

Relationship Between Health Literacy and Self-Care in Heart Failure Patients

Nsrin Rezaee

Assistant Professor, Community Health Research Center, Zahedan University of Medical Sciences, Zahedan, Iran.

Maryam Seraji

* Assistant Professor, Health Promotion Research Center, Zahedan University of Medical Sciences (corresponding authors): serajimaryam@gmail.com

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ABSTRACT

Background and Objective: Heart failure is a chronic and costly disease. A Healthy lifestyle is effective in prevention and health literacy is also needed to improve the self-care of these hospitalized heart failure patients.

Materials and Methods: This descriptive cross-sectional study of correlation type was carried out on 180 heart failure patients hospitalized in Zahedan hospitals in 2018. Samples were selected using convenient sampling method. Data were collected through a questionnaire containing three parts of demographic information, health literacy, and self-care. Data were analyzed using SPSS 19 software and statistical tests including independent T-test, ANOVA and Pearson correlation coefficient.

Results: The mean score of the health literacy level was 22.7 (out of 43) with a standard deviation of 6.6. Based on the results, 40% of patients had inadequate health literacy level, 45% had a moderate level of health literacy and 15% had adequate and desirable health literacy level. The mean self-care score was 44.7 and the standard deviation was 1.9 (out of 80) which was higher than the average. Based on the Pearson correlation coefficient, there was a direct and significant relationship between health literacy and self-care ($r = 0.48$, $p = 0.021$); with increasing health literacy, self-care also improved.

Conclusion: The findings of this study showed that in patients with heart failure, self-care level increases with increasing health literacy. Therefore, educational interventions in this field are recommended to improve the health literacy of these patients.

Paper Type: Research Article

Keywords: Health Literacy, Self-Care, Heart Failure

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Introduction

Heart failure is a common and chronic disease that affects general health (1, 2). In the United States, there are about 5.7 million people with heart failure whose annual cost of treatment is \$ 31 billion (3, 4). In Iran, this disease is one of the main causes of disability and death (5-8). Although heart failure diagnostic and treatment methods have been improved today, mortality rates have not changed (6) and hospitalization is still common (8, 9). Since managing heart failure is complex and requires multiple skills, it is important for patients to take part in self-care to avoid poor outcomes (10).

Health literacy is the degree that enables individuals to access, process, and understand the basic health information and services needed to make their own health decisions (11). Many studies have demonstrated the relationship between low levels of health literacy and hospitalization, more use of emergency care, lower drug useability, less ability to interpret labels and health messages, poor general health status and higher mortality rate (12). Patients with inadequate health literacy do not take proper medication and do not have self-efficacy in their self-care behavior (13, 14). Therefore, these patients may use more health care services, such as visiting hospitals and emergency cares (15); so, they incur more medical expenses (16).

Studies show that patients with inadequate health literacy are twice as likely to be hospitalized as those who have a high level of health literacy (17, 18). In addition, studies in the United States and Britain have shown that limited health literacy in the elderly is independently associated with an increase in mortality (19). Low health

literacy is a general health issue that leads to a social slump and potentially enhances existing health inequalities (20-24). One of the best ways to prevent the onset, progress, and complications of diseases is to provide self-care to patients (21). Self-care is one of the most important aspects of treatment in patients with heart failure (25-27). Studies show that in patients with heart failure, there is a relationship between poor health literacy and mortality (28, 29), hospitalization (30-35) and recurrence of heart failure (32, 36). Aging, low education level, poor social and economic status and the number of illnesses associated with heart disease are affected by health literacy. Inadequate health literacy is an important factor for poor physical functioning in patients with heart disease and increasing health literacy reduce the quality of life and the risk of heart attacks (33, 37).

The public health campaign shows that health improvement was more successful in people with higher health literacy between 2003 and 2008 and unhealthy behaviors in people with low health literacy were five times higher (34). Self-care improves the quality of life and also reduces the cost of treatment. On the other hand, self-care is influenced by beliefs, attitudes and Individual beliefs, as well as the values and culture of the society (9). Health literacy as a factor affecting the health status is the result of treatment and the relationship between physicians and patients. Increasing the level of health literacy in heart failure patients makes it easier to understand dietary information and regular use of the drug. Moreover, health literacy plays a vital role in facilitating the acceptance of their illness and helps individuals to participate more in decision-making. Also, people with higher health literacy are

more attentive to their health status (11). Therefore, considering the importance of self-care and its effect on improving the patients' status and the importance of health literacy as a driving force towards achieving a favorable health and considering the expansion of cardiovascular disease in Iran and other countries around the world, the present study aims to investigate the relationship between health literacy and self-care in heart failure patients.

Methodology

This descriptive cross-sectional study of correlation type was carried out on 180 heart failure patients hospitalized in Zahedan hospitals (Ali ibn Abi Talib hospital and Khatam al-Anbia hospital) in 2018. Inclusion Criteria were being hearted failure patient, at least 4 months from the discontinuation of the diagnosis, patients admitted to CCU and post-CCU wards, at least 25 years of age, lack of mental and perceptual disorders, having the speech ability, informed consent and having appropriate physical conditions to answer questions.

Samples were selected using convenient sampling method. Data were collected through a questionnaire containing three parts of demographic information, health literacy, and self-care.

Demographic information questionnaire: It assesses information issues such as age, gender, marital status, educational level, occupation, economic status and underlying illnesses, duration of illness and the source of their knowledge of health literacy.

Health literacy questionnaire: The questionnaire consists of two parts: Reading comprehension skills and practical health literacy test in adults. The content validity method

was used to determine the validity of the questionnaire. The questionnaire was provided to eight different specialists, including internal medicine specialists, cardiologists and health education specialists and the validity was confirmed. Cronbach's alpha test was used to determine the reliability of the tool. In this questionnaire, the Cronbach's alpha value was 0.8 which indicates the high reliability of the questions.

Self-care behaviors in patients with heart failure questionnaire:

Validity and reliability of this questionnaire were verified by Seraji et al. content validity ratio (CVR) of this questionnaire was 0.71 and CVI was 0.81 (6). The reliability of the questionnaire (Cronbach's alpha) was 0.81 and 0.81 in awareness and self-care behaviors, respectively. The questions were in two sections: demographic information about patients with HF (9 items), and questions of awareness about self-care behaviors (13 items). Correct answer scored 3, ÇI do not knowÇ scored 2 and wrong answer scored 1. [If a person chooses ÇI do not knowÇ, he or she is prepared to learn, but when a person chooses the wrong answer, first we have to correct his or her wrong information, and then teach him or her the right information.] Total scores ranged from 13 to 39. Questions on attitude toward self-care included 12 questions of 5 points Likert style (Totally agree, agree, no idea, disagree, totally disagree), and were scored from 1 to 5 (range 12-60). Questions on the practice of self-care behavior included 16 5-option items (always, often, sometimes, rarely, never), and scored 1-5 (range 16-80).

After coordinating with the units involved in satisfying the units participating in the study, the collected data were analyzed using

the Pearson correlation coefficient, one way ANOVA and t-test. SPSS software version 19 was used and the significance level was less than 0.05.

Results

The age mean and standard deviation of participants were 8.5 ± 57.5 years. 53% were illiterate and 58% were unemployed. Also, the findings of this study showed that the patients' source of knowledge about heart failure consisted of 60% physician, 20% friends and relatives, 15% television and 5% internet. Based on the results of this study, the mean score of the health literacy level was 22.7 (out of 43) with a standard deviation of 6.6 and the mean self-care score was 44.7 ± 1.9 (out of 80). In the studied population, the maximum health literacy score was 43 and

the minimum score was 14.

The results of this study showed that there is a significant statistical relationship between the level of health literacy with age, gender, education level, occupation and source of information about health literacy. Also, there was a significant relationship between self-care with age, occupation and education level, so that the level of adequate health literacy was higher in older people (Table 2).

Based on the Pearson correlation test, with increasing age among patients with heart failure, the level of health literacy also increased. Based on the results, there was a positive and significant relationship between health literacy and awareness, attitude and self-care behaviors; that is, by improving the health literacy, awareness, attitude, and self-care behavior also improved (Table 3).

Table 1: health literacy level and self-care in patients with heart failure referring to hospitals in Zahedan

| Health Literacy | Frequency (%) | Mean \pm standard deviation | Self-care level | Frequency (%) | Mean \pm standard deviation |
|-----------------|---------------|--------------------------------|-----------------|---------------|--------------------------------|
| Inadequate | (40)72 | 6.6 \pm 7.22 (out of 43) | Inadequate | (35.6)64 | 9.1 \pm 7.44 (out of 80) |
| Borderline | (45)81 | | Borderline | (47.7)86 | |
| Adequate | (15)27 | | Adequate | (16.7)30 | |
| Total | (100)180 | | Total | (100)180 | |

Table 2: Relationship between health literacy and self-care with demographic variables in patients

| Demographic Variables | Health Literacy | Self-Care |
|---|-----------------|-----------|
| Age | P=0.01* | P=0.045* |
| Gender | P=0.025** | P=0.63** |
| Occupation | P=0.042* | P=0.02* |
| Education Level | P=0.032* | P=0.03* |
| source of information about health literacy | P=0.021** | P=0.34** |

* ANOVA, ** t-test

Table 3: The Relationship between Health Literacy, Knowledge, Attitude and Self-Care Behavior in Patients with Heart Failure

| Variable | Knowledge | | Attitude | | Self-Care Behavior | |
|-----------------|-----------|------|----------|-------|--------------------|-------|
| | r* | p | r* | p | r* | p |
| Health Literacy | 0.41 | 0.03 | 0.44 | 0.035 | 48/0 | 0.021 |

*The Pearson correlation coefficient

Discussion and conclusion

The results showed that almost 40% of patients with heart failure had inadequate and borderline health literacy levels. The findings of the study by Marzangi et al. also indicate a low level of health literacy in patients with heart failure (37).

The results of this study showed that there is a significant relationship between the level of health literacy and age; so that with increasing age in patients with heart failure, the level of health literacy also increased. This finding is consistent with the results of studies which believe that with increasing age, understanding of reading and the level of health literacy increases (39, 40).

Also, the present study showed that the percentage of borderline and inadequate health literacy was high in over 50 years old people in Zahedan. However, the effect of health literacy on health status, taking medication and following doctor's orders, participating in decision-making on treatment, expressing health concerns, communicating with a physician, self-health awareness, receiving preventive services, controlling chronic diseases, using health services and ... has been approved. Therefore, the existence of a wide range of borderline and inadequate health literacy in over 50 years old people in Zahedan, most of which are obscured by evidence, is a warning to health officials and policymakers. According to this finding, it can be stated that by increasing the health literacy level, people become more sensitive to their health and since they see themselves exposed to various diseases, they are moving toward learning about health issues and health knowledge.

The findings of this study showed that the source of patients' knowledge about heart

failure were physicians, friends and relatives, television, and eventually the Internet. Findings of the research by AbbasZadeh et al. also support the finding that physicians are the most important source of information and then, there are Internet, friends. and relatives (38). This finding can be explained by the fact that patients are more confident in the knowledge of physicians and their awareness of their illness and can gain significant information based on their own illness face-to-face. So, they prefer physicians as the first source of information.

The findings of this study show that more than half of the participants do not have enough health literacy and self-care behaviors which indicate the need for education in the community to improve the level of health literacy and self-care at a desirable level. In order to achieve this goal, it seems that there is a need for more efforts to increase the level of health literacy of the community as well as the culture of self-care. The final result of this study showed that there is a significant relationship between health literacy and self-care behaviors in heart failure patients. This result is consistent with the results of Wu JR et al. (41).

Conclusion

Based on this study, the level of health literacy and self-care was inadequate. The level of health literacy and self-care showed a statistically significant relationship with age, occupation and education level. Since health literacy is associated with the level of self-care, the media and educational materials produced in this regard should be simple, understandable, affordable and accessible and be based on the social, economic and cultural conditions of that region. Therefore,

according to the results of this study, it is suggested that further studies on the health literacy of patients with heart failure and self-care level should be considered and self-care education programs for heart failure patients should be more focused.

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