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Health Literacy and Its Related Factors in Non-medical College Students

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ABSTRACT

Introduction: Health literacy plays a vital role in health education and health promotion and has received increasing attention as a means to improve health outcomes and reduce health inequality. The students' awareness of health literacy and their weaknesses in this area are essential for educational planning.

Objective: This study aimed to investigate the health literacy of non-medical college students and it's affecting factors.

Materials and Methods: This is a correlational study conducted on 250 non-medical students at the Islamic Azad University of Rasht branch, Rasht City, Iran in the academic year 2018-2019. They were selected using a random sampling method. The data collection tool was the Health Literacy For Iranian Adults (HELIA) questionnaire. The collected data were analyzed using the descriptive and analytical statistics (t-test, the Pearson correlation test, and the Chi-square test).

Results: The Mean±SD of the HELIA score was 68.44±12.72 (out of 100). About 6.8% of students had inadequate health literacy, 29.6% problematic health literacy, 54.4% adequate health literacy, and 9.2% excellent health literacy. Students had the highest score in the dimensions of understanding Mean±SD (77.11±15.82) and access Mean±SD (72.35±16.73), while in decision-making and applying health information Mean±SD (55.62±15.01) they had the lowest score. There was no statistically significant correlation between students' age and health literacy scores, but a statistically significant relationship was reported between their gender and health literacy levels (P=0.049). The Internet (54.8%) and physicians and health workers (27.2%) were the most important sources of information about health for students.

Conclusion: Many students lacked sufficient health literacy. Since most of them received information about health issues through the Internet, educational health programs and contents can be provided to them through the Internet and social networks.

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Highlights

- Health literacy means more than being able to read pamphlets and make appointments.
- Health literacy is important because knowledge is power.
- Low health literacy is associated with a variety of adverse health consequences and improper use of health services.
- We can increase health literacy by developing and improving methods to measure health literacy, collating and distributing examples of best practice in health literacy intervention development, and providing evidence of what works, in which contexts, and why.

Plain Language Summary

Although health is highly dependent on an efficient healthcare system, relevant empowerment of the population to meet complex health-related demands is especially important. The main idea of health literacy is to understand the value of health, to take an active interest in health issues, to take responsibility for it, and to be properly informed about the system of health care. Recently, a broader and more inclusive definition has been given based on the European Health Literacy Survey (HLS-EU), stating that health literacy is linked to literacy and entails people's knowledge, motivation, and competences to access, understand, appraise, and apply health information to make judgments and make decisions in everyday life concerning health care, disease prevention, and health promotion, and finally to maintain or improve quality of life during the life course. Health literacy represents the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand, and use information in ways which promote and maintain good health. This understanding of information creates an individual's ability to make appropriate decisions to maintain better health. In contrast, the inability to understand them makes it difficult to effectively manage health needs.

Introduction

Today, health literacy is recognized as an important and vital indicator of health care. Health literacy is defined in different ways because of the complexity of its concept [1]. One of the most widely-used definitions of this concept was provided by the World Health Organization (WHO), the cognitive and social skills which determine the motivation and ability of individuals to gain access to, understand, and use information in ways which promote and maintain good health [2-4]. In another definition, health literacy is an individual's capacity to acquire, understand, and interpret basic information and health services that are necessary for appropriate decision making [5]. Health literacy is not an individual responsibility; health care systems, services, and professional sectors should provide the necessary facilities to promote health literacy in the wider population [6]. Accordingly, the WHO in a report has introduced health literacy as one of the key social determinants of health [7].

Health literacy is divided into three main groups: basic functional health literacy, communicative interactive health literacy, and critical health literacy, which include the ability to read and write, to extract information and meanings from communication sources, and to exert greater control over life events [8]. Therefore, adequate health literacy can empower individuals such that they can play an active role in changing their environment and positively affect health [9]. Inadequate health literacy, on the other hand, is associated with poorer personal health, inappropriate use of medications and noncompliance with the physician's orders, poorer control of blood sugar level, and increased individual reports of problems related to poor control. Moreover, low health literacy can lead to less participation in treatment decisions, less expression of health-related concerns, and worse communication with physicians [10]. In other words, people with low health literacy are less likely to understand the basic information provided by health professionals and follow their orders; hence, they incur higher medical costs, more hospitalizations, and less preventive measures [11].

Regarding the level of health literacy in students, it is often assumed that students have sufficient health literacy, but the findings of Panahi showed that health literacy of more than one-third of students was inadequate [1]. The results of a study on health literacy in 5 provinces of Iran (Tehran, Mazandaran, Qazvin, Kermanshah, and Bushehr) showed that only 28.1% of people had adequate health literacy, and the level of health literacy in women was higher than men [12]. The results of another study on medical students in Hamedan, Iran also showed that 50.5% of students had adequate health literacy and in 3.9% of them, it was inadequate. The subjects had obtained the most information about their health through the Internet [13]. The results of a study on non-medical students in Isfahan, Iran also showed that 2.4% of students had inadequate health literacy and 32.3% of them had problematic health literacy [14]. Gender, level of education, place of residence, and economic situation are the most important factors whose effects have been examined on different populations. Of these factors, the educational level and economic status have been mentioned as two factors affecting health literacy [11-15].

Reaching a high level of health literacy in the community is an important and vital goal that can be achieved with appropriate interventions. Hence, community health professionals should consider this issue. Students are a group of community who, due to their important role as future managers and policymakers, can contribute to a healthier society by having higher health literacy [14]. Because of the increasing number of students in society, it is important to recognize the factors affecting their health-related behaviors. To develop health and design educational planning, it is necessary to be aware of the level of health knowledge and weaknesses of people's health literacy. This study aimed to determine the level of health literacy in non-medical students at the Islamic Azad University of Rasht Branch, Rasht City, in north of Iran. Medical and paramedical students have already received health-related information during their studies at the university; therefore, they were not studied.

Materials and Methods

This is an analytical and correlational study conducted on non-medical students at the Islamic Azad University of Rasht branch in the academic year 2018-2019. The sample size was calculated as 248 based on Krejcie and Morgan table and, therefore, 250 students were recruited for the study. The sampling was performed based on the quota sampling method from the students at different faculties (146 from the faculty of humanities and 104 from the faculty of basic sciences). The inclusion criteria were no history of study in fields related to medical sciences and willingness to participate in the study. Returning incomplete questionnaire was the exclusion criterion. The data collection tool was a questionnaire with two parts. The first part surveys demographic information (age, gender, semester, educational degree, school of study, occupation, and economic status), and the second part was the Health Literacy for Iranian Adults (HELIA) questionnaire designed by Montazeri et al. [10]. This tool is not for any specific class, occupation, education, and age group and can be used for different groups [16].

Montazeri et al. reported its acceptable validity and reliability. It has 33 items measuring health literacy in five areas of access (6 items), reading (4 items), understanding (7 items), appraising (4 items), decision-making, and applying health information (12 items). The items are scored on a 5-point Likert-type scale: for the reading dimension from 1=quite hard to 5=quite easy, and for measuring access, understanding, appraising, decision making, and applying health information from 1=never to 5=always. The total score ranges from 33 to 165. Based on the cut-off points, their health literacy was divided into four categories: inadequate (score 0-50), problematic (score 50.1-66), adequate (score 66.1-84), and excellent (84.1-100) [8].

Raw scores of each subject are obtained from summing up of their scores in each subscale and then are converted to a value ranged from 0 to 100. To obtain the total score, the total score calculated for each subscale is divided into 5. Finally, the sum of the scores of the two categories "problematic" and "inadequate" is reported as limited health literacy, and the sum of the two categories of "excellent" and "adequate" is reported as optimal health literacy [17]. It should be noted that the economic status of individuals is assessed in terms of their income and is divided into three categories: poor, moderate, and favorable. Questionnaires were completed by the participants after obtaining their informed consent. They were assured that their information would be kept confidential and be used only for research purposes. The collected data were analyzed in SPSS V. 23 using descriptive (frequency, mean and standard deviation) and inferential statistics (t-test, the Pearson correlation test, and the Chi-square test). The significance level was set at less than 0.05.

Table 1. Health literacy levels of students based on their demographic characteristics

Variables		No. (%)	Health Literacy No. (%)		Sig.
			Limited	Optimal	
Gender	Female	175 (70)	60 (34.3)	115 (65.7)	0.049*
	Male	75 (30)	31 (41.3)	44 (58.7)	
Occupational status	Unemployed	209 (83.6)	79 (37.8)	130 (62.2)	0.29*
	Employed	41 (16.4)	12 (29.3)	29 (70.7)	
Age (18-23y)	<20	86 (34.4)	37 (30.8)	49 (40.7)	0.22**
	20-25	147 (58.8)	50 (54.9)	97 (61)	
	>25	17 (6.8)	4 (4.4)	13 (8.2)	
Educational level	Bachelor degree	224 (89.6)	81 (36.2)	143 (63.8)	0.81*
	Master degree and higher	26 (10.4)	10 (38.5)	16 (61.5)	
Semester	1-2	157 (62.8)	61 (38.9)	96 (61.1)	*0.24
	3 or higher	93 (37.2)	30 (32.3)	63 (67.7)	
Marital status	Single	202 (80.8)	73 (36.1)	129 (63.9)	*0.68
	Married	48 (19.2)	18 (37.5)	30 (62.5)	
Economic status	Poor	48 (60.8)	20 (17.6)	28 (22)	*0.60
	Moderate	152 (19.2)	55 (36.2)	97 (63.8)	
	Favorable	50 (20)	16 (32)	34 (68)	
School of study	Faculty of humanities	146 (58.4)	2 (57.1)	39 (42.9)	*0.67
	Faculty of basic sciences	104 (41.6)	94 (59.1)	65 (40.9)	

*Chi2 test

**T student test

Table 2. Correlation between different dimensions of Health Literacy for Iranian Adults (HELIA) and its total score

Health Literacy Dimensions	Access	Reading	Understanding	Appraising	Decision-making and Applying Health Information	Total
Access	1					
Reading	0.41	1				
Understanding	0.60	0.54	1			
Appraising	0.53	0.34	0.45	1		
Decision-making and applying health information	0.31	0.37	0.41	0.39	1	
Total	0.72	0.68	0.79	0.66	0.77	1

*The Pearson correlation test, P=0.001

Results

The Mean±SD age of the participants was 21.49±2.42 years and 70% of them were female. The majority of them (89.6%) were studying at the undergraduate level and were in the second semester (42.8%). The mean score of health literacy in the subjects was 68.44±12.72 out of 100 points (ranged from 30.42 to 96.25). Also, 6.8% (n=17) had inadequate health literacy, 29.6% (n=74) problematic health literacy, 54.4% (n=136) adequate health literacy, and 9.2% (n=23) excellent health literacy. Overall, 36.4% (n=91) of the students had limited health literacy and 63.6% (n=159) optimal health literacy. Table 1 presents the health literacy levels of students based on their demographic characteristics.

Mean±SD of HELIA scores were as follows: in access dimension, 72.35±16.73; in reading, 66.55±21.73; in understanding, 77.11±15.82; in appraising, 70.57±16.17; and in decision-making and applying health information application, 55.62±15.01. These results indicate that the highest mean score was related to the dimensions of access and understanding, while the lowest mean score belonged to the dimension of decision making and applying health information application. The Internet (54.8%) and physicians and health workers (27.2%) were the most important sources of information about health literacy for students. The Chi-square test showed a statistically significant relationship between the source of information and health literacy (P =0.03). There was no statistically significant relationship between the age factor and the overall HELIA score and its dimensions. A significant relationship was reported between gender and health literacy (P =0.049) such that the majority of students with optimal health literacy (72.3%) were female; however, the health literacy level in students had no statistically significant relationship with their occupational status, educational level, marital status, and school of study. Table 2 presents other results of the correlation between different dimensions of HELIA and its total score.

Discussion

This study aimed to determine the status of health literacy in non-medical students and showed that the majority of students had optimal health literacy. This finding is in line with the results of some other studies that have examined students' health literacy [5, 13, 18]. A comparative study of two groups of medical and non-medical students showed that about half of non-medical students had inadequate health literacy and in general health, literacy was higher among medical students than in non-medical students [19]. The results of another study on non-medical graduate students of the Ferdowsi University of Mashhad showed that a quarter of these students had inadequate health literacy [20].

Considering that medical students become acquainted with health issues and terms during their studies and their knowledge in this field increases; hence, we can expect that health literacy is high among medical students. In the present study, the highest mean HELIA score was related to the dimensions of understanding and access and the lowest score was related to the dimension of decision-making and applying health information. This finding is consistent with the results of a study conducted on the students of Farhangian University [17]. Among the demographic variables, only the variables of gender and source of information had a statistically significant relationship with the health literacy of students. This finding is in agreement with the findings of a study that examined the health literacy of medical students [12].

Another study also showed that health literacy in students was significantly related to their gender where female students had higher health literacy than male students [18]. In contrast, the findings of a study in Guilan did not show a statistically significant relationship between gender and the level of health literacy in students [15]. Raisi et al. also reported higher levels of health literacy in men than in women [11]. Some other studies have shown a relationship between health literacy and gender and its higher level in females [17, 21]. However, it should be noted that 70% of students in our study were female.

In the present study, the majority of students mentioned the Internet as their main source of health information. The results of other studies also showed that most students obtain health information through the Internet and interacting with friends [16, 20]. Today, because of easy access to the Internet and widespread use of technology in universities, the desire to obtain information through the Internet has increased. In the present study, the statistical results did not show a significant relationship between the school of study and health literacy. In a study on students of Isfahan universities, a statistically significant relationship was found between the school of study and health literacy [21].

Perhaps the reason for the difference in results is related to the information that medical students acquire during their studies. It is therefore acceptable that they

have a better understanding of this type of information and a better relationship with health care providers. In the present study, although the relationship between age and health literacy was not statistically significant, the results showed that with increasing age, the desirability of health literacy in students increases. In a study conducted on students in Yazd City, Iran the results showed the variables of age and educational level as factors affecting health literacy [22]. The results of a study on the students of Farhangian University also showed that the level of health literacy increases with the older age [17]. This result may be partly related to the more time spent studying in older students and their increased experiences with health issues.

Health literacy is a key consequence of health education practices that should be considered in a broader sense. Evidence indicates that many adverse health-related outcomes are caused by inadequate health literacy. Inadequate health literacy may cause many complications in various areas of health, such as lack of access to appropriate health services, less tendency to follow treatment, low medication compliance, increased referrals to emergencies, increased length of hospital stay, and higher mortality rate. It has a significant impact on the use of health care services [23].

Although a significant percentage of students in the present study had optimal health literacy, their score was lower in decision-making and applying health information, which is the stage of putting knowledge into practice. In other words, they are less likely to follow and act based on the care programs proposed by the competent authorities. Therefore, comprehensive training is necessary to improve the health performance of these students. One of the limitations of the present study was its non-random sampling method. It is suggested that another study be conducted with a random sampling method to compare health literacy between medical and non-medical students. Moreover, it is suggested that proper planning be done by producing appropriate educational programs and making them available to students to promote their health literacy.

Ethical Considerations

Compliance with ethical guidelines

This study was approved by the Scientific Research Committee of Islamic Azad University of Rasht Branch (Code: 17/16/4/17814).

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This study was extracted from a research project approved by the School of Nursing and Midwifery, the Islamic Azad University of Rasht Branch in Iran.

Conflict of interest

The author declared no conflict of interest.

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