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Health literacy and its dimensions in elderly people in Farsan city, Iran

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Abstract:

BACKGROUND: Health literacy is an important variable in the promotion and improvement of the health of all social groups, especially the elderly people. It indicates cognitive and social skills that specify the individuals' motivation and ability to access and perceive information using methods for health retention and improvement. The present research aimed to study health literacy and its relevant dimensions in a population over 60 years of age in Farsan city.

MATERIALS AND METHODS: A cross-sectional study on 384 older people in Farsan city was conducted, using a standard health literacy questionnaire including 33 items and 5 dimensions on a 5-point Likert scale for collecting data. Data analysis was done using descriptive and analytical statistics, using the multiple linear regression analysis.

RESULTS: Among the dimensions, the highest and lowest scores belonged to decision-making and reading skill dimensions, respectively. The multiple linear regression analysis revealed that among the demographical variables, education level, age, sex, and job were the best predictors of total scores of health literacy ($P < 0.001$).

CONCLUSIONS: The health-related institutions should make effort to improve the elderly people's health literacy based on general literacy, using suitable methods with less need to read and paying attention to personal characteristics.

Keywords:

Aged people, health literacy, health promotion, self-care education

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Introduction

The dramatic increase in the aging population has begun in the twentieth century worldwide. In 2006, the United Nations reported the total number of elderly people to be 700 millions in the world, and it will increase to nearly two billion by 2050.^[1] According to national reports and statistics and analysis of existing trends, Iran is transitioning from a young to a middle-aged population and will join the countries with an older population in the future.^[2] According to available reports, the demand for medical services in the elderly is more than three times higher than the nonelderly population in Iran, and this demand increases with age. The elderly

are more prone to various diseases due to physiological changes that occur with age.^[3] In most societies, the elderly are most at risk for lower physical, mental, and cognitive abilities and are more likely to depend on formal or informal support to maintain health, performance, and self-sufficiency.^[4] In this regard, paying attention to the elderly people's self-care and responsibility for different diseases is a supportive strategy that requires a high level of health literacy.^[5]

Health literacy is the individuals' appropriate cognitive and social ability to obtain, analyze, and understand the information and health services to make appropriate health decisions.^[6,7] Health literacy is a broad concept and has been introduced by the World Health Organization as an important determinant of health.^[8] Given the increasing

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population of the elderly, promoting their health levels is a priority of health policies.^[9] On the other hand, cognitive changes relating to aging and lack of health literacy impair the ability to use health information.^[10] Many elderly people in developed countries have low health literacy (36% in the United States and 47% in Europe), leading to unintended health consequences such as higher hospitalization and mortality, poorer health outcomes,^[11,12] and lower participation in self-care and health screening programs.^[4] Self-care education is a factor in maintaining the elderly people's health, in which the elderly take measures to maintain their independence and health.^[13] Health literacy is an effective factor in determining the impact of health information on acceptance or rejection of health measures and in people's participation in health-promoting behaviors such as self-care.^[14] and it causes to reach higher quality of health-care services.^[15] This occurs especially in long-term and preventive care in chronic diseases that need the elderly individuals' participation in the care process and affects the quality of life of the elderly people.^[7,16]

The relationship between health literacy and health outcomes is well known, but its mechanisms are unclear. Existing theoretical models consider this relationship through its impact on self-efficacy, knowledge, and health behavior along with the impact on health-related perceptions and experiences and familiarity with health concepts.^[12] Studies indicate the low level of public health literacy in Iran, especially in the elderly population.^[3] It was 52.5% in a study by Mohseni *et al.* and 79.6% in a study by Javadzade *et al.*^[4,6] Furthermore, most information provided by the health service system is written, and it is difficult for the elderly to understand;^[1,3] hence, it requires changes in methods of education and health service provision.

Given the importance of health literacy and its key role in promoting the elderly people's health and the results of domestic research on the literacy of the elderly in Iran as well as the impact of cultural factors,^[4] it seemed necessary to study dimensions of health literacy in the elderly people in Farsan. According to the results, appropriate planning can be conducted to provide better health services.

Materials and Methods

Study design and setting

The present research was a cross-sectional study that aimed to examine health literacy and its dimensions in community-dwelling aged people in Farsan city, Iran.

Study participants and sampling

The participants were people over 60 years of age in Farsan city with a total population of about 35,000

people. The sample size was equal to at least 384 aged people. We performed sampling using a multistage random method. Therefore, we randomly selected 4 out of 6 comprehensive centers of urban health services and performed random sampling on older adults of each center according to their population. Inclusion criteria of the study were as follows: 60 years of age and older, having literacy to complete the questionnaire, having an active health record in comprehensive health centers, and informed consent. The elderly people, who had cognitive or mental problems or those who were unable to fill out the questionnaires, were excluded from the study.

Data collection tool and technique

In the present study, we utilized a standard health literacy questionnaire, which was validated by Montazeri *et al.* in 2014 to collect data.^[17] The researcher monitors the process of filling out the questionnaires and answered their questions. The first part included demographic information (gender, age, education level, and job). In the second part, we used the health literacy questionnaire consisting of five dimensions (access, reading skills, comprehension, evaluation, and information application) and 33 questions with a 5-point Likert scale (1, totally disagree; 2, disagree; 3, natural; 4, agree; and 5, totally agree). The questionnaire scores ranged from 33 to 165.

After completing the questionnaires, the data were encoded and entered into the SPSS 22 (IBM, USA). We used the descriptive statistics indices (frequency, percentage, mean, and standard deviation) to describe the data. We used statistical tests to analyze the data and the relationship between demographic factors and scores of health literacy and its dimensions. The correlation and regression matrix were used to express inferential statistics of data and analyze the questionnaire, and the significance level was 0.05.

Ethical consideration

The ethical considerations of the study included the acquisition of a scientific code of 398588 and an ethical code of IR. MUI. RESEARCH. REC.1398.464, necessary permits from Isfahan and Shahrekord University of Medical Sciences, and the participants' informed consent, explaining the research purpose, and keeping the information confidential.

Results

The present study was conducted to evaluate health literacy and its dimensions in a population of 60 years and older in Farsan city in 2019. To this end, we studied 384 elderly people whose age range was from 60 to 91 with a mean of 66.9 and a standard deviation of 6.9 years. Table 1 presents the participants' demographic characteristics.

The elderly people's mean total score of health literacy was 49.9 with a standard deviation of 22.9 out of 100. Among the dimensions, the maximum score belonged to decision-making and information application with a mean of 53.9 and the minimum score belonged to dimensions of reading skills with a mean of 31.6 [Table 1].

Pearson's correlation coefficient indicated that the elderly people's age was inversely related to the total score of health literacy and all its dimensions ($P < 0.001$). In other words, aging decreased the elderly people's scores of health literacy [Table 2].

Spearman's correlation coefficient showed that the education level of the elderly was directly related to the total score of health literacy and all its dimensions ($P < 0.001$). In other words, the higher education level of the elderly increased their health literacy scores. The independent *t*-test indicated that the mean scores of health literacy and its dimensions were significantly higher in the elderly women than males ($P < 0.001$) [Table 3].

The one-way analysis of variance indicated that the mean scores of total health literacy and all its dimensions were significantly different between the elderly with different jobs ($P < 0.001$). The LSD *post hoc* test indicated that the mean scores of health literacy and all its dimensions among retired adults were significantly higher than older employed elderly and also greater among employed elderly than unemployed elderly ($P < 0.05$) [Table 4].

Table 1: Statistical indices of total health literacy score and its dimensions (out of 100) for the elderly people

Dimensions of health literacy	Mean	SD	Minimum	Maximum
Total score	49.9	22.9	7	97
Access	53.5	25.9	0	100
Reading skill	31.6	19.5	0	100
Comprehension	51.1	35.8	0	100
Evaluation	46.9	27.4	0	100
Decision-making and information application	53.9	22.04	6	98

SD=Standard deviation

Table 2: Pearson's correlation coefficients between total health literacy score and its components with elderly people's age

Components of health literacy	Age	
	<i>r</i>	<i>P</i>
Total score	-0.387	<0.001
Access	-0.392	<0.001
Reading skill	-0.250	<0.001
Comprehension	-0.372	<0.001
Evaluation	-0.320	<0.001
Decision-making and information application	-0.382	<0.001

The multiple linear regression analysis indicated that the education level, age, gender, and job were the best predictors for the total score of health literacy [Table 5].

Discussion

The present study aimed to investigate health literacy and its dimensions in a population over 60 years of age in Farsan city. The mean score of health literacy was 49.9 among elderly people. Among the dimensions, the highest scores belonged to decision-making and information application with a mean of 53.9 and then access with a mean of 53.5, comprehension with 51.1, evaluation with 46.9, and reading skill with 31.6.

It is necessary to pay attention to the participants' literacy levels due to the assignment of the lowest score to the reading skill. The result is not far-fetched since most training is provided in reading^[1,3] even though the total score of health literacy is also undesirable^[4] and is less than half the maximum score. Therefore, methods of providing health services should be taken into consideration according to the elderly people's health literacy levels. Since there is a need for more health services and participation in screening programs in the elderly than other age groups, lack of health literacy causes many consequences for the elderly and the health system of Iran.^[6]

The studies indicated the effects of demographic characteristics in the elderly on their health literacy. Their age, gender, education levels, and jobs were effective factors. According to the findings, the elderly individuals' age was inversely related to the total scores of health literacy and all its dimensions and increasing the elderly individuals' age decreased their health literacy scores. This conclusion has been confirmed by studies by some researchers. The results of studies sometimes indicated the effect of age on health literacy,^[3,8,10,18,19] while some studies did not find any relationship.^[4,9] The difference in this dimension may be related to the type of measurement tool and also the type of filling out the questionnaires by the elderly, not by the questioners. In the present study, the questionnaires were performed by the research team. The lower health literacy in the age group over 65 years indicates that the decrease in cognitive ability with age plays a role in reducing age-related health literacy. Furthermore, some physical abilities such as vision and hearing loss due to aging disrupt the possibility of correct follow-up of instructions recommended by the physician, especially in decision-making and information application dimensions.

Other findings of the present study indicated that the education levels of the elderly were directly related

Table 3: Comparison of the average total score of health literacy and its dimensions between women and men

Dimensions of health literacy	Male		Female		P
	Mean	SD	Mean	SD	
Total score	40.8	19.7	58.9	22.5	<0.001
Access	42.4	21.3	64.5	25.5	<0.001
Reading skill	24.1	15.5	39.2	21.3	<0.001
Comprehension	41.1	22.4	61.01	25.2	<0.001
Evaluation	37.7	23.1	56.1	28.3	<0.001
Decision-making and information application	45.8	20.3	62.1	20.8	<0.001

SD=Standard deviation

Table 4: Comparison of total mean scores of health literacy and its dimensions between the elderly people with different jobs

Dimensions of health literacy	Unemployed		Employed		Retired		P
	Mean	SD	Mean	SD	Mean	SD	
Total score	37.3	20.2	49.4	17.7	64.4	21.04	<0.001
Access	40.2	22.5	52.9	22.7	68.7	23.5	<0.001
Reading skill	20.6	14.1	29.2	14.7	45.8	22.5	<0.001
Comprehension	37.1	23.3	51.1	22.3	66.8	21.8	<0.001
Evaluation	33.9	23.3	43.4	22.9	64.2	25.9	<0.001
Decision-making and information application	41.1	20.6	54.5	16.9	66.9	19.7	<0.001

SD=Standard deviation

Table 5: Linear regression analysis for predicting the total score of health literacy based on demographic variables

Demographic variables	Unstandardized coefficients (B)	Standardized Coefficients (β)	T	P
Sex	12.11	0.262	5.83	<0.001
Age	-1.03	-0.305	6.19	<0.001
Education level	5.84	0.310	7.86	<0.001
Job	3.94	0.147	2.68	<0.001

to total scores of health literacy and all its dimensions and the higher education level also increased their health literacy scores. As the capability increased, the subsequent abilities to obtain the information and interpret and understand health messages and follow medical instructions increased. Health culture improves through education, and people behave more in favor of health and hygiene. Furthermore, health concerns are greater at higher levels of education.^[3,4,12,20]

Findings also indicated that gender was related to health literacy that was significantly higher in older women than men. The findings of this section were consistent with some studies.^[5,12,18,21] According to individual experiences, this is due to the observance of hygienic principles and much adherence to medical advice in women. It is also related to women's traditional roles in caring for sick family members and children. This traditional gender expectation is likely to give women more interaction with the health-care system and create more opportunities to promote health knowledge, leading to higher levels of health literacy than men. Some other studies did not mention any relationship^[4,6,8,19,20] probably due to men's access to more educational facilities and the cultural conditions of society in the women's low access to education.

The findings also indicated that health literacy was higher among retired elderly people than employed ones, and the amount was higher in employed elderly than unemployed ones. In this regard, the results of a study by Abasi *et al.* indicated that health literacy was higher in retirees than employed and unemployed elderly.^[22] According to the result, due to the high level of leisure among the retired elderly, higher education levels, and having income compared to the unemployed elderly, they have access to health facilities and equipment. The results of linear regression indicated that education level, age, sex, and job were the best predictors of the total health literacy score. Various studies indicated predictive effects of age, education level, and retirement,^[22] monthly income, and education level^[21] on the health literacy in the elderly. Furthermore, health literacy had predictive effects on the health behaviors of the elderly in cases such as smoking in the elderly with high social relationships,^[11] doing physical activity,^[9] quality of physical, mental, and social life,^[7] participation in mammography screening, exercise, and smoking reduction.^[12]

Limitation and suggestion

The willingness to answer the questionnaire by the elderly was low, so with explanations about the reasons

and benefits of participating in the research, they agreed to participate in the research.

Conclusions

There is a need for paying more attention to health literacy in the elderly. Inadequate health literacy in aged people leads to consequences such as the higher risk of diseases and mortality among them. Although they need to follow the health guidelines, they can't commit it. As the population structure of Iran is moving toward old age so that effective steps can be taken toward providing better educational facilities and approaches and developing the health literacy in the elderly through considering their levels of abilities and skills.

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Conflicts of interest

There are no conflicts of interest.

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