The relationship between attitude toward self-care behaviors and health literacy in cardiac patients hospitalized in an educational hospital

ABSTRACT

Background and Objective: Self-care has the main role in controlling heart failure. Moreover, health literacy is a key determinant of health and the first priority in improving the quality of health services. The purpose of this study was to determine the relationship between attitude toward self-care behaviors and literacy in cardiac patients admitted to educational hospitals in Khorramabad city.

Materials and Methods: The present study was a cross-sectional and analytical study in which the 182 heart patients admitted to the educational hospitals of Khoramabad. They were randomly assigned to several stages. The research tool was standard questionnaires about self-care behaviors and Health Literacy Assessment Questionnaire (HELIA). Data were analyzed using SPSS 16 software via independent t-tests, analysis of variance, and Pearson correlation coefficient.

Results: The mean score of self-care in patient was 36.5± 5.32. According to the self-care division, 29.7 % of participants had average and 70.3 had good self-care. The mean score of health literacy was 99.25 ±52.66. The correlation coefficient between self-care and health literacy score was 0.23 (p<0.001).

Conclusion: The need to improve the health literacy in cardiovascular patients as a prerequisite for promoting self-care behaviors should be addressed through mass media and health centers. This help controls disease and enhances patients' ability to manage their disease.

Paper Type: Research Article

Keywords: attitude, Self-Care, Health literacy, Cardiac patients

Mohamadnia motlagh K
Department of Public Health, Lorestan University of Medical Sciences, Iran

Reisi Dehkordi F
PhD health promotion, Lorestan University of Medical Sciences, Iran

SHamsi M
PhD health promotion, Arak University of Medical Sciences, Iran

Birjandi M
PhD in Biostatistics, Lorestan University of Medical Sciences, Iran

Rezaei N
Department of Public Health, Lorestan University of Medical Sciences, Iran

Almasi Moghadam F
Department of Public Health, Lorestan University of Medical Sciences, Iran

Introduction

Cardiovascular diseases are the most common cause of death in most countries of the world, including Iran and the most important cause of disability (1). About one-third of all deaths worldwide and 2% of all deaths attributed to death and disability are attributed to these diseases (2). These diseases kill about 5 million people worldwide annually, more than three-quarters of them in low- and middle-income countries (3, 4). It is estimated that the number of deaths from cardiovascular disease will reach 23.6 million by 2030 (5).

According to the latest statistics, nearly 6 million people in the United States suffer heart failure and more than 6,000 new cases are diagnosed each year. The rate of referral to emergency departments and hospital stays is still high (6).

If the patient is able to receive appropriate care, receive treatment and post-discharge treatment and receive adequate social support, over 50% of readmissions will be preventable (7). Orem self-care is one of the most comprehensive self-care theories that provide an appropriate clinical guideline for planning and implementing self-care principles (8). Orem considers man a self-care agent who provides all the necessary health care to maintain his life and well-being and to constantly feel well (9).

According to studies by the American Center for Health Care Strategies, people with low health literacy are less likely to understand and follow written and spoken information provided by health professionals and have poorer health status, higher hospitalization rate and They are more likely to refer to a physician, perform poorer self-care skills, have less preventive care and thus incur higher medical costs (10).

In the preliminary results of a 2013 study by Kato N on patients with heart failure in Japan, patients were classified into two groups of good self-care and poor self-care, with 65% of patients classified as poor self-care in one group. A 2-year follow-up showed that a more frequent heart attack occurred in the poor self-care group (11).

Another study conducted by Khoshtarash et al. on self-care behaviors and related factors in heart failure patients showed that the mean score of self-care was 5.4 ± 37.9 and only 6.1% of the units had good self-care behaviors (12).

In the study by Farghadani et al., The findings showed that the self-care status of patients with heart failure was moderate. Greater focus and attention on health care and nursing care is needed to improve self-care, especially self-care management in these patients (13).

On the other hand, there is evidence that poor health literacy is associated with adverse health outcomes, detrimental health behaviors, less patient satisfaction and in some cases higher mortality. In fact, many believe that poor health literacy actually contributes to health inequalities (14). In addition, the results of numerous studies have shown that health literacy affects the general health of individuals (15) and the quality of life associated with health (16).

The World Health Organization defines health literacy as "the cognitive and social skills that determine the motivation and ability of individuals to acquire, understand, and use health information to promote and maintain good health" (17). Health literacy is the result of a collaborative effort of social and individual factors, addressing health literacy concerns and dimensions and has been recognized as a critical and important indicator of health care outcomes and costs (18, 19). Given that it is necessary for a person to become aware of, and then accept and eventually change, any behavioral change, numerous studies have been conducted on self-care behaviors and the results of some of them have been poorly reported

which is related to people's attitude towards this issue. Since very little research has been done on people's attitude towards these behaviors, the present study aimed to determine the attitude toward self-care behaviors and its relationship with health literacy in cardiac patients admitted in Khorramabad educational hospitals.

Methods

The present study was a cross_sectional and analytical study in which the 182 heart patients admitted to the educational hospitals of Khoramabad were randomly assigned to several stages. Each hospital was considered as one class and within each class proportional to the number of patients admitted to the cardiovascular/internal ward of each educational hospital (according to the reported statistics of the Hospital Medical Statistics section), samples were selected and included in the study. Questionnaires were completed by the researcher in the form of self-report and for the illiterate. Inclusion criteria included being over 18 years of age, willingness to participate in research, ability to comprehend, recognize and speak, lack of speech-auditory problems, complete alertness at the time of research, and exclusion criteria included having severe emergency conditions, having pain and discomfort when completing the questionnaire and the use of drugs that affect mental health. It should be noted that in order to comply with ethical considerations, all participants were aware of the purpose of the study and all personal information was kept confidential.

The tools used in this study were the Persian version of European self-care behaviors questionnaire and Iranian health literacy questionnaire. The scientific validity of the Persian version of the European Self-Care Behaviors Questionnaire in courageous research was determined through content validity and its

reliability was 0.68 based on Cronbach's alpha and 0.71 in Khoshtarash et al. study (13). The questionnaire consists of 9 questions and is rated on a 5-point Likert scale (ranging from completely agree with a score of 5 to strongly disagree with a score of 1). To measure self-care behaviors, the scoring scale is divided from 9 to 45 and the lower the score, the weaker the attitude. A score of 9 to 20 indicates a poor attitude, a score of 21 to 33 indicates a moderate attitude, and a score of 34 to 45 indicates a good attitude.

The data were collected in the second part of the Iranian Health Literacy Questionnaire (IRIS), whose content validity was confirmed, and the reliability of the various dimensions of the questionnaire based on Cronbach's alpha ranged from 0.71 to 0.96. The questionnaire is conventionally divided into five dimensions: availability and access to information, ability to read and understand information, decision making and communication ability, health knowledge and behavior, personal and social empowerment. Total health literacy comes from the sum of all dimensions.

Finally, after data collection, the data were analyzed by SPSS 16 software using descriptive statistics and independent t-test, analysis of variance and Pearson correlation coefficient. The data distribution was obtained by Kolmogorov-Smirnov normal test.

Results

A total of 182 cardiac patients with a mean age of 62.49 ± 49.87 years were entered, the least age was 26 years and the highest was 93 years. Most participants (59.9%) were female and 40.1% were male, 75.3% were married and 24.7% were single. In terms of education level, 66.5% were illiterate, 22% had a secondary school degree and 11% had a high school diploma. 67.5% had a history of hospitalization (Table 1).

Table 1. Demographic characteristics of cardiac patients admitted to educational hospitals

		Frequency	Percent
Gender	Female	109	59.9%
	Male	73	40.1%
Marital Status	Single	45	24.7%
	Married	137	75.3%
Educaton Level	Illiterate	121	566.5%
	Secondary	40	22%
	Diploma and higher	20	11%
Hospitaliza-tion History	Yes	123	67.6%
	No	59	33.4%
place of residence	Capital	101	555.5%
	City	33	18.1%
	Village	41	22.5%

The mean health literacy of all heart patients was 99.25 ± 52.66 and had a mean of personal and social empowerment with 33.35 ± 6.32, 32.59 ± 19.81 ability to read and understand, and access to information 11.75 ± 23.29, Health Knowledge and Behavior 18.49 ± 6.21, Decision Making and Relationship 2.4 ± 1.15 had the highest mean which showed average levels of health literacy in all five dimensions.

The results of the statistical test showed that there was a significant relationship between general health literacy level and education level. There was a significant relationship between the dimension of ability to read and understand information and the dimension of individual and social empowerment with gender (p = 0.001), hospitalization history (p = 0.02) and place of residence (p = 0.002). There was also a significant relationship between knowledge dimension and health behavior with gender (p = 0.001), place of residence (p = 0.02) and between access level and information acquisition with hospitalization history (p = 0.02) (Table 2).

Finally, after weighing the scores, 51.6% had poor health literacy, 23.1% had moderate health literacy and 25.3% had adequate health literacy. According to the results, the mean score of attitude toward self-care behaviors was 36.5 ± 5.32, 128 of them (70.3%) at good level, 54 (29.7%) at a moderate level and none were at a poor level (Table 3).

Table 2. Relationship between Health Literacy Dimensions and Background Variables in Cardiac Patients Hospitalized in Khorramabad Educational Hospital

Health Literacy Dimensions		Access level And information		Ability to read and understand information		Awareness and behavior		Ability to make decisions and communicate		Individual and social empowerment	
Background variables		M ±Sd	P	M ±Sd	P	M ±Sd	P	M ±Sd	P	M ±Sd	P
Gender	Female	22/11±88/22	5/0	39/17±49/28	001/0	24/1±22/2	01/0	00/6±11/18	3/0	23/6±19/32	002/0
	Male	56/12±90/23		67/21±71/38		96/0±67/2		51/6±06/19		08/6±09/35	
Marital Status	Single	25/11±00/23	8/0	33/18±28/28	08/0	1/1±62/2	1/0	85/5±35/18	8/0	85/6±95/31	08/0
	Married	95/11±39/23		14/20±00/34		1/1±32/2		35/6±45/18		09/6±81/33	
Education Level	Illiterate	85/10±15/21	00/0	90/4±64/19	00/0	09/1±04/2	00/0	95/5±02/17	00/0	91/4±83/30	00/0
	Secondary	03/12±75/24		19/11±32/55		02/1±97/2		92/5±55/20		26/5±27/37	
	Diploma and higher	84/11±25/33		56/6±40/65		67/0±35/3		86/4±40/23		21/6±90/40	
Hospi-talization History	Yes	68/10±86/21	02/0	58/17±81/29	01/0	16/1±43/2	5/0	15/6±19/18	03/0	01/6±62/32	02/0
	No	34/13±27/26		90/29±38/38		36/1±32/2		34/6±11/19		72/6±88/34	
Place of Residence	Capital	42/11±30/24	08/0	53/20±73/36	002/0	19/1±61/2	02/0	18/6±77/18	5/0	67/6±22/34	009/0
	City	08/14±78/23		84/19±66/29		09/1±15/2		50/6±51/17		72/5±78/33	
	Village	32/8±63/19		31/14±65/24		01/1±09/2		00/6±85/17		43/5±68/30	

Table 3. Attitudes toward self-care behaviors in cardiac patients admitted to educational hospitals

		Totally Disagree (1)	Disagree (2)	No idea (3)	Agree (4)	Totally Agree (5)
1	I weigh myself every day	17.6	2.7	8.2	3.8	67.6
2	I go to a doctor, a nurse or a medical center if my breathing becomes worse	1.6	0.5	2.2	1.1	94.5
3	If my legs get swollen more than usual, I go to a doctor, a nurse or a medical center	4.4	0.00	4.4	2.7	88.5
4	If I gain more than two kilograms a week, I will go to a doctor or treatment center	21.9	2.2	6.6	3.8	54.9
5	I limit consumption fluids and do not drink 1.5 to 2 liters a day	49.5	11.0	9.3	6.6	23.16
6	If I get too tired, I go to the doctor.	43.4	1.6	4.4	6.0	44.5
7	I eat low salt foods.	9.3	4.4	4.4	5.5	76.4
8	I take my medication as prescribed.	2.2	1.1	1.1	5.5	90.1
9	I exercise regularly.	22.5	3.3	6.6	10.4	57.1

The correlation coefficient between attitude toward self-care behaviors and health literacy was 0.23, indicating a positive relationship between the two variables (p <0.001).

Discussion

The results showed that there is a direct and significant relationship between the five levels of health literacy and attitude toward self-care behaviors in patients with heart disease so that people with higher levels of health literacy have a better attitude. In the Macabasco et al. study also found that patients with heart failure who had higher health literacy had better self-care (21). Williams et al. have also shown that inadequate health literacy is a serious obstacle to self-care behaviors in patients (22).

The results showed that the level of general health literacy of patients was poor. The results of various studies in countries around the world have also reported a wide range of inadequate health literacy. In the study of adults in Isfahan, 53.5% had borderline and inadequate health literacy (15). Also, a study by Ghanbari et al. in Tehran health centers showed that 54.6% of people had borderline and inadequate health

literacy (23).

However, a study by Wanger et al found that average and poor health literacy in adults was 11.4% (24). Afshari et al. (2014) also examined four dimensions of health literacy in the adults of Tuyserkan and found that most participants had moderate to poor levels of health literacy (25). The Reisi also assessed the health literacy of most participants as inadequate (10).

In this study, no correlation was found between the level of general health literacy and gender among patients, which is consistent with the study by Paasche-Orlow et al. (26), Bake et al. (27) and Lee (28). This finding can be related to the level of education and also to referring physicians and nurses in both sexes to obtain health information (29). In the Afshari study, women had higher levels of health literacy than men (25).

There was also a significant relationship between the mean score of access to information and the history of hospitalization, which could be attributed to the patient's referral to a medical center for being aware of their illness. There was also a correlation between the later score of using information and understanding of information

with gender variable so that men were higher. Research by Reisi (10) and Khosravi (30) and Cho (31) also showed that men had a higher level of health literacy, which is in line with the results of this study.

The majority of people in this study had good attitudes toward self-care behaviors that were expected to perform better, but nonetheless, in the Azarbad study of the association between self-care behaviors and self-care needs in patients with heart failure, half Self-care behaviors were moderate in patients. In the Aksel study in Turkey (32), the self-care ability of heart failure patients has been poorly reported. Also in Shojaie et al.'s (33) study of self-care behaviors in patients with heart failure, 26% of patients had good self-care behaviors and the rest followed moderate and poor behaviors. However, unlike the above studies, in the study of Klimm et al (34), which aimed to identify potential determinants of heart failure self-care in systolic heart failure patients, it was shown that overall self-care score in the studied units was good.

In this study, there was no relationship between attitudes toward self-care behaviors and gender of the studied samples. Artinian et al. (35) also found no significant relationship between gender and self-care ability in self-care patients with heart failure. However, in Akyol et al.'s study (36), males had higher self-care ability than females, but there was no statistically significant difference in bisexual self-care ability. In a study conducted in Ardebil, which aimed to determine the self-care ability of patients with hypertension, men had higher self-care ability than women.

Conclusion

Overall, the majority of patients in this study had a good attitude toward self-care behaviors. However, statistics indicate an increase in chronic illnesses, which raises the question of why a good attitude in this area is still not widely practiced. It can be caused by mental stress and life problems such as poor economic status, smoking, alcohol or lack of access to facilities and high follow-up costs. Since there was a significant relationship between attitudes and health literacy in this study and the level of overall health literacy was poor, so it is best to start with different educational classes and teaching methods and using experienced teachers. Developing sensitivity among staff in both health care sectors to identify and eliminate barriers to appropriate behavior within the target group. Also, monitor staff performance (not as they increase staff stress and decrease their quality of life). On the other hand, in all urban, suburban and rural communities, the necessary facilities (geographically accessibility, short waiting times, cost control in the private and public sectors) should be provided for the benefit of individuals.

Limitations and Suggestions

In this study, due to the illiteracy of the majority of the target group, the interview method was used. due to the time, it took, as well as the differing perceptions of the respondents about the limitations of the study. The present study was a cross-sectional study, therefore, it was not possible to obtain causal relationships, suggesting that other tools could be used to examine more accurately the causal relationship between self-care behaviors and health literacy in people with heart disease.

of Lorestan University of Medical Sciences and funded by the university. We would like to express our gratitude to the Research Vice President of this University, as well as to all those who helped us with this research.

References

1. Roger VL, Go AS, Lloyd-Jones DM, Benjamin EJ, Berry JD, Borden WB, et al. Heart disease and stroke statistics--2012 update: a report from the American Heart Association. Circulation. 2012;125(1):e2-e220.

2. Sun L-y, Lee E-w, Zahra A, Park J-h. Risk factors of cardiovascular disease and their related socio-economical, environmental and health behavioral factors: focused on low-middle income countries-a narrative review article. Iranian journal of public health. 2015;44(4):435.

3. Tsolekile LP, Abrahams-Gessel S, Puoane T. Healthcare professional shortage and task-shifting to prevent cardiovascular disease: implications for low-and middle-income countries. Current cardiology reports. 2015;17(12):115.

4. Shadmani FK, Karami M. Joint effect of modifying selected risk factors on attributable burden of cardiovascular diseases. International journal of preventive medicine. 2013;4(12):1461.

5. Beganlic A, Pavljasevic S, Kreitmayer S, Zildzic M, Softic A, Selmanovic S, et al. Qualitative Evaluation of Cardiovascular Diseases Management in Family Medicine Team in One Year Level. Medical Archives. 2015;69(3):140.

6. Vahedian-Shahroodi M, Tehrani H, Mohammadi F, Gholian-Aval M, Peyman N. Applying a health action model to predict and improve healthy behaviors in coal miners. Global health promotion. 2018:1757975918764309.

7. Daryasari GA, Karkezloo NV, Mohammadnejad E, Vosooghi MN, Kagi MA. Study of the self-care agency in patients with heart failure. Iran J Crit Care Nurs. 2012;4:203-8.

8. Peyman N, Rezai-Rad M, Tehrani H, Gholian-Aval M, Vahedian-Shahroodi M, Heidarian Miri H. Digital Media-based Health Intervention on the promotion of Women's physical activity: a quasi-experimental study. BMC Public Health. 2018;18(1):134.

9. Siuki HA, Peyman N, Vahedian-Shahroodi M, Gholian-Aval M, Tehrani H. Health Education Intervention on HIV/AIDS Prevention Behaviors among Health Volunteers in Healthcare Centers: An Applying the Theory of Planned Behavior. Journal of Social Service Research. 2019;45(4):582-8.

10. Reisi M, Javadzade SH, Mostafavi F, Sharifirad G, Radjati F, Hasanzade A. Relationship between health literacy, health status, and healthy behaviors among older adults in Isfahan, Iran. Journal of education and health promotion. 2012;1(1):31.

11. Kato N, Kinugawa K, Nakayama E, Tsuji T, Kumagai Y, Imamura T, et al. Insufficient self-care is an independent risk factor for adverse clinical outcomes in Japanese patients with heart failure. International heart journal. 2013;54(6):382-9.

12. Momeni m, Khoshtarash m, Ghanbari Khanghah a, Salehzadeh A, Rahmatpour P. Self-care behaviors and related factors in patients with heart failure reffering to medical & educational center of heart in Rasht.. Journal of Holistic Nursing and Midwifery. 2013;23(1):22-9.

13. Zahra Farghadani, Zahra Taheri-Kharameh, Alireza Airi-Mehra, Ali Montazeri. Self-care behaviors and its related factors in patients with heart failure. Health Monitor Journal of the Iranian Institute for Health Sciences Research. 2018;17(4):371-9.

14. Farin E, Ullrich A, Nagl M. Health education literacy in patients with chronic musculoskeletal diseases: development of a new questionnaire and sociodemographic predictors. Health education research. 2013;28(6):1080-91.

15. Tehrani H, Majlessi F, Shojaeizadeh D, Sadeghi R, Kabootarkhani MH. Applying socioecological model to improve women's physical activity: a randomized control trial. Iranian Red Crescent Medical Journal. 2016;18(3).

16. Wang C, Kane RL, Xu D, Meng Q. Health literacy as a moderator of health-related quality of life responses to chronic disease among Chinese rural women. BMC women's health. 2015;15(1):34.

17. Frisch A-L, Camerini L, Diviani N, Schulz PJ. Defining and measuring health literacy: how can we profit from other literacy domains? Health promotion international. 2011;27(1):117-26.

18. Nam S, Chesla C, Stotts NA, Kroon L, Janson SL. Barriers to diabetes management: patient and provider factors. Diabetes research and clinical practice. 2011;93(1):1-9.

19. Tol A, Pourreza A, Rahimi Foroshani A, Tavassoli E. Assessing the effect of educational program based on small group on promoting knowledge and health literacy among women with type2 diabetes referring to selected hospitals affiliated to Tehran University of Medical Sciences. Razi Journal of Medical Sciences. 2013;19(104).

20. Haghdoost AA, Rakhshani F, Aarabi M, Montazeri A, Tavousi M, Solimanian A, et al. Iranian health literacy questionnaire (IHLQ): An instrument for measuring health literacy in Iran. Iranian Red Crescent Medical Journal. 2015;17(6).

21. Macabasco-O'Connell A, DeWalt DA, Broucksou KA, Hawk V, Baker DW, Schillinger D, et al. Relationship between literacy, knowledge, self-care behaviors, and heart failure-related quality of life among patients with heart failure. Journal of general internal medicine. 2011;26(9):979-86.

22. Williams MV, Baker DW, Parker RM, Nurss JR. Relationship of functional health literacy to patients' knowledge of their chronic disease: a study of patients with hypertension and diabetes. Archives of internal medicine. 1998;158(2):166-72.

23. Ghanbari S, Majlessi F, Ghaffari M, Mahmoodi Majdabadi M. Evaluation of health literacy of pregnant women in urban health centers of Shahid Beheshti Medical University. Daneshvar. 2012;19(97):1-12.

24. von Wagner C, Knight K, Steptoe A, Wardle J. Functional health literacy and health-promoting behaviour in a national sample of British adults. Journal of Epidemiology & Community Health. 2007;61(12):1086-90.

25. Afshari M, Khazaei S, Bahrami M, Merati H. Investigating adult health literacy in Tuyserkan city. J Educ Community Health. 2014;1(2):48-55.

26. Paasche-Orlow MK, Parker RM, Gazmararian JA, Nielsen-Bohlman LT, Rudd RR. The prevalence of limited health literacy. Journal of general internal medicine. 2005;20(2):175-84.

27. Baker DW, Gazmararian JA, Williams MV, Scott T, Parker RM, Green D, et al. Functional health literacy and the risk of hospital admission among Medicare managed care enrollees. American journal of public health. 2002;92(8):1278-83.

28. Lee S-YD, Tsai T-I, Tsai Y-W, Kuo KN. Health literacy, health status, and healthcare utilization of Taiwanese adults: results from a national survey. BMC public health. 2010;10(1):614.

29. SheikhSharafi H, Seyedamini B. Assessment of health literacy and self-care in heart failure patients. Journal of Health Literacy. 2017;1(4):203-19.

30. Khosravi A, Kh A, Sh A, Tahmasbi R. Health literacy levels of diabetic patients referred to Shiraz health centers and its effective factors. Health Inf Manage. 2015;12(2):205.

31. Cho YI, Lee S-YD, Arozullah AM, Crittenden KS. Effects of health literacy on health status and health service utilization amongst the elderly. Social science & medicine. 2008;66(8):1809-16.

32. Oksel E, Akbiylk A, Kocak G. Self-care behavior analysis of patients with chronic heart failure. Eur J Cardiovasc Nurs. 2009;31(7):s22.

33. Fatemeh Shojaei, Sedigheh Asemi, Akram Najaf Yarandi, Fatemeh Hosseini. Self- care behaviors in patients with heart failure. Health Monitor Journal of the Iranian Institute for Health Sciences Research. 2009;8(4):361-9.

34. Peters-Klimm F, Campbell S, Müller-Tasch T, Schellberg D, Gelbrich G, Herzog W, et al. Primary care-based multifaceted, interdisciplinary medical educational intervention for patients with systolic heart failure: lessons learned from a cluster randomised controlled trial. Trials. 2009;10(1):68.

35. Artinian NT, Magnan M, Christian W, Lange MP. What do patients know about their heart failure? Applied Nursing Research. 2002;15(4):200-8.

36. Akyol AD, Çetinkaya Y, Bakan G, Yaralı S, Akkuş S. Self-care agency and factors related to this agency among patients with hypertension. Journal of clinical nursing. 2007;16(4):679-87.