

Evaluation of Health Literacy Level in Patients with Angina Pectoris Referred to Selected Hospitals of Tehran

ABSTRACT

Background and Objective: Angina pectoris is one of the most common among heart diseases. Low health literacy is associated with a high prevalence of chronic diseases, including cardiovascular disease. Considering the significant burden of heart disease, improving the level of health literacy of individuals can play a decisive role in the prevention and treatment of these diseases and saving resources. The aim of this study was to investigate the level of health in patients to Angina pectoris, who referred to selected hospitals in Tehran.

Materials and Methods: This study is a descriptive-analytical study that was performed on 405 patients with angina referred to the heart clinics of selected hospitals in Tehran in 2017. Patients were selected by convenience sampling. Data were collected using demographic questionnaires, Health Literacy of Iranian Adults (HELIA) and analyzed by descriptive and inferential statistics and Anova with SPSS software version 20.

Results: The mean age of the patients was 53.08. The average score of health literacy of patients with angina pectoris (63.77 ± 15.44) is based on the fact that it can be said that the subjects in terms of health literacy were not at a sufficient level. The results of Anova statistical test showed There is a statistically significant relationship between health literacy level and age variables, education level, employment status, income level, duration of heart disease and heart disease and ways of obtaining medical information ($p < 0.05$).

Conclusion: The findings showed that patients need more explanation to understand and use health information and need to spend more time acquiring information in a simpler and more understandable language.

Paper Type: Research Article

Keywords: Angina Pectoris, Cardiovascular Diseases, Health Literacy

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Introduction

Cardiovascular diseases are currently one of the most common diseases in human societies and there has been a growing trend in the number of these patients in recent decades (1). Numerous studies indicate the fact that the prevalence of coronary artery disease is increasing so that this disease is the main cause of disability and death in developed countries (2). In Iran, coronary artery disease is one of the leading causes of death and disability and is currently the leading cause of death in people over 35 years of age (3). Among coronary artery disease (CAD), angina pectoris is common in the general population, affecting 6.8 million people in the United States. The disease is characterized by chest tightness and pain as a result of lack of blood supply and oxygen demand balance following coronary arteries stenosis due to atherosclerotic lesions (4) and negatively affects the quality of life of patients considering its chronic and debilitating nature, along with certain symptoms, angina and intolerance to activity (5). The prevalence of CAD and its complications leads to mortality, and disability in large part of the productive workforces of the country, especially in the best years of job efficiency and eventually reduced production and increased healthcare costs (6). Thus, in addition to the clinical and economic burden, CAD threatens health-related quality of life in patients and reveals the need to investigate quality of life in these patients (7). Many of the disease-related psychological and social problems and costs can be addressed by providing health literacy education (8). Health literacy refers to a person's capacity to obtain, interpret, and understand basic information on health services needed to make good decisions, and include the use of the skills of reading, listening, analysis of decision-making in health positions (9). Health literacy is a vital indicator of health care outcomes

and costs that, if not improved, will lead to longer use of health care services. Health literacy is currently considered as a global debate and issue in the 21st century (10). Accordingly, WHO recently introduced health literacy as one of the greatest determinants of health (11). Findings of the studies suggests a relationship between low health literacy with low awareness of, limited use of preventive health services, frequent hospital admissions, and increased mortality and poor health status reported by individuals (12). The results of domestic studies also show that Iranian people have inadequate health literacy (50%) (13). Moreover, according to a study in five provinces of the country, only 28.1% of participants had adequate health literacy, 15.3% had marginal health literacy, and 56.6% had inadequate health literacy (14). Saatchi et al. showed in a study that 35% of the subjects had relatively adequate health literacy, 18.21% had adequate health literacy, 12.29% had inadequate health literacy, and 7.14% had excellent health literacy. They also regarded education level, economic status, and age as main variables affecting health literacy level (15). Considering the fact that there are few studies of health literacy in the country and its important role in the promotion of public health, there is a special need to carry out relevant studies (16). health literacy of patients, especially CAD patients who have a special need for medical care, it will help hospital staff and patient's relatives to communicate effectively with these patients (17). Since an improvement in health literacy may be an effective strategy in improving health status and utilization of health services on the one hand, and access to effective and affordable interventions to enhance health literacy and reduce the incidence of heart diseases as well as the significant economic burden imposed to patients and society, on the other hand, the

aim of the present study was to determine the health literacy level in CAD patients referring to hospitals healthcare centers selected in Tehran.

Materials and Methods

The present study is a descriptive-analytical study aimed to determine the health literacy level in patients with angina pectoris referred to selected hospitals in Tehran in 2017. The study population included all CAD patients with angina pectoris referred to cardiology clinics of hospitals in Tehran, which were randomly selected from in 5 regions: north, south, east, west, and center: Baqiyat Hospital Allah, Jamaran and Shahid Rajae Heart Hospital, Firoozabadi Hospital, and Ayatollah Kashani, Lavasani Hospital, Modares Hospital, Imam Khomeini Hospital, and Tehran Heart Center. The sample size of patients with angina pectoris referred to in these centers was selected based on using Gantt chart within 6 months. During this period, 405 eligible patients with angina pectoris were studied in each hospital for three weeks and five days per week. Inclusion criteria included age over 18 years, having reading and writing literacy, patients diagnosed with of angina pectoris for at least 6 months, absence of difficult to cure diseases such as cancer, lack of cognitive impairments based on short test of mental status (STMS) test, being able to communicate, and absence of mental illness. The incomplete questionnaires were excluded from the study. In order to complete the questionnaires, the following ethical consideration were taken into account: obtaining the informed consent form, and keeping the questionnaires anonymity, and keeping information confidential. Data were collected using the adult health literacy questionnaire, which consisted of 33 items (5 options) and measured reading health literacy (4 questions) in 5 domains, including reading (4 questions), access (6 questions),

comprehension (7 questions), assessment, (4 questions), decision making and behavior (12 questions). The questionnaire was scored using the following method: the raw scores of each of five domains of health literacy were calculated and then converted to a standard score ranging between 0 and 100, with scores 0-50, 50.1-66, 66.1-84, and 84.1-100 indicating inadequate, relatively inadequate, adequate, and excellent health literacy, respectively. In Montazeri et al.'s study, validity of the questionnaire was evaluated by using qualitative content as well as exploratory factor analysis (EFA) and its reliability was also measured using internal correlation coefficient by calculating Cronbach's alpha ($\alpha = 0.80$). The collected data were analyzed using descriptive statistics (mean and standard deviation) and inferential statistics (Pearson correlation coefficient) in SPSS ver. 20 and $p < 0.05$ was considered as the statistically significant level.

Results

Based on the results of the present study, 108 subjects were female (48.9%) and 207 were male (51.1%). The mean (SD) age of the research subjects was 53.08 (12.07) years. A total of 61.7% of research subjects were married, 151 (37.3%) had a diploma, and 50.4% had average economic status. In terms of employment status, 25.2% were housewives. Moreover, a total of 47.7% of the research subjects were diagnosed with angina pectoris less than 1 year. Participants smoked cigarettes only in 39% of cases. The most frequent sources of health information included radio and TV (26.2%) and medical staff (23.2%). Regarding the history of the underlying disease, 32.8% of the participants had hypertension. The results of ANOVA statistical test showed a statistically significant relationship between health literacy level with age, education level, employment status, income status, duration of heart disease, and

risk of heart diseases, and sources of obtaining medical information. ($p < 0.05$). (Table 1).

Table 1. Demographic characteristics of the study population

Variables		N (%)	Mean (SD)	P value
Age	24-50	188(46.4)	120.95(6.82)	P =0/001
	50<	217(53.6)	113.59(14.21)	
Gender	Male	(48.9)198	117.04(21.51)	P=0/97
	Female	(51.1)207	116.98(17.59)	
Level of Education	Primary	(13.6)55	105.84(22.52)	P=0/001
	intermediate	(17)69	112(19.78)	
	High school	(37.3)151	114.82(16.67)	
	College education	(32.1)130	126.45(17.39)	
Job	Housewife	(25.2)102	108.21(20.88)	P=0/001
	Employee	(23.7)96	125.26(17.32)	
	Self-employment	(21.2)86	117.52(15.80)	
	Retire	(24.27)100	117.50(20.33)	
	Others	(5.2)21	117.61(117.51)	
Marital status	Single	(61.7)250	115.92(20.57)	P=0/24
	Married	(22)89	119.98(18.19)	
	divorced	(16.3)66	117.10(23.17)	
Economic status	Poor	(33.1)134	111.79(18.34)	P=0/001
	Moderate	(50.4)204	119.59(18.88)	
	Good	(16.5)67	119.58(22.15)	
smoking	Yes	(39)158	115.59(19.75)	P=0/24
	No	(61)247	117.91(19.46)	
Duration of illness	Less than 1 year	(47.4)197	119.49(16.14)	P=0/04
	3-1 years	(19.5)79	115.75(23.23)	
	More than 3 years	(33.1)134	114.19(21.35)	
Sources of health information	Medical staff	(23.2)94	120.50(15.90)	P=0/001
	Internet	(22.5)91	125.47(19.09)	
	Radio and TV	(26.2)106	114.19(20.60)	
	Newspapers, magazines and books	(12.8)52	114.84(13.50)	
	Friends	(15.3)62	105.93(21.56)	
comorbidity	Diabetes	(18)73	119(18.86)	P= 0/001
	Blood pressure	(32.8)133	108.69(20.26)	
	Hyperlipidemia	(13.1)53	120.69(18.66)	
	Others	(12.1)49	115.53(12.47)	

Table 2 shows that the highest and lowest mean and standard deviation of the score regarding the dimensions of Iranian health literacy questionnaire (IHLQ) are related to the comprehension of health content (65.64 ± 19.38) and access dimensions (62.07 ± 19.91), respectively. Also, the mean and standard deviation of total score of health literacy was 63.77 ± 15.45 . Accordingly, the subjects had no adequate health literacy.

Table 2. Mean and standard deviation of health literacy dimensions in the study population

Health Literacy	Mean	SD	Interpretation
Reading skills	64.89	21.10	Not Enough
Access	62.07	19.91	Not Enough
Understanding	65.64	19.38	Not Enough
Assessment	63.28	20.76	Not Enough
Decision Making	62.96	16.12	Not Enough
Total Health Literacy	63.77	15.45	Not Enough

Discussion

The aim of the present study was to determine health literacy level among patients with angina pectoris referred to selected hospitals in Tehran. The mean \pm SD of health literacy score was 63.77 ± 15.45 , which shows a relatively inadequate health literacy. The results of other studies show a wide range of inadequate health literacy in patients in other parts of the country. For example, in a study of in West Azerbaijan province, Marzangi et al. (2016) stated that 42% of the CAD clients had inadequate health literacy (19). Hajbageri (2017) showed in a study that CAD patients had average and poor health literacy in 82% and 13% of cases, respectively and, overall, CAD patients had poor health status, which was consistent with the results of the present study (20). In a national study on 20,571 Iranian citizens, Tavoosi et al. (2015) found inadequate and relatively inadequate health literacy among 44% of the Iranian population, regardless of disease (13). In a study in Bastak city, Ghaedi et al. (2016) reported

that 51.7% of patients had low health literacy (21). Similarly, in a study on patients with CAD in Khorramabad, Gholami et al. (2017) showed that 75.2% of people had inadequate healthy literacy (22). Also, in a study of health literacy domains, Taghipour et al. (2016) obtained the highest score for the comprehension domain, which is consistent with the present study (23). Health literacy has been introduced as a moderator for the challenges associated with self-management in chronic diseases, and people with inadequate health literacy are at risk for poor patient-physician communication compared to patients with adequate health literacy (24). Edward et al. (2012) showed that patients with long-term problems can develop their health literacy skills through practice and counseling. Accordingly, educating patients and their relatives can increase their awareness of the disease and related care and thus increase their health literacy (25). Peterson et al. (2011) carried out a study titled "Health literacy and its outcomes among patients with heart failure". In their retrospective study on 2156 patients with heart failure, the number of respondents was 1547. They used a three-question questionnaire (helping others read medical material, the extent of health problems due to the difficulty of medical and health instructions, the level of self-confidence when filling hospital and health forms) scored based on a 5-points Likert scale. A total of 1494 people answered more than 1 question. A total of 262 people (17.5%) had low health literacy.

The lowest health literacy rate was related to the domain of access to health recommendations, and it is possible to increase the health literacy rate by educating patients, giving the necessary recommendations and information, and strengthening the relationship between physicians, patients, and people involved in the care process. The highest average health

literacy rate was related to the comprehension dimension, which is consistent with the study carried out by Ahangarzadeh Rezaei (2017) (19). There was significant difference between health literacy and age. Younger people had higher health literacy and health literacy has decreased with increasing age. The findings of the present study are consistent with the study conducted by Dennison et al. (2011) (26). Nekoei-moghadam et al. (2013) found no relationship between health literacy and age, which is inconsistent with the findings of the present study (16). This discrepancy can be attributed to the reduction in the desire to learn and struggling with the problem of forgetfulness in the old age

The results showed that men have a higher health literacy rate, which could be due to the fact that since men are responsible for managing services and needs outside the home and thus deal with such forms more frequently, they are more skilled in reading these forms. In addition, men had a higher level of education than women. In fact, higher basic literacy has led to higher levels of health literacy among men. Consistent with the results of the present study, Reisi et al. (2012) also showed that men had higher levels of health literacy (27). However, Lindstrom et al. (2008) showed different results. The present study showed a significant difference in mean health literacy rate and different education levels. The results of the present study, consistent with the findings of previous studies, such as Reisi et al. (2016) (10), Khosravi et al. (2015) (29), demonstrate the effect of education level on health literacy. People with higher education levels have a higher health literacy rate and achieve a better understanding of health information and instructions implement them more appropriately. The results showed no significant relationship between health levels and age, which are consistent with the findings of studies carried

out by Javadzadeh. et al (30), Tehrani Banihashemi et al. (31), Lee et al (32). It could be said younger people have fewer problems in understanding health information as compared to the older people and, as mentioned, are more careful and attentive than older ones. The findings of the present study revealed that the average health literacy in married patients with heart disease is as compared to the single ones, which is inconsistent with the study carried out by Shojaei et al. (2009) (33).

Conclusion

The findings showed that patients with angina pectoris have inadequate health literacy. In this regard, more attention should be paid to the issue of health literacy as the most important factor in evaluating self-care behaviors and more emphasis should also be placed on the community in health education and health promotion programs. In order to increase the level of health literacy, the issue of training of health care workers should be first taken into consideration. In this regard, it is necessary to use written educational materials along with other educational media and in general, several understandable and potential sources in people referring to health centers to achieve the best results.

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