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Association between health literacy with knowledge, attitude, and performance of health-care providers in applying health literacy education strategies for health education delivery

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Abstract:

BACKGROUND AND AIM: Recognized as one of the key elements of growth and development, education is an important strategy for successful provision of services in all social dimensions. Moreover, it is categorized among empowerment tools to achieve goals. In the field of health, health education encourages people to be healthy. This study aimed to evaluate the health literacy of health-care providers and its relationship with strategies of using health literacy in the provision of health education.

MATERIALS AND METHODS: This cross-section correlational study was carried out on a group of health-care providers in Isfahan, Iran, in the second trimester of the Persian year 1397 (2018). Participants were selected by multistage sampling, for which two questionnaires of Test of Functional Health Literacy in Adults and inventory of strategies of using health literacy in education were applied. The validity and reliability of the research tools were formerly approved. In addition, data analysis was performed in SPSS version 21 using Pearson's correlation coefficient and linear regression model.

RESULTS: In total, 230 participants with a mean age of 34.32 ± 7.71 years were entered into the study, 92.9% of whom were female and 7.1% were male. The mean health literacy score of the participants was 79.60 ± 12.41 . In the sections of knowledge, attitude, and performance were related to the use of health literacy education strategies, and we obtained the means 5.20 ± 1.94 , 43.11 ± 4.11 , and 28.96 ± 6.73 , respectively. Moreover, Pearson's results were indicative of a significant relationship between health literacy of health-care providers and knowledge ($r = 0.245$; $P < 0.05$) and performance ($r = 0.208$, $P < 0.05$) regarding the use of education strategies. However, no significant association was found between health literacy of health-care providers and attitude toward the use of health literacy education strategies ($r = 0.081$; $P = 0.225$).

DISCUSSION AND CONCLUSION: While the results showed that 75% of health-care providers had a favorable level of health literacy, and despite the proper attitude toward the use of health literacy education strategies, the knowledge and performance of the participants were estimated at $< 60\%$ in this regard. It is suggested that the potential of health-care providers in terms of achieving, processing, and perceiving health-related information and fundamental services be improved to enhance their knowledge and performance regarding the use of health literacy education strategies.

Keywords:

Health education, health literacy, health literacy strategy, health-care providers

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Introduction

According to the 2025 vision plan of the Islamic Republic of Iran, the health

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system of the country is responsible for providing the highest level of life expectancy and quality for all people by making appropriate decisions to meet the actual health needs of the society members. To this end, the health reform plan of the country has been established, and new service packages have been designed for public health care. In addition, human resources graduated in fields of family health, midwifery, and general health are applied as health-care providers after receiving the necessary educations. One of the duties of these individuals is recognizing the covered people, developing e-Health files, providing active services to the covered population, individual and family counseling, and following up the status of individuals.^[1] Another duty of a health-care provider is health education, carried out to empower the public, improve individual and group referrals for self-care, and promote public health and a healthy lifestyle.^[1]

All of these goals come in the form of new service packages, and learning, understanding, and applying the new health information require a great deal of reading, listening, analyzing, computing, and decision-making skills. Meanwhile, most studies have confirmed the inadequacy of these skills in individuals aged 18–60 years.^[2] According to researchers, these skills are among the most important components of health literacy to follow-up prevention and treatment goals in individual and social arenas.^[3] In fact, health literacy is defined as the ability of people to attain and understand primary information and decide about their health.^[4] Studies show that patients with low health literacy less understand their medical conditions and information provided by health-care specialists. Moreover, they cannot use preventive services and have a higher hospitalization rate.^[2,5] Despite the significant importance of health literacy and complications of inadequate health literacy, many health-care providers are unaware of this issue and use words that are unknown to the audience, which prohibits favorable health consequences.^[6]

The health field researchers have introduced a framework entitled health literacy strategies for training and establishing a correct relationship with patients. This method is used to train all patients, especially those with inadequate health literacy.^[7] The strategies include the use of a simple and comprehensible language, summarizing the information presented to patients at each visit, repeating the information and teachings, using repetitive feedback technique, applying images and posters, motivating question-asking in patients, and exploiting simple media to train patients with low health literacy.^[8]

The knowledge and ability to use these strategies in the delivery of training enables health and treatment

personnel to apply techniques fitted to the training of the recipients, the result of which is receiving and perceiving more information by clients and greater ability of health-care providers to teach and propose health-related strategies.^[7] Successful learning is the result of collaborative work and the interaction of the educator, the educated, and the educational content. In fact, learning does not occur without these three components.^[9] Studies by Khosravi, Ghanbari, Javadzadeh, Kafiro, and other researchers have demonstrated an inadequate health literacy in different community groups (the educated). In addition, they showed inadequate knowledge and skill of physicians, nurses, and other health-care personnel in using health literacy education strategies. Considering the results, a question is raised on the level of health literacy of educators, and whether there is a relationship between their health literacy and knowledge, attitude, and performance in using health literacy strategies? Therefore, due to the information gap in this area, the present research aimed to evaluate the correlation between health literacy of health-care providers with their knowledge, attitude, and performance in using health literacy education strategies to provide health teachings in Isfahan, Iran.

Materials and Methods

This applied, cross-correlation study was performed on 230 health-care providers in Isfahan Province, Iran, in 2018. Participants were selected using multistage sampling, and the sample size was estimated at 208 individuals based on the quantitative sample size formula with 0.3 accuracy, 2.33 variance, 95% confidence interval, and 2107 individual as statistical population of the study. However, a total of 230 people were assessed in the end, considering a 20% attrition rate.

Inclusion criteria were a minimum of 1-year experience, education in health headquarters, and willingness to participate in the research. In this study, two questionnaires were exploited to assess health literacy in health-care providers and evaluate their knowledge, attitude, and performance in terms of using health literacy education strategies. The first questionnaire was Test of Functional Health Literacy in Adults translated by the institute of researchers without borders. In addition, the validity and reliability of the tool were confirmed by Banihashemi and Amirkhani.^[10] Whereas the first part of the test includes the demographic characteristics of the participants, the second part involves reading comprehension of three texts including instructional topics for upper gastrointestinal imaging, individual rights, and responsibilities regarding insurance forms and standard hospital consent forms. Moreover, the calculation section contained ten health orders or

explanations on drug use, doctor visit, stages of using financial contributions, and a sample of a test result that measures the understanding and practice of the recommendations of physicians and health educators that need to be calculated. The total score of the questionnaire was 100, allocating 0–50 scores to each part.^[10]

The second questionnaire was designed and validated by Javadzadeh *et al.*, applied in the present study to assess the knowledge, attitude, and performance of health-care providers. The tool includes four sections: (1) demographic characteristics of participants, (2) 14 multiple-choice items to assess the knowledge level of the participants, (3) ten multiple-choice items scored based on a four-point Likert scale (from never to always) to evaluate the performance of participants in terms of using the health literacy education strategies in patient training, and (4) ten items scored based on a five-point Likert scale (from completely agree to completely disagree) to evaluate the attitude of the participants toward the use of health literacy education strategies.^[7]

According to the division of Health Deputy of Isfahan University of Medical Sciences, the cities of Isfahan Province were divided into eight geographical regions, four of which were selected randomly. From these regions, 12 health networks were randomly considered, and samples were selected from the health-care providers in each health network using convenience sampling. A mediator was used to follow-up questionnaire completion in each network, and data analysis was performed in SPSS version 23 (IBM Corp, Armonk, NY, USA).^[8] using descriptive statistics and Pearson’s correlation coefficient. It is worth noting that the necessary permissions were obtained from the vice chancellor for the research of Isfahan University of Medical Sciences, and Isfahan health deputy and the selected networks were involved in the research. Prior to the study, the objectives were explained to the participants, and they were ensured of the confidentiality terms regarding their personal information. In addition, the information had no effect on the assessment of the health-care personnel.

Results

Among 230 participants, 92.9% were women and 69.8% were married. Moreover, the age range of participants was 22–56 years with a mean of 34.32 ± 7.71 years. In addition, 49.1% of the participants had <5 years of work experience, and 53.1% of health-care providers had firm-based contracts. Furthermore, the mean and standard deviation of health literacy was 79.60 ± 12.41 . In the reading comprehension and calculation sections, the mean scores were 42.7 ± 98.35 and 36.63 ± 8.12 ,

respectively. Furthermore, the evaluation of mean and standard deviation of knowledge, attitude, and performance of health-care providers in using strategies of health literacy education showed that the scores of knowledge and performance were significantly low, whereas the score of attitudes regarding the use of health literacy education strategies was estimated at 43.11 ± 4.11 [Table 1]. According to the results of Pearson’s correlation coefficient, a significant relationship was observed between the variables of reading comprehension and calculations with the knowledge and performance of health-care providers in terms of using health literacy education strategies. Meanwhile, the association with the variable of attitude was not significant [Table 2]. The evaluation of the relationship between health literacy of reading and calculation with knowledge and performance of the participants regarding the use of health literacy education strategies by linear regression model revealed that the health literacy of reading and calculations predicted 7.5% and 9% of knowledge, respectively. Moreover, the results were indicative of significance of the two variables in regression models [Table 3].

Discussion

The present study aimed to determine the relationship between health literacy of health-care providers and the use of health literacy education strategies in health-related training. According to the results, the participants had a favorable health literacy level, especially in the field of reading comprehension. However, their knowledge and performance level in

Table 1: Score of health literacy of health-care providers in three sections of perception, calculations, and total score of knowledge, attitude, and performance related to health literacy application strategies

Criterion	n	Minimum	Maximum	Mean±SD
Comprehension	228	0	50	42.98±7.35
Calculations	228	0	50	36.63±8.12
Health literacy	228	22	99	79.60±12.41
Knowledge	228	1	11	5.20±1.94
Attitude	227	30	49	43.11±4.11
Performance	224	10	50	28.96±6.73

SD=Standard deviation

Table 2: Relationship of health literacy score (sections of calculations, perception of reading, and total) with knowledge, attitude, and performance related to health education strategies

Variable	Knowledge	Attitude	Performance
Reading comprehension (r, P)	0.165, 0.01	0.081, 0.22	0.200, 0.03
Calculations (r, P)	0.226, 0.001	0.039, 0.55	0.137, 0.04
Total (r, P)	0.165, <0.001	0.074, 0.26	0.208, 0.02

Table 3: Regression of comprehension and performance calculations related to health literacy strategies

Variable	Beta standard coefficient	t	Significant	95.0 Confidence interval		Impact factor	Modified impact factor
				Lower bound	Upper bound		
Knowledge							
Comprehension	0.156	2.112	0.036	0.010	0.279	0.07	0.06
Calculations	0.157	2.152	0.033	0.011	0.259		
Performance							
Reading comprehension	0.146	2.07	0.039	0.002	0.073	0.09	0.05
Calculations	0.165	2.34	0.020	0.006	0.071		
Confidence interval							

terms of using health literacy education strategies were below 60%. In addition, the results were indicative of the positive attitude of health-care providers toward the use of health literacy in-patient training, finding a significant relationship between health literacy in three sections of perception, calculation, and total with knowledge and performance of the participants in terms of using health literacy education strategies.

According to border points of 59 and 74, the health literacy of the participants was classified into three categories: low (0–59), border (59–74), and adequate (75–100) levels (6). Therefore, our findings were indicative of an adequate level of health literacy in the participants. However, Panahi *et al.* reported an inadequate level of health literacy in a population aged 18–65 years (60%).^[11] In addition, Peyman and Samiee Roudi marked that the health-care providers had a low level of health literacy.^[12] According to Ghanbari *et al.*, 54.6% of pregnant women covered by health-care center of Shahid Beheshti University had inadequate health literacy, which is inconsistent with our findings.^[13] In another research entitled “promotion of health literacy in practice,” Julie *et al.* reported a low health literacy level in staff before educational intervention,^[14] which is not in line with our findings.

However, Khosravi, Ghanbari, Noblin, and other researchers reported a higher health literacy level in participants with a higher level of education and thereby demonstrating the role of educational level in the health literacy of individuals. In general, the basic literacy is a foundation for health literacy level, meaning that individuals with a higher level of education have a higher health literacy level.^[15,16] In a research performed in Southeast European countries, Toçi, *et al.* reported a more favorable health literacy level in people with a higher level of education,^[17] which could be in accordance with our findings since all of our participants had academic education. Incongruent with our findings, Juk Kala *et al.* reported the lowest level of knowledge in terms of health literacy and its negative impacts on nurses, considering this low level to be the result of lack of effective relationships and using health literacy strategies in education.^[18]

Results obtained by Cafiero showed that there was a strong attitude toward the use of health literacy, the participants had poor knowledge and performance in this regard, in a way that low knowledge level created a considerable gap in learning of patients.^[19] In this respect, our findings are consistent with the mentioned study. Similarly, Schwartzberg *et al.* affirmed that while physicians, nurses, and pharmacists sometimes use health literacy education strategies in-patient training, they were not competent in this field.^[20] In line with our findings, results obtained by Barrett *et al.*, in the United States were indicative of low knowledge level in the majority of nurses in terms of using health literacy education strategies. However, nurses who were familiarized with and used these strategies provided more effective training.^[21]

Low health literacy is a common and serious issue worldwide. Health-care professionals lack proper education of health literacy principles, and it is crucial to increase and improve health literacy in these workforces.^[22] While our findings demonstrated that 75% of the health-care providers had a favorable level of health literacy and a positive attitude toward the use of health literacy education strategies, the knowledge and performance of the participants regarding the use of strategies was below 60%, which affected their education method. Given the importance of education in promotion of individual, family, and community health, and since education is the most important responsibility of health-care providers, as the first providers of health services, implementation of interventional programs and educational planning on in-service education is recommended to teach health literacy education strategies and skills to communicate with patients with a low literacy level.

Some of the major strengths of the current study were sample selection in ≥50% of health networks covered by Isfahan University of Medical Sciences, accuracy in completing the questionnaires and selecting health-care providers as the statistical population. On the other hand, the distance of the selected cities and volume of questionnaires were among the limitations of the present study.

Conclusion

the potential of health-care providers in terms of achieving, processing, and perceiving health-related information and fundamental services be improved to enhance their knowledge and performance regarding the use of health literacy education strategies.

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Conflicts of interest

There are no conflicts of interest.

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