

## Evaluation of Health Literacy and Some of Its Associated Factors among 18-65 Years Old

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### ABSTRACT

**Background and Objective:** The purpose of this study was to evaluate of health literacy and some of its associated factors among 18-65 years old clients referred to dezful health and treatment centers, iran, 2018

**Materials and Methods:** This is a descriptive-analytical study with a sample size of 1575 subjects which is conducted in 2018 on Dezful 18-65 years old people. In this study, Dezful municipality's three districts were considered as three clusters; then, two Health and Treatment Centers were selected by random assignment from each cluster, after that sampling was performed by simple random sampling on the target population. The data collection instrument in this study was Montazeri et al. Standard Health Literacy Questionnaire. SPSS 21 software and statistical methods of the correlation coefficient, independent t-test, one-way ANOVA were used to data analysis.

**Results:** The mean age of the subjects was  $32 \pm 3$  (Scores ranged from 18 to 65 years old) and the mean score of health literacy was 70.19 (Scores ranged from 1 to 100). The mean score of health literacy, in five dimensions, has been respectively (information accessibility) 67.26, (comprehension) 78.81, (information reading) 71.79, (evaluating information) 69.33, (decision making and behavior) 66.41. In rating health literacy, 13.07 percent had insufficient health literacy, 21.52 percent had not so much insufficient health literacy, 38.47 percent had sufficient health literacy, and 26.92 percent had higher health literacy. The results also showed that there is a significant relationship between health literacy, and background variables such as education level ( $\chi^2=314.857$ ,  $p=0.010$ ), occupation ( $\chi^2=73.290$ ,  $p=0.001$ ), marital status ( $\chi^2=24.85$ ,  $p=0.019$ ), but this relationship was not significant in gender ( $\chi^2=3.944$ ,  $p=0.268$ ).

**Conclusion:** The results of this study showed that 34.1% of the subjects had inadequate health literacy, which proper planning is needed to improve the health literacy level of the statistical universe in this study.

**Paper Type:** Research Article

**Keywords:** Health Literacy, Dezful, Health Literacy Questionnaire.

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## Introduction

Nowadays, health literacy has been introduced as an essential worldwide issue of the 21st century (1). Health literacy, in the report of the World Health Organization (WHO), has been introduced as one of the main determinants of health in society (2). Health literacy is the ability of a person to obtain, interpret, and understand the basic health information and services, which is required to make appropriate health decisions and includes a set of reading, listening, analyzing, decision-making skills and ability to using them in health situations that does not necessarily indicate the years of education or the ability of people general reading ability (3). Health literacy also includes social and cognitive skills, which determine the motivation, and ability of individuals to obtain, understanding, and use information through ways that result in maintaining and promoting their health (4).

It is estimated that up to 26% of the US adult population has less health literacy, Moreover, a meta-analysis has estimated the prevalence of insufficient health literacy and the prevalence of border health literacy in the United States respectively 25 and 20 percent (5,6).

The 2006 study on health literacy in five provinces of Iran found that health literacy in 56.6 percent of people was insufficient and only 28.1% of them had high levels of health literacy (7).

Studies have shown that people with low health literacy are less likely to understand and follow written and verbal information provided by health professionals. Thus, their health status is low (8) and their hospitalization and visit the physician is higher (10, 9), they are unable to do self-care skills (11). They do less preventive care (12) and therefore incur higher medical costs (13). Insufficient health literacy, not only as a patient problem but also

as a challenge for health care providers, has emerged in health care systems (14). Although health care providers always try to overcome the negative effects of low health literacy, the ability to recognize patients with potential health literacy problems is highly significant, which need paying special attention. Therefore, the first step in designing effective interventions is to measure and understand the health literacy of the target community. Regardless of health literacy and its determinants, interventions may not achieve the desired results (15).

The study aims to determine the health literacy level of Dezful urban adult population in 2018 so that by collecting and analyzing data and measuring the health literacy of the subjects find people with low health literacy levels, then design and implement effective plans and interventions to address shortcomings and deficits.

## Materials and Methods

The present study is descriptive-analytical research, which has been carried out on 1575 Dezful urban adult population, 18-65 years old, in 2018. Characteristics of participating in the study were the age range of 18-65 years old living in the city, and having no mental or physical disability; people who did not meet these characteristics or They were reluctant to participate in the study were excluded from this study. The ethical considerations in this study were to ensure the confidentiality of information and the willingness to participate in the study. It should be noticed that the sample size of this study considering the statistical formula used in similar studies was 383 subjects, so that research team completed 1575 questionnaires for the above-mentioned target group to gain better results (16). We did not have any attrition in completing or returning the questionnaires. In this study, to determine

sample size, Dezful municipality's three districts were considered as three clusters, and then two health and treatment centers were selected by random assignment from each cluster after that available sampling was performed on the target population. Data collection instruments included two questionnaires: Demographic Questionnaire (age, gender, marital status, education, occupation, residence), and Montazeri et al. Standard Health Literacy Questionnaire. The questionnaire consists of 33 items and 5 components: access (6 items); reading skills (4 items); comprehension (7 items); evaluation and decision making (4 items); health information use (12 items); on the basis of the 5-point Likert scale, they range from "not at all" to "always"; the reading skills' items range from "it is very difficult", the lowest score, that is, "one" to "it is very easy", that is "five"; in the rest items there are five answers: from "not at all", which is "one" to "always", which is "five"; therefore, the total score of each respondent can be a maximum of 165 and a minimum of 33. The construct validity (using Exploratory Factor Analysis) and its reliability (calculated by Intra-class Correlation Coefficient) were evaluated, thereby validity of the questionnaire was desirable and was 0.53. Cranach's alpha was also acceptable in the relevant constructs (0.72 to 0.89) and the reliability of the questionnaire was confirmed (17). Therefore, the scores are interpreted as follows:

$$\frac{\text{Possible Minimum Raw Score} - \text{Resulted Raw Score}}{\text{Possible Minimum Point} - \text{Possible Maximum Point}} \times 100 \rightarrow \frac{8 - 4}{20 - 4} \times 100 = 25$$

making and behavior, 66.41.

The research results suggested that, in general, 13.07% (206 people), 21.52% (339 people), 38.47% (606 people) and 26.92% (424 people) of the subjects in this study had respectively "insufficient", "not so much sufficient", "sufficient"

The raw score of each subject in the subscales is derived from the scores' algebraic sum; then, the following formula is used to convert this score to a range of 0-100 points. For example, a person who has gained a raw score of 8 in reading, his/her health literacy score is as follows:

To calculate the total point: subscales are summed (based on a range of 0 to 100), divided by 5 (the number of subscales). Health literacy ratings are as follows: the score of 0–50 indicates insufficient health literacy, 50.1-66 indicate not so much sufficient, 66.1-84 indicate sufficient health literacy, and 84.1-100 is considered excellent health literacy (17). The data collected in this study were statistically analyzed by SPSS21 software. Descriptive statistics indices (percentage, frequency, mean and standard deviation) and inferential test (Chi-square test, ANOVA, one-sample t-test) were used.

## Results

A total of 1575 subjects participated in this study. According to the results, the mean age of the subjects was  $32 \pm 3$ . Table 1 provides a detailed demographic information.

In this study, the mean score of health literacy, by its dimensions, was as follows: health information accessibility, 67.26, comprehension, 78.81, information reading ability, 71.79, information evaluation, 69.33, and decision

and "excellent" health literacy, which more than half of them have had adequate or high health literacy.

The examination of health literacy levels and background variables showed that there was no significant relationship between health

**Table 1: evaluating the status of the subjects' Demographic characteristics\***

Variable		Frequency	Percentage
Sex	Male	363	23.04%
	Female	1212	76.95%
Education	Illiterate	28	1.77%
	Elementary	102	6.47%
	First High School	203	12.88%
	High School (under diploma)	102	6.47%
	High-School Certificate (diploma)	582	36.95%
	Academic	558	35.42%
Job	Employee	476	30.22%
	Jobless	63	4%
	Housewife	901	57.20%
	Retired	31	1.96%
	University Student	104	6.60%
Marital Status	Married	1410	89.52%
	Single	165	10.47%
How To Access Health Information	Health Staff	922	58.7%
	Internet	318	20.19%
	Phone	6	.38%
	Radio, TV	181	11.49%
	Newspapers, Publications	17	1.07%
	Friends, Acquaintances	64	4.06%
	Brochure, Booklet, Educational Brochure	28	1.77%
	Satellite Channel	4	.25%
I Don't Know Where To Get The Information	35	2.2%	

\* Descriptive statistics

literacy levels and gender ( $\chi^2=3.944$ ,  $p=0.268$ ). Furthermore, there was no significant difference in the relationship between marital status and health literacy levels ( $\chi^2=3.423$ ,  $P = 0.331$ ). The results of this study showed that there was a significant relationship between health literacy and education level so that the majority of those with academic education has had sufficient and higher health literacy (80.46%), however, it was insufficient for the majority of illiterates (82.13%) ( $\chi^2=314.857$ ,  $p = 0.001$ ).

Considering the relationship between occupation

and health literacy level, there was a significant relationship between them ( $\chi^2=73.290$ ,  $p=0.001$ ) so that the majority of college students (78.69%) have had sufficient and high health literacy, and the lowest health literacy was among housewives (17.12%) and jobless ones (16.66%).(Table 2)

Most participants of this study were college-educated in the age range of 21 to 30 years, and in all age groups, the sufficient health literacy level among those with a high-school certificate and higher was more than those with less high school certificate. Moreover, there was a

**Table 2: the relationship between demographic variables and health literacy level\***

Variable Insufficient		Health Literacy Level (Percentage)				P	
		Not Enough	Enough	Excellent			
Age	18-20	20	22.85	38.09	19.04	F=7.036	0.001
	21-30	10.33	22.15	38.99	28.50		
	31-40	12.31	18.19	39.70	29.77		
	41-50	19.75	28.39	30.24	21.60		
	51-65	18.39	22.98	42.52	16.09		
Sex	Male	22.86	20.93	33.33	22.86	x <sup>2</sup> =3.944	0.268
	Female	13.44	20.54	38.86	27.14		
Education	Illiterate	71.42	10.71	10.71	7.14	x <sup>2</sup> =314.857	0.001
	Elementary	40.19	26.47	24.50	8.82		
	First High School	24.13	28.57	33	14.28		
	High School	22.54	25.49	34.31	17.64		
	Diploma	10.48	22.16	42.95	24.39		
	Academic	1.97	17.56	40.86	39.60		
Job	Employee	6.66	18.75	37.5	36.45	x <sup>2</sup> =73.290	0.001
	Jobless	16.66	27.27	31.88	23.07		
	Housewife	17.45	22.98	37.79	21.76		
	Retired	11.76	14.70	52.94	20.58		
	University Student	3.70	17.59	48.14	30.55		
Marital Status	Married	13.61	21.70	37.94	26.73	x <sup>2</sup> =3.423	0.331
	Single	9.09	19.29	41.71	29.89		

One-Way Anova, chi-square

significant relationship between all dimensions of health literacy and age ( $F=7.036$ ,  $p=0.02$ ) and the results showed that there was a direct relationship between access to information and the age of the participants, so that age group of 20-30 years has reported the most access to information through health centers' personnel (56%) ( $p = 0.001$ ).

### Discussion

Nowadays, health literacy is a worldwide debate and issue, and due to its role and influence on how people make health decisions, and as a result, its impact on health improvement and quality of life has attracted the attention of many decision and policymakers (18).

Regarding to level of health literacy, 64.4% of subjects had sufficient and higher health

literacy, which is consistent with the research results of Tehrani et al and karimi et al. (7, 19) however is different from the results of some studies (15, 20); these differences can be due to demographic differences and even some other social-cultural differences.

Most participants of this study were literate and in the age range of 21 to 30 years, were college-educated (21). In all age groups of this study, the sufficient health literacy level among those with a high-school certificate and higher was more than those with less high school certificate (22); moreover, there was a significant relationship between all dimensions of health literacy and age groups ( $p = 0.02$ ), which the research results of Tawusi et al. and Naghibi

et al. have confirmed it (24-23). People under the age of 20 years old, probably young, not involved in health problems, and not aware of the importance of health literacy can be important reasons for their poor health literacy. More than half of the participants (58.7%) of this study reported receiving their necessary information through health centers' personnel and on the Internet. These results are consistent with the research results of Bigdelei et al (25). The result demonstrates the significance of health centers' personnel and their special position to convey health information.

Investigating the relationship between health literacy and gender indicated no significant difference, and this relationship was not significant in any other health literacy dimensions, which is consistent with the results of several studies (24, 22, and 26). The study of Lee et al have reported a significant relationship between gender and health literacy, which is in contrast with the results of the present study (27); this difference may be due to social and cultural differences in the context of the studied society.

According to the results of this study, there is a direct and significant relationship between health literacy and educational level, so that the increase of educational literacy will increase the average health literacy level, which this correlation can be observed in all dimensions of health literacy with academic education. The research results of Tavousi et al., are similar to the present study (23). This may be because people are exposed to more information as they get higher education.

Considering the results of this study, insufficient or not so much sufficient health literacy in housewives, illiterates, and those with elementary education were more than other groups. This result is consistent with the research results of other similar studies (6, 22,

and 23). This shows that literate people can increase their health literacy due to their ability to use different sources.

According to the results of this study, housewives and jobless women have the lowest level of health literacy and need more health education, these results are consistent with the research results of the Naghibi et al. (23). The reason may be that housewives are more likely involved in home affairs, and in comparison with employed women have less opportunity to access health literacy resources, however, the educational literacy of these women probably is lower than employed women, and men.

### Conclusions

This descriptive-analytical study suggests that about 40 percent of the subjects have insufficient health literacy; these are often those who have low educational literacy, and on the other hand, they receive most of their necessary information through health centers' personnel, which prove the importance and special status of these people and increase their responsibility to promote community health literacy, thereby improve the quality of life. It also demonstrates the necessity of empowering, promoting, expanding and active participation of these people in cyberspace to provide reliable information.

### Recommendations

This study is a descriptive-analytic one and cannot be used to decision making or generalizing the effects of the factors on the target variables, and only shows the relationships, therefore prepare the context to future interventional studies. Designing an interventional study to find the effective factors is recommended.

Strengths: Although the study is descriptive-analytical, its large number of participants can be its strengths, and due to random sampling from all parts of the city, it may be considered a reliable sample of the target universe.

limitation: This is not an interventional study and this can be considered as a shortcoming. Self-reporting some questionnaires may be another limitation of the study. We asked people to ask the researcher any questions if they had any doubts, and we tried to complete the questionnaires by researchers as much as possible. Another limitation of the study could be about illiterate peoples who the questions were described in simple language to give the most accurate answer possible.

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