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The Health Literacy of Adults in Alborz Province in Iran

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ABSTRACT

Introduction: Health literacy is defined as the ability of an individual to acquire, interpret, and understand the basic information about health services and to use them. Health literacy is a strong predictor of health. Its low level is germane to health problems of people and society as well as economic costs. This study was designed to determine the level of health literacy considering socio-demographic factors in residents of Alborz province in 2015.

Methods: This is a cross-sectional study in which 465 people aged between 18 and 60 years old living in Alborz province were evaluated using two-stage random sampling technique (stratified and cluster sampling). In this study, Iranian Health Literacy Questionnaire (IHLQ) and socio-demographic Information Questionnaire were used to collect the required data. The data were analyzed using descriptive statistics as well as T-test, Mann-Whitney test, and Spearman correlation test using SPSS software.

Results: The mean age of participants was 36.57(±11.08) years old and 68.2% of them were female. 22.4% of people had adequate, 44.3% had a moderate, and 33.3% had a poor level of health literacy. Health literacy in all dimensions of IHLQ except individual empowerment and social empowerment was moderate. People's access to health information also was moderate. The T-test indicated that the health literacy score was significantly higher in the individuals with the educational level of diploma and higher (p= 0.000), in Persian people (p= 0.008), and in unemployed people (p= 0.006).

Conclusion: The high level of inadequate (moderate and poor) health literacy of 77.6% of the Alborz province population should be taken into consideration in health system policies to apply an effective strategy for promoting health literacy that results in better health status, regarding effective socio–demographic factors for each dimension of health literacy.

Keywords: Health Literacy, Adults, Iranian Health Literacy Questionnaire (IHLQ)

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Introduction

Health literacy is considered as the ability of an individual to acquire, interpret, and understand basic information about health and the use of health services. Health literacy includes a set of reading, listening, analyzing, decision-making skills, and the ability to apply these skills in health-related situations, and reflects the impact of this information on the incitement of individuals to accept or abstain from health measures and is not necessarily related to years of study or general reading ability of people [1]. Health literacy addresses health concerns and dimensions. Individual and social factors, the individual's potential and skills affect their health literacy. In addition, it can be modified by education and its adequacy which is influenced by culture, language, and health-related situations [2].

World Health Organization (WHO) also considers health literacy as "social and cognitive skills that motivate and enable people to gain access to, understand and use knowledge to improve and maintain good health" [3]. As researchers claim the role of health literacy in the health of community can be a stronger predictor of health compared to age, income, employment status, educational level, and race [1]. Health literacy is strongly affected by age, education, culture, and access to resources. Health literacy requires basic literacy skills like math and also knowledge of health issues [3]. Because of rapid development of health science, even people with advanced literacy skills can be suffered from health information [4]. Health literacy can be applied to empower individuals and communities [5]. Studies conducted all over the world indicate that people do not enjoy a good command of health literacy [1]. A systematic review showed that Iranian health literacy was inadequate and borderline [6]. A survey in five provinces of Iran using Test of Functional Health Literacy in Adults (TOFHLA) also reported that 56.6% of the individuals had inadequate health literacy [2]. The European health literacy survey (HLS-EU) conducted in eight countries, showed that 59% of people have insufficient and limited health literacy [7]. Lower levels of health literacy will increase the probability of experiencing negative health outcomes to 1.5 to 3 times. Regarding other consequences of lower literacy and lower health literacy; lower income and lower social participation can be mentioned that can in turn be in combination with lower health and quality of life [8]. The results of diverse studies indicate the significant relationship between health literacy and healthy behavior [9-11].

Lower health literacy also has a high economic impact on society and imposes a large number of additional costs on health systems [12, 13]. Considering the viewpoint of health professionals, the health literacy approach should be organized in such a way as to ensure that their health messages, programs, services, and policies can be delivered to and implemented by target audiences and it is not exaggerated to claim that the end result of health education and communication is to increase the level of health literacy [14]. Unfortunately, in our country, the most frequent studies in this field have been conducted using the TOFHLA questionnaire, and have assessed health literacy in the clinical and therapeutic point of view than from health point of view [15]. Increasing the level of health literacy is surely effective in improving the life expectancy, the health of individuals and benefiting from services. Health literacy assessment should be considered in the health system's plans and policies to reflect the level of health literacy and the proper application of the health care system.

We need to improve the culture level of people by implementing the necessary educational programs and enhance their community health literacy. To hit this target, health services require a close co-ordination of the health system, education, and the media.

The present study was conducted on 465 residents in the cities and villages of Alborz province using a standardized questionnaire designed to assess the health literacy of people aged between 18 and 60 years old primarily from health viewpoint. In addition to investigating this very important indicator, this study strived to present a good model of effective factors in health literacy and to propose a proper planning framework for appropriate training and interventions based on the needs of the community and individuals using the level of health

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literacy of the residents of the province and identifying groups with lower levels of health literacy. To determine the extent of improving health literacy over the time, the need for sequential information on this phenomenon in the community is required and this study can be considered as a part of this process.

Methods

This is a cross-sectional study in which the level of health literacy of residents of Alborz province has been evaluated. Conducting the research, people aged between 18 and 60 years old living in urban and rural areas of Alborz province enrolled in the study after they were provided with the required explanations by the interviewers regarding the voluntary participation in the study, confidentiality of information, and the purpose of the study. Taking into consideration the frequency of 28.1% for adequate health literacy [2] and according to the formula "Estimating the proportion of a qualitative attribute in a society", a sample size equal to 311 ones was obtained which increased to 465 individuals given the design effect of about 1.5.

The instrument for data collection was Iranian Health Literacy Questionnaire (IHLQ), which included the following areas: Reading skills (5 items), Comprehension skills (7 items), Judgment and assessment skills (6 items), Communication/decision making skills (8 items), Health Knowledge (5 items), Individual empowerment (6 items), and Social empowerments (4 items). Questions related to the source of health information and accesses to them were also used.

Designing and determining the validity and reliability of the questionnaire has already been carried out by Dr. Haghdoust et al. This questionnaire has an appropriate validity and reliability to measure the health literacy of Persian people [16]. The questions in the questionnaire were scored based on a Likert scale. It should be noted that the score of each area ranged from 0 to 20. Furthermore, the scores below 10 were considered as weak, 10 to 14 moderate, and over 14 as adequate health literacy. Seven questions were included in the questionnaire to study the socio-demographic characteristics of the participants including age, gender, ethnicity, occupation, level of education, and residency of the participants.

In this study, the sample size was determined proportionate to the resident population in each area and based on the census of the year 2011. Then, after receiving the necessary training, the interviewers were asked to collect the required data using in-person interviews (based on regular selection pattern) to form the clusters (residential passes) in a number of points that were selected randomly from the urban and rural map. In this study, literate people filled out the questionnaire by themselves and for the illiterate individuals, the questionnaires were completed by the interviewer in person. After the questionnaires were completed and received, the data were analyzed using SPSS statistical software. Descriptive analyzes including mean and standard deviation, frequency and percentage, as well as analytical tests including T-test, Mann-Whitney, and Spearman correlation were used to analyze the data.

Results

The mean age of participants was 36.57 years old (±11.08), with a range of 18 to 60. 68.2 percent of participants were female, 44.7 percent of them were housewives, 72.8% had a diploma degree and higher and 55.3% was Persian. The frequency of the socio-demographic characteristic of the participants is depicted in Table 1.

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Table 1. Socio-demographic characteristic of the participants

Demographic characteristic	Frequency(Percentage)
Gender	
Male	148 (31.8)
Female	317(68.2)
Ethnicity	
Persian	256(55.3)
Turkish	108(23.3)
Others	99(21.4)
Occupation	
Student	63 (13.7)
Temporary and permanent job	142 (21)
Housewife	205 (44.7)
Unemployed	21 (4.6)
Retired	28 (6.1)
Education	
Illiterate	10 (2.2)
Primary school/ reading and writing	28 (6)
Primary /guidance/ high school	88 (19)
Diploma and associate of art	195 (42.1)
Graduate and higher	142 (30.7)
Residency	
Urban	428(92)
Rural	37(8)

The frequency of health information sources and the frequency of access to health information sources are presented in Table 2.

Table 2. The frequency of health information sources and access to health information sources

Access to / Source of health information in the last month	Access to health information Frequency(Percentage)	Source of health information Frequency(Percentage)
Physicians and health care staff	282 (60.6)	269 (57.8)
Radio and television	251 (54)	332 (71.4)
Newspaper and magazine	380 (81.7)	170 (36.6)
Internet	232 (49.9)	238 (51.2)
Booklet, pamphlets, educational and promotional brochures	187 (40.2)	171 (36.8)
Asking friends and relatives		278 (59.8)

The most common source of health information was “radio and television” and the highest access to health information was related to “newspaper and magazine”.

The mean score of access to health information was 11.45 (±5.86). Bivariate correlation showed a direct correlation with the score of health literacy (Spearman correlation coefficient= 0.48 and p= 0.000). There was non-significant reverse correlation with age (Spearman correlation coefficient= -0.37 and p= 0.42). Mann Whitney test demonstrated significant and higher score of access to health information in the individuals with the educational level of diploma and higher (p= 0.000), in female (p = 0.014) and in Persian (p= 0.027). The score was not statistically different between people living in rural and urban areas (p= 0.91) and between unemployed and employed ones (p= 0.36).

The health literacy questions related to each area are provided in Table 3.

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Table 3. The questions of Iranian Health Literacy Questionnaire (IHLQ)

Ability to read Persian health -related contents (ability to read)
Booklets, leaflets and educational, and promotional brochures on health and disease
Written instructions for doctors, dentists and healthcare workers about health and disease
Medical and dental forms (such as the patient's admission form, consent, file, etc.) in the healthcare hospital)
Written contents on educational boards in hospitals, clinics , and health centers
Guidance sheet entries and preparation for testing, ultrasound or radiology
Understanding the meaning of Persian content in health resources (ability to understand)
Symptoms and thoughts are written on educational boards in hospitals, clinics ,and health centers
Entries posted on the guideline before examination, ultrasound or radiology
Professional's talk about health and disease on the radio and television
Health and disease- related issues via the Internet and electronic resources
Health and nutrition information in the newspapers, booklets, pamphlets and training brochures
How to take medication in the packaging or on the packaging of medications written by the manufacturer or doctor of pharmacy with a legible handwriting.
physicians and staff talk at health centers about the illnesses or problems that you have been referring to
Understanding and interpreting the following information as much as possible to explain to others (judgement and assessment)
Information provided on TV and radio
Information provided on the Internet
Physicians and healthcare recommendations
Information provided in booklets, pamphlets, educational brochures and promotions on health
Information provided in newspapers and magazines
Recommendations from friends and relatives about health and disease.
Assessing your ability in the following areas (ability for decision-making and communication).
I can complete the information requested in medical and dental forms (such as the patient's consent form, consent, filing, etc.) without the help of others.
I can transfer the health information I have learned to others if I am sure they are correct.
I take full benefit of the antibiotic drugs prescribed by the doctor for my illness, even if the disease has not disappeared.
If any of my immediate family members have been diagnosed with some cancers (such as skin, stomach, breast, prostate, etc.), I will go to the doctor for examination.
Even if I have no symptoms, I will go to a doctor for check-ups (annual examinations).
In every situation, I take care of my health.
If I do not understand what the health personnel (physician, nurse, etc.) tell me, I will ask for more information.
I pay attention to the value of food when I am buying food.
Health knowledge
Is the weight of 80 kg normal for a 40 -year-old person with a height of 165 centimeters?
Is fasting blood glucose 90 milligrams per deciliter normal for a healthy person at age 30?
Is the level of blood pressure (15 in 9) normal in a healthy person at the age of 60 years old?
When you are going to take 80 milligrams (one 20 milligrams per day) daily as your doctor recommended, how many pills will you take every day?
When the doctor recommends taking an antibiotic capsule three times a day, you ...
Individual empowerment
Blood pressure measurement with a barometer
Blood Glucose Measurement at Home (Glucometer)
Body temperature measurement with a thermometer
Pulse rate measurement

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First aid including resuscitation in emergency situations

If I happen to be in a scene of a road accident where the emergency center has not yet come, I will be able to help the people in the accident.

Social empowerment

It's easy for me to join a sport club or a gym.

In the case of recalls by organizations, I will take part in the program to clean the environment or public walkways.

In the case of recalls by health centers to attend a discussion about health problems in my neighborhood, I will attend the meeting.

When selecting people for candidates of political affairs, such as the presidency, parliamentary representation and the city council, it is important for me to take into account their health priorities.

The mean and standard deviation of each area with the frequency of health literacy levels are presented in Table 4.

Table 4. Descriptive statistics of the investigated dimensions of health literacy

Dimensions	Mean (S.D)	Enough health literacy N (%)	Moderate health literacy N (%)	Weak health literacy N (%)
Reading skills	12.72 (4.65)	164 (35.3)	173 (37.2)	128 (27.5)
Comprehension skills	12.76 (5.03)	210 (45.2)	135 (29)	120 (25.8)
Judgment and assessment skills	12.34 (5.65)	193 (41.5)	128 (27.5)	144 (31)
Communication/decision making skills	13.18 (4.38)	203 (43.7)	171 (36.8)	91(43.7)
Health Knowledge	12.78 (5.43)	214 (46)	114 (24.5)	137 (29.5)
Individual empowerment	6.96 (5.49)	54 (11.6)	111 (23.9)	300 (64.5)
Social empowerment	8.59 (5.41)	89 (19.1)	138 (29.7)	238(51.2)
Total	11.35 (3.34)	104 (22.4)	206 (44.3)	155 (33.3)

Bivariate correlation showed that the score of health literacy had a reverse but the statistically non-significant correlation with age of the people (Spearman correlation coefficient= -0.08 and p= 0.058). The T-test revealed that the health literacy score was significantly higher in the individuals with the educational level of diploma and higher (p= 0.000) and in Persian people in comparison with other ethnic groups (p= 0.008) and also was significantly more in unemployed people in comparison with employed ones (p= 0.006).

The higher score of health literacy in rural residents compared to urban residents (p= 0.95) and in females compared to males (p= 0.18) were seen, in spite of the fact that these differences were not statistically significant. However, the Mann-Whitney test showed that the score of communication/ decision- making skills dimension was significantly higher in females (p= 0.01) and the score of social empowerment (p= 0.04) was higher and more significant in residents of rural areas compared to those living in urban areas.

Discussion

In the current study, health literacy considering reading skills, comprehension skills, judgment, and assessment skills and communication/decision-making skills was moderate and was poor in the two areas of individual and social empowerment. Given all the dimensions, health literacy was moderate (11.35 (3.34)) and a total of 22.4% of people had adequate health literacy while 77.6% had inadequate health literacy.

European Health Literacy Survey (HLS-EU) demonstrated insufficient and limited overall health literacy of 59 % [7]. In a meta-analysis of studies conducted between 1963 and 2004, the measured prevalence of low health literacy was 26% with the border health literacy of 20 % (In most of these studies, REALM and TOFHLA tools had been used) [17]. A survey carried out by Bani Hashemi et al. in five provinces of Iran using

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TOFHLA, reported that 28.1% of the subjects had adequate health literacy [2]. 46.5% of the people of Isfahan had adequate health literacy in another study [18]. In a research done in Kerman, roughly 60% of the participants had the low level of literacy (inadequate and borderline) [19]. In a study conducted in Hormuz Island, 35 percent of people had less than sufficient literacy and 12.29% had insufficient health literacy [20]. The study of Tuyserkan's health literacy [21] indicated that health literacy in a dimension of "comprehension" was weak but in our study, it was evaluated as moderate. "Using health information" and "judgment and assessment" were moderate which was similar to the result of our study. The similarities and differences between our findings and the finding of these studies are due to different questionnaires and study populations with the diverse socio-demographic characteristic. The higher level of inadequate health literacy in comparison with many studies conducted in Iran may be due to applying a comprehensive questionnaire that assessed health literacy in a multi-ethnic general population.

The health literacy had a non-significant reverse correlation with age. The reverse association with age was also seen in different studies (17, 21, 22). The health literacy score was significantly higher in the individuals with the degree of diploma and higher. The significant relationship between educational level and health literacy were indicated in various studies [2, 17, 22-24] and in this study people with educational level of diploma and higher had higher access to health information to health information and this access led the way to more health literacy. In the current study Persian people (in comparison with other ethnic groups) had higher health literacy and in a study by Paasche-Orlow et al. [17] ethnicity were related to health literacy, too. Higher access of Persian participants of this study to health information that results in higher health literacy can justify this relationship. In this study, the score of health literacy in females compared to males was higher, even though it was not statistically significant. The higher score of health literacy in unemployed individuals participating in this study may be related to the fact that 83.3 percent of unemployed people were female and the findings of the current study indicated that females had more access to health information which could result in more health literacy.

Findings of this study showed that people's access to health information was moderate, and the score of this area in Tuyserkan's health literacy was also moderate [21]. Considering the significant correlation between access to health information and health literacy, improving the access to health information especially for male, minorities and individuals with low level of education seems essential.

The most common source of health information in this study, the same as the study done by Tavusi et al. [25] was "radio and television "but in Shahriar's health literacy study [26] "physicians and health care staff" were the most common source of the information. Regarding the importance of "radio and television", the promotion of health education programs in these Media looks necessary.

Conclusion

The high level of inadequate (moderate and poor) health literacy of about 77.6% of the population of Alborz province should be taken into consideration in health system policies in order to apply effective strategies to promote health literacy regarding effective socio-demographic factors. In this context, public health professionals and health care providers should ensure that health information is being learned through the commonly accessible health information sources and used properly by people to promote the health status and to decrease the negative health outcomes along with proper use of health services. Improving the ability to access to health information and acquiring the relevant health literacy skills are considered as vital to promoting health literacy. In the end, determining the relationship between health literacy and getting the benefit of health services in Alborz province is recommended as a supplement to the present study.

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Conflict of Interest

No conflict of interest could be observed in this study.

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