and oral health behavior, and also a significant association between the oral health behavior and gender, educational level and mean of DMFT index.

Conclusion: The results of the present study indicated that the oral health literacy was moderate and associated with educational level and oral health behavior. An understanding of participants' oral health literacy levels was crucial for designing effective health educational materials and creating intervention programs to promote the oral health.

Keywords: Oral health literacy, Kerman, Oral health behavior, Adults

INTRODUCTION

Despite significant advances in oral health in some countries, dental caries, periodontal diseases, tooth loss, mucosal lesions, oropharyngeal cancers, HIV/AIDS and oral dental traumas are still public health problems (1). The prevalence of oral illnesses and problems is very high in low-income, less educated, and uninsured people and ethnic and racial minorities (2). Several factors including financial issues, lack of access to effective preventive care and service in the behavioral, social and cultural aspects affect the continuation of oral diseases. Furthermore, personality traits and caring behavior are internal factors that accompany external factors in affecting the oral and dental health (3). The low level of literacy in people is also among the major internal factors affecting oral and dental illnesses, and thus they do not take the advantage of preventive and therapeutic services by providers or obtained information from health organizations (4). The health literacy means a set of capacities and skills for access, understanding, evaluation of health information and services, and its optimal use for promoting health (5). The positive consequences of promoting the health literacy are manifested in the proper use of health services. People with high levels of health literacy cooperate better with health centers and accurately listen to and implement health instructions (6).

Oral health literacy is "a degree under which people have the capacity to receive, process, and understand basic information about oral health and related services" that are essential for proper health decisions" (7). Oral health literacy skills are essential to reduce health contradictions and improve the oral health (8).

People with the low health literacy are thought to be at the highest risk of oral diseases and problems (9); and lower health literacy may be related to barriers to access to oral health care and behavior such as seeking preventive care (10).

Some studies on the oral health literacy indicate a limit on oral health literacy especially in less educated, the elderly, and the underprivileged people (11-14). There are a few studies on the level of oral health literacy and its determinants especially in developing countries such as Iran. Considering the cultural differences and socioeconomic factors in different cities of Iran

and as the knowledge on the level of oral health literacy can affect the oral health planning, the present study was conducted to assess the level of oral health literacy and its relationship with the self-declaration of oral and dental health behavior in patients referring to Kerman health centers in 2017.

METHODS

This descriptive-analytical and cross-sectional study was conducted on 384 patients who voluntarily and with written consent participated in the study on Kerman health centers. Sampling method was multi-stage. First, the city was divided into 5 regions and a health center was selected from each region. A number of patients were randomly selected from each center.

The inclusion criteria of study included people over the age of 18 years, literacy, and the written consent of participation in the project. For completion of questionnaires, the researcher sat next to patients and gave explanations in the case of ambiguity.

The data collection tool consisted of a questionnaire including demographic characteristics, the Oral Health Literacy–Adult Questionnaire (OHL-AQ) and the health behavior questionnaire (15). The questionnaire consisted of 17 items that examined reading, listening, and decision-making skills. The reading skill section evaluated the ability to read and the individual knowledge on the oral health through six questions about the number of teeth, teething age, types of toothpaste and the frequency of brushing and flossing. The computation section evaluated the ability to assess the dental prescription and mouthwash instructions with four questions. In this section, two hypothetical versions were given to patients; and questions were asked about the time of taking drug and the mouthwash instructions. The audio section consisted of two questions about communication skills, and the questioner read tips on the post tooth-pulling care, and then asked the participants to answer questions. The decision-making section was asked with five questions about the common oral and dental problems and the way of dealing with them. Correct answers were scored 1 and wrong answers scored zero. The total score of questionnaire was from 0 to 17; and results were put in three groups of scores 0-9: inadequate literacy, 10-11: moderate literacy, and 12-17: enough literacy. (15)

Questions such as the frequency of brushing and application of toothpaste, the last visit of dentist and smoking were asked in the field of oral health behavior. The questions were asked about sources of information on oral health and demographic information including age, gender, education level, economic conditions, insurance and supplementary insurance. After collecting questionnaires from the population, data was encoded and entered into SPSS20

software and analyzed using independent statistical t-tests and linear regression at the significant level of 0.05. Proposal of this project was registered with the code of ethics of IR.kmu.REC.1395.717.

RESULTS

In this study, 212 subjects (62.7%) were female and 126 (37.3%) were male. 108 (32.0%) had bachelor's degree and 92 (27.2%) were employees. The mean age of subjects was 36.53 ±10.02years and the mean of DMFT was 10.27±6.79. The demographic data of people is presented in Table 1.

Table 2 presents the individual health behavior. In terms of health behavior, 13 people (3.8%) never used toothbrushes. 237 ones (80.8%) used toothpaste. 44 ones (13.0%) did not remember when they visited dentists.

Regression test was used to determine the relationship between studied variables and health literacy and its domains. Its results are presented in Table 3.

Participants' self-assessment of oral health and DMFT is shown in Table 4. As shown, 41.49% of people evaluated their oral health and gave the good point to it. There was a significant statistical association between self-assessment of oral health and mean DMFT index.

The mean total score of health literacy was 11.04±4.43 from 17. Women had significant higher understanding (P= 0.031) and decision making than men (P=0.014). (Table 5)

There was not any significant difference between insurance coverage and type of insurance with oral health literacy. There was a positive and significant relationship between oral health literacy and income level. (p= 0.000)

DISCUSSION AND CONCLUSION

Findings of the present study indicated that the oral and dental health performance was desirable. 77.3% of subjects brushed once or twice daily. 19.8% of subjects had dental visits in the last 6 months and 6.8% never refer to dentistry. In the study by Naghibi Sistani et al, 36.8% of subjects used dental service in the past six months (16). According to a study by Ueno et al, most people did not regularly visit dentistry (17).

Considering that the regular visit of dentistry is important in diagnosis of dental oral problems and timely treatment, it seems that individuals should be encouraged to visit dentists for examination. The females' health performance was significantly better in the present research. Results were inconsistent with research by Skorupka et al who did not find any statistical

significant difference between men and women in terms of oral health behavior. The reason for this difference may lie in the difference of age population in a study by Skorupka who found the age range of 65 to 81. (18)

In this research, there was a significant difference between the level of literacy and score of health performance. People with higher levels of literacy had better performance. According to a study by Vano et al, people with higher literacy significantly had better health behavior (19). Higher literacy led to the increased study, awareness and information, and thus the better performance. In the present study, there was not any significant relationship between insurance and its type with health behavior score. These results were consistent with a research by Erdwatch et al who found that the type of adult health insurance did not relate to the oral hygiene behavior (20). In this study, the most important sources of dentistry information were the Internet (16.0%) and dentists (14.8%). In a study in Tehran and Saudi Arabia, dentists were the most important sources for receiving dental information (12 and 21), while the main source of information was television (22) in the United States. Therefore, mass media can play an important role in promoting the oral health.

The mean total score of health literacy was 11.04±4.43 from 17. According to this score, the oral health literacy was moderate, despite the fact that 49% of people had inadequate health literacy. In a study by Bizniuk et al, 12.4% of people had inadequate health literacy (23).

Since the health literacy is influenced by factors such as the culture and dental care level, we can claim that these factors affect the level of literacy in the present study and contribute to differences with studies in other countries.

In the present study, there was a significant relationship between individual literacy and oral health literacy, and those with higher literacy levels had better health literacy. This could be due to the greater understanding in more educated people as well as higher access and use of health-related resources. This finding was consistent with other conducted studies in different countries (26, 10, 12, 24 and 25). Therefore, it seems that the oral health literacy education should be considered in less educated groups. There was a significant correlation between health performance and oral health literacy in the present study. According to a study by Lee et al, subjects with higher oral health literacy had better oral health status (26).

Firmino et al reported a positive correlation between dental caries and low oral health literacy levels (27). Previous studies indicated that people with lower oral health literacy had lower oral health and seldom brushed (28, 29).

In the present study, 23.28% of subjects gave moderate scores to their oral health. In a study by Murakami et al, 29.7% of men and 23.0% of women gave moderate or low scores to their

oral health (30). In this research, there was a significant positive association between DMFT index with self-assessment of oral health. Subjects, who gave very good scores to their oral health, had the very well were the lowest DMFT. There was not any significant relationship between health literacy and self-assessment of oral health. A research by Jamieson In Australia indicated that those who, stated that they needed tooth repair, filling or pulling or gum treatment, had a lower level of health literacy, but this association was not significant. These results were consistent with the present research (31).

In the present study, women significantly had higher understanding than men (P= 0.031) and also had higher scores of decision making (P= 0.014) because women had more opportunities to get more content from health issues through the mass media.

In the present study, there was not any significant difference between gender and total health literacy score. The results were consistent with other studies indicating a statistical significant relationship between gender and health literacy. (25, 32)

In the present study, there was a significant statistical relationship between economic level and health literacy. This could be due to the individuals' more access to dental services leading to higher level of literacy.

CONCLUSION

Results of the present study indicated that moderate health literacy in individuals, and good oral and dental health. There was not any significant difference between genders with level of health literacy. There was a significant association between level of literacy and health behavior with oral health literacy level. Oral health literacy is a new tool that can be used by oral health practitioners and policy makers to intervene in improvement of oral health in societies.

SUGGESTIONS

Further studies are suggested in other population groups.

1-   Other studies are suggested on the association of all oral health indices with oral health literacy levels.

CONFLICT OF INTERESTS

Authors have no conflict of interest.

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Table 1. Demographic characteristics of participant

Variable		Number	Percent
Gender	female	212	62.7
	men	126	37.3
Educational level	Elementary	62	18.5
	High school	26	7.7
	diploma	88	26.2
	License	108	32.0
	Higher of License	54	16.0
Having insurance	yes	303	89.6
	no	35	10.4
Having complementary insurance	yes	144	42.6
	no	194	57.4
Type of insurance	Social insurance	142	42.0
	therapeutic insurance	109	32.2
	Salamat insurance	52	17.1

Table 2. Oral health behavior status in participant

Variable		Number	percent
Tooth brushing	**Never**	13	3.8
	Once a week	23	6.8
	2-3 times a week	41	12.1
	Once a day	198	58.6
	2 or 3 times a day	63	18.7
Using tooth paste	**Always**	273	80.8
	Most often	44	13.3
	Seldom	10	3.0
	Never	11	3.3
Last dental visit	**Past 6 month**	67	19.8
	6-12 months ago	42	12.4
	1-2 years ago	82	24.3
	2-5 years ago	43	12.7
	More than 5 years ago	37	10.9
	Do not remember	44	13.0
	Had not dental visit	23	6.8
Snack consumption	**3 times or more daily**	35	10.4
	2 times a day	25	7.4
	Once a day	30	8.9
	Seldom	196	58.0
	Occasionally	52	14.5

Table 3. Correlation between total score of oral health literacy, DMFT and demographic charectistics

variable		B	t	P value
Oral health literacy	**education**	0.390	5.219	0.000
	Having complementary insurance	0.631	2.882	0.004
	Having insurance	0.644	1.878	0.061
	Behavior	0.064	2.300	0.022
Oral health behavior	**Gender**	2.587	6.592	0.000
	Education	0.518	2.995	0.003

Table 4. Correlation between self-assessment of oral health and DMFT index

Self-assessment	Number	percent	DMFT		P value
			Mean	**SD**	
Don't know	53	16.0	14.22	7.69	
Very good	37	11.0	6.16	5.13	
Good	139	41.5	8.20	5.36	0.000
Moderate	78	23.3	10.97	6.61	
Bad	16	4.7	15.87	6.83	
Very bad	12	3.5	17.58	4.37	

Table 5. Correlation between gender and oral health literacy domains and oral health literacy

Domain		Number	Mean	Standard deviation	P value
Reading and perception skill	Male	126	3.50	2.01	0.031
	Female	212	3.98	1.80	
Listening and accounts skill	Male	126	3.22	1.60	0.158
	Female	212	3.48	1.64	
Decision making skill	Male	126	2.51	1.61	0.014
	Female	212	2.96	1.63	
Total Oral health literacy score	Male	126	10.21	3.34	0.143
	Female	212	10.59	4.29	

In all tables significant P value >0.05