Health Literacy Level and its Related Demographic Factors among Employees of Iranian Academic Center for Education, Culture & Research (ACECR) - Khuzestan Branch

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ABSTRACT

Background and Objective: Health literacy of individuals have the capacity to obtain, process, and understand basic health information and services needed to make proper health decisions. Considering the importance of health literacy in all strata of society, this study aimed to assess the level of health literacy in employees of Khuzestan-ACECR.

Materials and Methods: This analytical cross-sectional study was performed on 209 employees of Khuzestan-ACECR. Samples were selected and examined randomly. Data collection questionnaire consisted of demographic information and Iranian Health Literacy Questionnaire (HELIA). The collected Data were analyzed using descriptive and inferential statistics including independent t-test and one-way ANOVA in SPSS version 23 software.

Results: The health literacy score of the research units was 73.13 ± 12.29.The results showed that 2.4%(5 individuals) of participants had low health literacy, 27.3% (57 individuals) had inadequate health literacy, 48.8% (102 individuals) had adequate health literacy, and 21.5% (45 individuals) had high health literacy. The mean of access to health information and reading in women was better than men, and the mean difference between the two groups was statistically significant (P <0.05). Among the different dimensions of health literacy, only mean score of decision making and understanding health information showed a significant relationship with age (P=0.008), type of insurance status (P=0.006) and employees work experience (P=0.005).

Conclusion: Overall, the findings of this study indicated that most participants had adequate health literacy. Therefore, appropriate educational planning based on the above mentioned variables seems necessary to maintain and improve the health literacy level of employees.

Paper Type: Research Article
Keywords: Health Literacy, Demographic variables, Employees, Khuzestan

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Introduction

Human resources are considered to be the most important factor in development of any country and organization. Physical and mental health of employees is one of the factors influencing the level of productivity and efficiency of the workforce in organizations. The organization will be able to move dynamically to achieve higher levels of productivity if it provides employees' mental and physical health. It is emphasized that managers pay more time and attention to the health and satisfaction of human resources. As a result, institutions and organizations are eager to recruit individuals who have acceptable general health status. One of the factors that closely correlates with health outcomes such as health status, chronic illness and hospital admissions is health literacy (1). Health literacy is a new and, at the same time, old concept that has been used in scientific texts for 30 years and reflects the skills and resources that shows the ability of individuals in processing health-related information (2).

Health literacy is the ability to obtain, process, understand basic information and services needed for proper health decision making (3). From the perspective of the World Health Organization (WHO), health literacy is the cognitive-social skills and the ability of individuals to understand and use existing information to maintain and promote the health level (1).

In fact, health literacy includes the ability to understand prescribed medications, medical education brochures, satisfaction forms, the ability to use complex medical systems, reading and writing skills, analysis, decision making and the ability to use these skills in health situations. Most people are faced with challenges such as the complexity of the health system, the need for care and the increased availability of information when they seek health information which is related to their low level of health literacy (4).

The most important components of health literacy include: reading, listening, analysis, decision making and the ability to use these skills for the purposes of prevention and treatment in the personal and social health area (5).

Health literacy has been considered as a means of reducing inequalities and improving health outcomes. Health literacy plays a critical role in health education and health promotion and is considered as a social component of health. Recent research has shown that health literacy is a better predictor of the individuals' health status than the socioeconomic status, race, sex, occupation, and education (6).

According to Community Health and Counseling Services (CHCS) studies, people with low levels of health literacy are less likely to understand the written information and speech provided by health professionals and follow the given instructions. Therefore, they have a lower health status, more deaths (7), higher hospitalization and referral to physicians, poor self-care skills, less preventive care and consequently more medical expenses (8). Health literacy is one of the "Healthy People 2020" objectives. The American Medical Foundation also defines health literacy as one of the 20 priorities of quality-care change (9).

An extensive national survey conducted in the United States estimated the prevalence of inadequate health literacy at 48% (7). Lewis et al. showed that only 37% of the patient care staff and 65% of doctors were able to define the concept of adequate health literacy (10).

In limited researches conducted in Iran, the health literacy level of different groups in Iranian society has been studied and the results indicate that their health literacy level is inadequate (11). In a cross-sectional study by Tavousi et al. which was carried out among the Iranian adults (18 to 65 years old) using the HELIA Health Literacy Questionnaire, the results showed that about 44% of the population had limited health literacy (12). However, in the study of Ghanbari et al., the health literacy level of all administrative staff was adequate and moderate (1). In Khoshravesh et al. study conducted in 2016, the average of health literacy was on average at the borderline level among staff and more than half (58.5%) of them had inadequate or borderline health literacy (4).

Considering the importance and necessity of supplying, maintaining and improving the health of employees in the community (13) and considering the point that few studies have been conducted on staff health literacy (1), this study aimed to assess the level of health literacy in employees of Khuzestan-ACECR.

Methodology

This analytical cross-sectional study was performed on 209 employees of Khuzestan-ACECR. Morgan table was used to determine the sample size. Based on the total number of employees working in Khuzestan-ACECR (about 500 people), the sample size was determined 217 people, (full-time, contractual, contract and part time (among 209 people participated in the study. Sampling selection was done in the units covered by the organization, and samples were randomly selected based on the list of employed staff and inclusion criteria. The incomplete questionnaire was also considered as exclusion criteria.

In order to achieve the research goals, a standard two-part questionnaire including demographic information and health literacy (HELIA) was used. The questionnaire were completed in self-reported. The first part of the questionnaire includes demographic and background information of employees, which consists of 9 items including age (year), gender, educational level, type of occupation, work experience, marital status, insurance type, economic status and source of information about health and disease.

In the second part of the questionnaire, the HELIA health literacy tool (developed by Montazeri et al (14) in Iran) was used and its validity and reliability were measured. The reliability of this tool was measured by internal consistency method with Cronbach's alpha test, and for the dimensions of health literacy, the values were obtained from 0.72 to 0.89. The questionnaire has 33 items on 5 Likert based on 5 dimensions that measure the health literacy among urban population in Iran (18 to 65 years old) (14). In this questionnaire, 4 items related to the studying health-related teaching materials (reading skills), 6 items related to access to health information and disease (access dimension), 7 items related to understanding the concepts of disease and health (understanding dimension), 4 items related to health information assessment (assessment dimension) and 12 items related to health behaviors (decision making and health information application dimension) (1).

The raw score of each individual in each dimension is derived from the sum of the scores of that dimension. These scores range from 0 to 100. Ultimately, for calculating the

total score, the scores of all dimensions are grouped together and divided by its number (five dimensions). The ranking of these scores is such that scores of 0 to 50 were considered as low health literacy, scores of 50.1 to 66 were considered as inadequate health literacy, scores of 66.1 to 84 were considered as adequate health literacy and scores of 84.1 to 100 were considered as high health literacy (14). In order to comply with the principles of ethics in research, participants were given enough information about the goals of the study and its implementation process. They were also assured that all information obtained would be confidential. After making informed consent of the individuals, the questionnaire was provided to complete in self-report method. The collected data were analyzed by SPSS software version 23. Descriptive analysis was performed using mean, standard deviation, frequency and percentages indexes. Then, Independent t-test, chi-square, and one-way ANOVA were used to examine the relationship between health literacy level and demographic factors. The significance level was considered as $P < 0.05$.

Results

The age range of the subjects was 23-65 years with a mean of 37.65 ± 8.40 years. Based on the results, 37.3% (78 people) were female and 62.7% (131 people) were male. In terms of education, 40.7% (85 people) had a bachelor's degree and 12.9% had a diploma and under the diploma degree (27 people). In this study, 60.8% (127 people) of participants were married, 82.3% (172 people) were under regular and supplementary insurance coverage, 44/5% (93 people) had less than 10 years work experience. and 64.1% (134 people) assessed their economic status as average. Also, the findings of this study showed that most of the participants received health and medical information by asking physicians and health care staff (33%, 129 people), the Internet (30.5%, 119 people), and radio and television (13.6%, 53 people), respectively. Health literacy was significantly higher in women and in those who evaluated their economic status as average compared to other participants in the study. Other demographic information of the subjects are shown in Table 1.

According to the findings from descriptive statistics, 2.4 %(5 individuals) of participants had low health literacy, 27.3% (57 individuals) had inadequate health literacy, 48.8% (102 individuals) had adequate health literacy, and 21.5% (45 individuals) had high health literacy. The mean and standard deviation of total health literacy score in the research units were 73.13 ± 12.29 from 100. Also, the mean and standard deviation of health literacy score were 75/38 ± 18/39, 72/34 ± 18/27, 81/22 ± 14/76, 68/36 ± 16/45 and 68/36 ± 16/01 in reading, access, understanding, assessment and decision making and behavior dimensions, respectively (Table 2).

The results presented in Table 3 are related to the mean and standard deviation of health literacy dimensions. They show that among the different dimensions of health literacy, the highest and lowest percentages of the mean score from the maximum achievable scores, belongs to understanding and decision making of health information.

In the present study, the results of independent t-test and one-way ANOVA on the relationship between different dimensions of health literacy and demographic variables of the units showed that the mean of access to health information and reading in women

was better than men, and the mean difference between the two groups was statistically significant (P <0.05). Among the different dimensions of health literacy, only the mean score of decision making and understanding of health information in age groups was significant (P = 0.008). In the age group of 23-33 years, the lowest mean and in the age group of 55-65 years, the highest mean was obtained. In examining the relationship between health literacy dimensions and type of insurance coverage, independent t-test showed a significant difference between the mean of decision-making score and the type of insurance coverage (P = 0.006). In addition, there was a statistically significant relationship between work experience and decision making and understanding of health information (P = 0.005) (Table 4).

Table 1: Comparison of average health literacy scores in terms of demographic variables in research units

Variables		Numbers(percentage)	Mean± Standard Deviation	Significance Level
Education Level	Diploma and Under Diploma	(12/9)27	12/39±70/74	* 0/28
	Associate degree and higher	(87/1)182	12/27±73/49	
Gender(Sex)	Female	(37/3)78	11/86±76/47	* 0/002
	Male	(62/7)131	12/16±71/14	
Marital Status	Married	(60/8)127	12/28±73/71	?0/37
	Single	(39/2)82	12/39±72/16	
Type of insurance coverage	Regular	(16/3/)34	11/93±72/71	* 0/79
	Regular and supplementary	(82/3)172	12/42±73/32	
Work experience	Less than 10 years	(44/5)93	12/92±71/90	* 0/19
	10 years and more	(55/5)116	11/73±74/12	
Age group	23-33	(42/1)88	12/87±72/44	** 0/57
	34-44	(34)71	11/70±72/91	
	45-55	(20/1)42	11/92±73/94	
	≥55	(3/8)8	12/67±78/51	
Economic Status	poor	(21/5)45	13/57±70/28	** 0/04
	Average	(64/1)134	11/22±74/72	
	Good	(14/4)30	13/94±70/30	

* Independent T test, ** One-way ANOVA test

Table 2: Health literacy status among employees of Khuzestan-ACECR

Health Literacy Level	Numbers	Percentage	Score Range
Low	5	2/4	0-50
Inadequate	57	27/3	50.1-66
Adequate	102	48/8	66.1-84
High	45	21/5	84.1-100

Table 3: Examining different dimensions of health literacy among employees participating in the study

Health Literacy Dimensions	Standard Deviation±Mean	obtained score range	Acquired score range	Mean percentage of maximum achievable score
Reading	2/9±16/06	4-20	4-20	80/3%
Access	4/38±23/36	30-12	6-30	78%
Understanding	4/13±29/74	35-16	7-35	84/86%
Assessment	2/63±14/93	5-20	4-20	47/65%
Decision making and Behavior	7/68±44/81	16-60	12-60	74/63%

Table 4: Relationship between demographic variables and different dimensions of health literacy in research samples

Demographic variables		Access (Standard Deviation±Mean)	Reading (Standard Deviation±Mean)	Understanding (Standard Deviation±Mean)	Assessment (Standard Deviation±Mean)	Deciding and understanding health information (Standard Deviation±Mean)
Gender	Female	3/78±24/44	2/76±16/93	4/14±30/34	2/76±15/39	6/72±45/61
	Male	4/60±22/71	2/93±15/54	4/10±29/38	2/51±14/66	/19±44/33
Significance level (independent t test)		0/006	0/001	0/1	0/06	0/24
Age Group	23-33	4/26±23/54	3/18±15/60	4/25±29/60	2/76±15/35	8/22±43/15
	34-44	4/38±23/22	2/8±16/28	3/96±29/76	2/31±14/61	7/13±44/81
	45-54	4/96±23/11	2/48±16/45	4/23±29/78	2/71±14/45	6/86±47/45
	55 and more	4/70±23/87	3/31±17/12	4/38±30/87	3/01±15/75	5/84±49/12
Significance level (one way ANOVA test)		0/92	0/22	0/87	0/14	0/008
Type of insurance Coverage	Regular	4/13±24/20	2/98±15/82	4/49±29/58	2/42±15/41	8/93±41/67
	Regular and Supplementary	4/43±23/19	2/95±16/14	4/08±29/74	2/68±14/83	7/23±45/57
Significance level (independent t test)		0/22	0/56	0/78	0/24	0/006
Work experience	Less than 10 years	4/39±23/43	3/09±15/75	4/13±29/46	2/81±14/92	/7/86±43/17
	10 years and more	4/39±23/31	2/80±16/31	4/13±29/96	2/49±14/94	7/31±46/12
Significance level (independent t test		0/84	0/17	0/38	0/94	0/005*
Economic Status	Poor	5/11±22/04	2/76±15/75	4/08±28/71	2/90±14/93	9/03±43/31
	Average	3/98±23/72	2/68±16/45	3/95±30/22	2/41±15/02	6/7±45/64
	Good	4/70±23/73	3/86±14/76	4/71±29/13	3/18±14/56	9/23±43/33
Significance level (one way ANOVA test		0/07	0/01	0/07	0/69	0/11

Discussion

This study aimed to assess the level of health literacy in employees of Khuzestan-ACECR. According to the findings of the study, most of employees had adequate health literacy. In addition, the lowest mean of health literacy among participants belongs to assessment dimension and the highest mean of health literacy belongs to decision making and understanding health information among participants. In line with the findings of this research, Ghanbari et al. reported good health literacy among 57% of employees (1). In the study of Mashmouli et al. (16), the majority of participants had adequate levels of health literacy. In Solhi et al. (15) and Ghanbari et al (1) studies, decision making dimension had the highest and assessment dimension had the lowest mean score which is in line with the findings of this study. However, Solhi et al. in their study (title: Assessment of health literacy of municipal employees in Shemiranat, Iran (showed that the health literacy status among the staff was inadequate (15). In the research of Khoshravesh et al. (4), health literacy of employees in Hamadan University of Medical Sciences was reported at the borderline level (4). The difference in the results are maybe due to the different conditions and characteristics of the studied community and the different environment and working conditions of individuals.

In this study, there was a significant relationship between health literacy, economic status and gender of participants. Health literacy was significantly higher in women and in those who evaluated their economic status as average compared to other participants in the study. These results are in line with the findings of Pashaeypoor et al (13) and Saatchi et al. (5). In addition, the results of the present study showed a statistically significant relationship between the gender, access to information and reading dimensions as well as the mean score of these dimensions in women was higher than men.

In Mohammadi Farah et al. (17), Panahi et al (6) and Hosieni et al. (18) studies, health literacy was higher in women as compared to men. Some studies have reported different results from the findings of this study, including studies by Maleki et al (19) and Khosravi et al. (20). In these studies, men had a higher level of health literacy than women. Perhaps this discrepancy is due to differences in the target group and their characteristics including education. In these studies, the level of men›s education is higher than that of women. Also, most studies have reported the education level as a predictor of health literacy (19).

Other findings of the present study indicate that there is a statistically significant relationship between age and dimension of decision making and understanding of health information; and with increasing age, health literacy also increased. Similarly, in the study of Solhi et al. (15), there was a statistically significant relationship between dimension of decision making, age and participants with higher age of 46 years that had better health status. In the study of Naghibi et al (21), the decision-making dimension had statistically significant relationship with age. However, the highest and lowest scores were reported in the age group of less than 20 years and more than 50 years, which is not consistent with the findings of the present study. The reason for this can be attributed to the diversity of studied target groups and their characteristics. In this study, most of the employees had bachelors and higher

degrees. In the study by Naghibi et al, most of the participants were housewives and had less education level than young people and employees. Also, high school students and university students had the highest mean health literacy in all dimensions after the employed.

In the present study, there was a significant relationship between the decision making dimension and application of health information and type of insurance coverage. So, the mean score of decision making and application of health information in individuals who were covered by both regular and supplementary insurance was reported more than those who were only covered by regular insurance. In the study of Ghanbari et al., the health literacy status of those who had supplementary insurance was reported as good (1).

Also, the results of this study showed a significant relationship between decision making and understanding of health information dimension and work experience. The mean score of decision making and understanding of health information dimension in participants with a 10 years and more work experience was higher than other employees and was consistent with the findings of Solhi et al. (15). This finding can be explained in such a way that with increasing work experience and increasing age, employees will have more opportunities to interact and communicate with others and experience more.

In addition, the results of this study showed that the understanding dimension had the highest level, while decision making and understanding of health information dimension had the lowest level of the maximum achievable score. In this regard, in the study of Khoshravesh et al. (4), understanding dimension is more desirable than other dimensions, which is consistent with our research findings; but assessment and reading skills had the lowest percentage of the maximum achievable score.

One of the study limitation is the self-report of the research tool, which may not reflect the actual performance of individuals. In this research, only employees of Khuzestan-ACECR participated which may restrict the generalizations of this study to other employees. The cross-sectional and short duration of the study was one of the other limitations.

Conclusion

In general, the findings of this study showed that most participants in the research had adequate health literacy. There was a significant relationship between the decision making and understanding of health information dimension with age, type of insurance coverage and work experience of employees. Also, there was a significant relationship between the access dimensions to health information and reading with gender. Health literacy is important in terms of general health and health promotion like clinical care (23), and is one of the most important components in promoting community health (24). Therefore, proper educational planning and paying attention to the above-mentioned variables are necessary in order to maintain and improve the employees' health literacy level.

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