

## Measuring Health Literacy of Elementary School Teachers in Shahrekord

### ABSTRACT

**Background and Objective:** Determining the health literacy level of teachers and their awareness of health-related issues helps to identify and meet the educational needs of students. The aim of this study was to determine the health literacy of elementary school teachers in Shahrekord.

**Materials and Methods:** In this cross-sectional study, 60 Elementary school teachers in Shahrekord were selected via consensus sampling in 2017. Data were collected using questionnaires on demographic characteristics and health literacy (TOHFLA). Data were analyzed by SPSS Version 18 and descriptive and inferential statistical tests (e.g., linear regression analysis and Pearson correlation).

**Results:** The results showed that the mean score of health literacy in numerical ability test was  $76.17 \pm 17.67$  and for reading comprehension skill was  $63.34 \pm 38.29$ . Also, the mean score of total health literacy was obtained  $73.60 \pm 17.74$ . 60% of teachers in the numeracy part and 48.3% of them in the reading comprehension part had borderline health literacy level. There was a significant relationship between health literacy and age / economic status ( $P = 0.05$ ). The results of multiple regression analysis indicated that age is the main predictors of health literacy ( $\beta = 0.096$ ,  $P = 0.044$ ).

**Conclusion:** Regarding the moderate level of teachers' health literacy and its relationship with health literacy of students in schools, it is necessary to Design, implement and evaluate Targeted educational interventions related to health literacy.

**Paper Type:** Research Article

**Keywords:** health literacy, teacher, school

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## Introduction

Health literacy is defined as the capacity of individuals to acquire, interpret, and understand health information for decision-making and the proper functioning of the health issues. It has been highlighted as a key component in establishing an appropriate relationship (1).

A wide range of individuals around the world has inadequate health literacy. According to the study by Orlow et al., nearly half of the population (46%) worldwide have limited health literacy (2). according to the studies in Iran, a large number of people have limited health literacy. Research results in Isfahan showed that 53.3% of adults have limited health literacy (3). National research results also indicate that the level of health literacy is inadequate for more than 56% of adults in the country (4). Zareban et al. in their study showed that only 32.4% of women had an adequate level of health literacy and most of them had inadequate health literacy level (5). Dadipoor et al. Reported in their study that most Iranians do not have a good level of health literacy and only 27% of women had an adequate level of health literacy (6).

Limited health literacy is associated with adverse consequences. Based on the results of the studies, limited health literacy in individuals is related to issues such as inadequate understanding of health information and medical education (7-9), failure to follow the recommendations provided by health professionals and lack of participation in preventive behaviors (10). Late Detection of diseases (11), inability to self-care skills (12) and lack of adherence to healthy lifestyle behaviors (13) are found to be more in people with inadequate health literacy. Also, the prevalence of chronic

diseases (14), the number of physician visits and hospitalization are higher in individuals with inadequate health literacy (15). Generally, these people impose more medical expenses on the health system (16).

Although there have been many studies and activities on health literacy and related challenges in recent decades and there are many data available in this area, the main focus of these studies has been on patients and educators and teachers have been less focused. Indeed, schools can play an important role in promoting community health literacy, but doing so depends on the level of teachers' health literacy. In other words, teachers must have adequate health literacy to promote both their health and the student's health and ultimately the health of the community (17).

Teacher's health literacy is the ability of teachers to achieve, interpret, and understand health services along with the ability to use this information and health services in a manner that improves the learning of concepts and health skills in students (18).

Researchers have developed different tools for measuring health literacy, each of which measures a specific aspect of health literacy (3). Among these tools, the TOFHLA questionnaire: Test of functional health literacy in adults (3, 4 and 19) and HELIA: Health Literacy for Iranian Adults (20, 21, 24 and 25) are the most commonly used questionnaires. The TOFHLA questionnaire addresses the ability of individuals to read and understand health-related concepts (3). The HELIA questionnaire examines the ability of individuals in different levels of health literacy (reading, access, understanding, assessment and decision making, and

application of health information) (21).

It is worth mentioning that none of the tools have considered cultural and linguistic differences as well as underlying knowledge of individuals for health literacy assessment. However, health literacy should be considered not only at the individual level but also in the health system level. Traditionally, people accept physicians as professionals who should obey their instructions. This traditional belief is changing due to progress in the health system and in various fields because individuals tend to contribute to decisions about their health.

Considering that a comprehensive study has not been conducted to assess the level of teachers' health literacy to be the decision basis for design and implementation of programs aimed at improving health literacy, this study aimed to assess health literacy of elementary school teachers in Shahrekord.

### Materials and Methods

In this cross-sectional study, 60 elementary school teachers in Shahrekord were selected via consensus sampling in 2017. The inclusion criteria for entering the study were full and informed consent of teachers and Iranian citizenship. Also, incomplete questionnaires were considered an exclusion criterion. The researcher after entering the schools, following the initial coordination and obtaining a referral, introduced himself and expressed the research goals and familiarized the teachers with the way of completing the questionnaire. Also, the confidentiality of the responses and the lack of need to write the first name were explained. Teachers could refrain from participating in research and completing questionnaires.

The data collection tool in this study

included two parts. The first part related to the demographic characteristics of teachers (age, gender, education level, marital status, and economic status). The second part was related to the assessment of health literacy based on the TOFHLA questionnaire. TOFHLA is one of the most valid health literacy questionnaires in the world. The questionnaire consists of two sections of computational and reading comprehension.

The computational section measures the individual's ability to understand and act on the basis of the recommendations that physicians and health educators provide to him and needs calculations. This section has 5 prescriptions for drugs, the physician visit time and an example of the outcome of a medical examination. These explanations were given to teachers in the form of cards and relevant questions were asked. The individual score in this section was between 0 and 50.

In the reading comprehension section, the participants' ability to read and understand 3 texts under the heading of the preparation for the upper gastrointestinal image, the rights, and responsibilities of the patient in the insurance forms and the standard form of hospital consent were examined. In this section, the score was considered to be between 0 and 50.

From the total scores of these two sections, the total health literacy score (which is a number from 0 to 100) was calculated. Finally, the functional health literacy score of the subjects was divided into three levels: inadequate (0-59), borderline (60-74) and adequate (75-100). The reliability of this questionnaire was 0.79 in the computational section and 0.88 in the reading section.

Finally, the data were analyzed by SPSS

software version 18 using descriptive and analytical tests such as Pearson correlation test and linear regression analysis (health literacy as a dependent variable and demographic variables as independent variables) at a significant level less than 0.05.

## Results

The results of this study showed that 65% of teachers participated in the study were females and the rest were males. The mean age of the teachers was 40.97 years. 93.3% of them were married and 6.7% were single. 75% of the participants had a bachelor degree and 63.3% of the teachers reported moderate level of economic status (Table 1).

**Table 1. Demographic characteristics of the teachers participating in the study**

Variable	Sub-groups	Number (%)
Age (years)	30-35	10 (16.7)
	35-40	18 (30.0)
	40-45	18 (30.0)
	45-50	14 (23.3)
Gender	Male	21 (35.0)
	Female	39 (65.0)
Marital Status	Single	4 (6.7)
	Married	56 (93.3)
Education Level	Associate	8 (13.3)
	Bachelor	45 (75.0)
	Masters and more	7 (11.7)
Economic Status	Poor	13 (7.21)
	Average	38 (3.63)
	Good	9 (0.15)

The mean of health literacy score in the computational and reading sections was

76.17 ± 17.67 and 63.33 ± 38.29, respectively. Also, the mean of the health literacy score was 73.60 ± 17.74. Moreover, 60% of teachers in the computational section and 48.3% of them in the reading section had borderline health literacy (Table 2).

**Table 2. Frequency distribution of health literacy in teachers**

Variable		Number (%)		
		Inadequate	Borderline	Adequate
Health literacy dimensions	Computational	11 (18.3)	36 (60.0)	13 (21.7)
	Reading	19 (31.7)	29 (48.3)	12 (20.0)
Total health literacy		10 (16.7)	37 (61.7)	13 (21.6)

In this study, there was only a significant relationship between health literacy and teachers' age and economic situation. Thus, with the improving economic level, the health literacy level also increased. Moreover, teachers in the age group of 35-30 years reported higher health literacy (Table 3).

**Table 3. Relationship between teachers' health literacy and demographic variables**

Variable	Age P-value	Gender P-value	Education P-value	Economic Status P-value	Marital Status P-value
Health Literacy	P= 0.045 * r=0.254	P=0.856 r= 0.028	P= 0.394 r= 0.132	P= 0.032 * r = 0.324	P= 0.557 r= 0.091

The linear regression analysis was used to assess the predictive value of health literacy by demographic variables. In general, the predictive power of this study was 0.309 and only age was significantly predictive of health literacy (Table 4).

**Table 4. Regression analysis results of teachers' health literacy and demographic variables**

Variable	Standard Error ( $\beta$ )	Standard Error Coefficient (B)	Significance level	The coefficient of determination ( $R^2$ )
Age	0.096	5.65	0.044	0.309
Gender	0.078	2.75	0.482	
Education Level	0.129	3.75	0.612	
Economic Status	0.047	3.33	0.335	
Marital Status	0.328	3.54	0.737	

## Discussion

This study was conducted to determine the health literacy of elementary school teachers in Shahrekord. The results of this study showed most teachers had borderline health literacy level. This result is consistent with the results of studies conducted by Abdolmalaki et al (22), Tehrani et al. (23), Afshari et al (24), Naghibi et al (25) and Panahi et al. (26). Tavousi et al. reported that 44% of adults had limited health literacy (27). In their study on students at Farhangian University, Ahmadi et al. reported high borderline health literacy level (18) which is in line with the results of this study. Khoshravesh et al. reported health literacy staff at the University of Medical Sciences (28) and Eftekhari et al. reported the health literacy of health volunteers as inadequate (32).

However, Ghanbari et al. (30) reported that the level of health literacy in the target group was moderate and well. The probable reasons for these results are the high level of awareness among staff about health issues and their proximity to health professionals. Mohammadi Farah et al. (31) also reported the health literacy of the students of the University of Medical Sciences as good. Ghaffari et al. also reported the female

health literacy referred to health centers as adequate (31), which contradicted the results of this study.

The results of this study showed that there was a significant relationship between age and the health literacy, so that lower age groups had higher health literacy. Javad Zade et al. (3), Lee et al. (33), Eftekhari Javani et al. (29) also consistently concluded that inadequate health literacy is common in older people. However, Sharif Moghadam et al. (34) reported that with increasing age of students, their health literacy status was more adequate. This difference could be due to reading relevant lessons in health issues. Afshari et al. (24) and Ahmadi et al. (18) also pointed out that higher health literacy is associated with increasing age. The reason for these findings could be due to differences in the studied population.

Also, in the present study, there was a significant relationship between health literacy and teachers' economic status. Thus, with improving economic status, health literacy will be more desirable. Saatchi et al. (35), Ghanbari et al. (30) and Tiller et al. (36), consistent with the results of the present study, reported that individuals with a higher economic level had better health literacy.

The results of this study showed that health literacy in females participating in the study was higher than that of men, but this difference is not statistically significant. In line with the results of this study, Khoshravesh et al. (28) and Baker et al. (37) concluded that there was no significant difference between men and women in terms of health literacy level. However, Mohammadi Farah et al (31), Ahmadi et al. (18) and Afshari et al. (24) reported higher levels of women's health literacy. The following probable reasons

can be stated for higher health literacy in women than men: more women refer to health centers and acquire information, more understanding and use of information.

The results showed that teachers with higher education level and married people had a higher level of health literacy, but it was not statistically significant. In line with this result, Mohammadi Farah et al. (31), Ahmadi et al. (18), Khoshravesh et al. (28) also reported that health literacy level is higher in married individuals than single individuals. Higher education provides more opportunity for acquiring information, understanding and evaluation, and proper health-related decision making. It provides a more favorable context for increasing health literacy and employing perceived and well-informed information.

Considering the higher levels of health literacy among married individuals, these people seem to have more access to health-related information due to having wider social networks and more connections and can make better health decisions. Moreover, because of the commitment of these people to their health and other family members, having access to health information and their proper use is more important to them. They are more motivated to seek and understand the use of health-related information which can enhance the health of individuals. In general, the predictive power in this study was 0.309. In regression analysis, only the predictive power of age for health literacy was significant. One of the limitations of this study is the self-reporting questionnaire. Also, some teachers were reluctant to participate in the study and completed the questionnaire due to their lack of time.

## Conclusion

In general, the results of this study showed that the level of health literacy of elementary teachers is at the borderline level. Certainly, teachers are the ones who have the most important responsibilities in the education of students; so neglecting their level of health literacy will lead to the huge loss. The low level of health literacy in teachers will not only affect the health of students and teacher but also negatively impact their educational performance and will reduce the student's academic achievement. Hence, it is necessary to pay special attention to health literacy and health promotion programs of teachers and considering the teacher's skills and interests, effective educational approaches to improve their level of health literacy in society should be designed and implemented.

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