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Self-Care Behaviors among Patients with Heart Failure in Iran

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ABSTRACT

Introduction: Recovery from heart failure and dealing with its effects is significantly influenced by patient's self-care. In order to maximize the effects of behavioral interventions and for educational planning, it is essential to know how much experience and information do patients with heart failure have about their disease and self-care behaviors. The present study aimed to identify self-care behaviors in patients with heart failure. ***Methods:*** Eighty heart failure patients hospitalized in Shahid Madani Training Center in Tabriz, Iran, participated in this study. Data collection was done through Self-Care of Heart Failure Index (SCHFI) that contained 22 questions in three sections including self-care behaviors, self-care management and confidence in performing self-care behaviors. ***Results:*** The patient's self-care behaviors in three behavioral sub categories of maintaining, managing and confidence were low. The most repeated self-care behavior in the participating patients was taking medication and visiting the doctor. ***Conclusion:*** The results of the study showed low levels of self-care behaviors in patients with heart failure, which notes the need for patient empowerment. It is necessary to develop appropriate strategies in this regard by the authorities.

Introduction

Despite the recent developments in healthcare, patients with heart failure still experience symptoms which can be prevented or treated.[1] The only way that these preventions and treatments could be effective is that the patients conditions be correctly diagnosed and appropriate treatments are implemented. This is only possible if the patients perform self-care behaviors effectively and be committed to the treatment diets.[1] Heart failure patients are responsible for a major part of taking care of themselves,[2] because the most part of this process is at home, where it is beyond the supervision or direct support of professionals in health care centers.[3]

Self-care in patients with heart failure is referred to methods in which patients participate in their own care and make decisions about managing the symptoms or illness signs.[4] Decisions that make positive health behavior choices are called maintaining self-care behaviors.[5] These behaviors in heart failure include commitment to treatment diet, having low-salt diet, limiting alcohol intakes, being physically active, avoid smoking, weight controlling and controlling the signs and symptoms of illness.[6] In comparison with maintaining self-care behaviors, self-care management behaviors are most challenging in heart failure and decisions that patients make in response to the signs and symptoms are more critical.[4] These behaviors include early recognition of signs and symptoms of

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the illness, judgment about whether these signs are associated with health, action or response to symptoms and assess the effectiveness of behaviors used to manage the illness.[6] Confidence in performing self-care behaviors is called confidence in self-care.[2]

Information about different populations showed that about 50% of hospitalized heart failures were due to readmission within 6 months after the initial discharge from the hospital.[5] Patient's inability in self-care behaviors, not following diets as well as inability of the health providers in education and follow-up could be the reasons of increase in readmission and costs for these patients.[7] Recovery from heart failure and dealing with the effects of this serious condition are considerably influenced by self-care needs of heart failure patinets.[8] Self-care is an important aspect in the treatment of heart failure[9] and it is believed that most of the cost spent to treat heart failure and multiple admissions could dramatically be decreased by consistent involvement of the patient in their own care.[10]

The study of Stromberg[7] about knowledge of heart failure patients, barriers of learning, learning needs and training styles showed that although most of the heart failure patients receive training but they do not have a clear understanding of what self-care behavior should be performed for heart failure, and these patients require trainings to adopt to chronic illness and perform self-care behaviors. Nurses' knowledge about self-care behaviors of patients with heart failure can be a valuable source for the contents of the trainings provided for patients that would eventually improve self-care behaviors. It can also reduce the burden of heart failure symptoms and enhance the quality of life in the daily lives of people with this disease. Lack of knowledge and social and cultural differences of patients admitted to Shahid Madani Training Hospital in Tabriz, Iran which is the main center for the treatment of heart failure in northwest of Iran, makes the self-care training for heart failure necessary. Therefore, the present study was conducted to evaluate self-care behaviors in heart failure.

Materials and methods

In this descriptive study the amount, their subsection rankings and items of each of the self-care behaviors were studied. The study population consisted of patients with heart failure, ejection fraction less than 40 and aged over 18 years that were hospitalized for continuing treatments in the cardiology section of Shahid Madani Training Hospital in Tabriz, Iran. The sample size was calculated through preliminary studies on 20 heart failure patients. Considering $\alpha = 0.05$, mean value of 18.52 and standard deviation of 14.04, 63 people were estimated and were increased to 80. Due to limited number of patients in this center, all those who were admitted to the cardiology section from the beginning of the study were selected if they were eligible.

Personal and social information was gathered through a 20-minute interview and their medical profile was collected from their medical records. The information about the participant's self-care behavior was gathered through Self-Care of Heart Failure Index (SCHFI) that was updated by Riegel et al.[10] This tool contained 22 questions in three sections. The first section included 10 questions about self-care behaviors such as weight and everyday medication. The second section consisted of 6 questions related to self-care management like monitoring the signs of heart failure and applying methods to control these symptoms. And the third section contained 7 questions about confidence in performing self-care behaviors such as insuring the effectiveness of methods used to control the symptoms. Each part was scored according to 4-point Likert scale, 1 indicated poor self-care behavior and 4 showed well self-care behavior. Using the scores, each part was standardized by a scale of 0 to 100.

To insure the accuracy of the Farsi translation it was given to three faculty members including two master degrees in English language and one Master degree in nursing. The questionnaire was revised considering their suggestions. In the second part of the process, the content validity of the questionnaire was checked by 12 faculty members of Tabriz University of Medical Sciences (nine MSc's and two PhD's in nursing and one cardiovascular specialist). Through test-retest method the reliability was checked. Within two days, the questionnaire was again given to 10 heart failure patients and the correlation coefficient between two time points was determined 96%. These patients were excluded from the study.

After the approval from the Research Council, the researcher visited this center five days a week. She stated the goals of the study and gained the participants agreement, then proceeded to complete the questionnaires. SPSS software version 11 (SPSS, Inc., Chicago, IL, USA) was used to analyze the data. Descriptive statistics was used to describe the data as well as Friedman test to prioritize the subgroups of the self-care behaviors.

Results

Most of the participants were male and married. The mean (standard deviation) age of patients was 63.5 (11.2). Most of the participants lived in the city and were illiterate. The other personal and social information are provided in table 1. Table 2 shows that there was a significant relation between the components. The maintaining self-care behavior had a higher rank. The components of self-care behaviors from the lowest to the highest were self-care management, confidence in self-care and maintaining self-care, respectively.

Table 1. Patients' characteristics and their heart failure profile

Variable		N (%)
Sex	Male	43 (53.8)
	Female	37 (46.3)
Age, Mean (SD)		63.5 (11.2)
Education	Illiterate	46 (57.5)
	Primary	19 (23.8)
	High school	12 (15.1)
	University	3 (3.8)
Location	City	47 (58.8)
	Village	33 (41.3)
Marital status	Single	2 (2.5)
	Married	68 (85)
	Widowed, divorced	10 (12.6)
Occupation	Housewife	37 (46.3)
	Employee	4 (5)
	Private	19 (23.8)
	Unemployed, etc.	20 (25)
Functional class	III	39 (48.8)
	VI	41 (51.3)
Living style	With spouse and children	58 (72.5)
	Alone or with parents	18 (22.6)
Ejection fraction, Mean (SD)		24.8 (9.2)
Cause of illness	Ischemic	27 (33.8)
	Hypertension	30 (37.6)
	Dilated valve, Cardiomyopathy	18 (22.6)
Previous admission due to heart failure	Less than 2 times	12 (15.1)
	More than 2 times	64 (80.2)
Medication	Diuretic	10 (12.5)
	Beta-blockers and Diuretic	20 (25)
	Digoxin and Diuretic	50 (62.5)

Table 2. Friedman test results for prioritizing the components of self-care behaviors in the participants

Variable	Number	Mean (SD)	Mean rank
Maintaining self-care behaviors	80	20.2 (13.3)	2.49
Confidence in self-care behavior	80	13.6 (14.0)	1.79
Self-care behavior management	80	14.3 (14.5)	1.73
Total self-care behavior	80	16.0 (12.5)	

SD: Standard deviation; P-value: < 0.001

Table 3 indicates the rank of performing each of the self-care behaviors in the subscale of maintaining self-care by patients. The most maintaining self-care behavior performed by heart failure patients was "taking medication at the prescribed time" and the less performed behavior was "request for low salted foods in parties and restaurants" and "using a reminder about taking medication". Table 4 shows the rank of each of the self-care behavior in the subscale of self-care management. The self-care behavior of "being ensured about solving the problem by the chosen solution" had the lowest repetition among the patients and the second lowest performed self-care management behavior was "the speed of diagnosing heart failure symptoms". The highest behavior performed for self-care management was "reducing salt intake in diet".

Table 5 indicates the priority of each of the self-care behaviors in the subscale of confidence in self-care. The lowest confident behavior performed by patients in this regard was "ensuring better performance evaluation of selected solutions to solve the heart failure problem". The most confident behavior was "continuing the prescribed medications".

Table 3. Friedman test results for prioritizing the repetition of maintaining self-care behaviors by the heart failure patients

	Number	Mean (SD)	Mean rank
1. Taking medication in the prescribed time	80	2.81 (0.78)	9.11
2. Regular visits to the doctor or nurse	80	2.18 (0.96)	7.28
3. Physical activities	78	2.01 (0.72)	7.19
4. low-salt diet	80	1.54 (0.81)	5.35
5. Effort to prevent illness	80	1.46 (0.69)	4.96
6. everyday weighing	79	1.40 (0.56)	4.88
7. Checking ankle inflation	80	1.20 (0.43)	4.13
8. 30 minutes working out	80	1.31 (0.49)	4.56
9. Using a reminder for taking medication	79	1.13 (0.54)	3.78
10. Request for low-salt foods	80	1.10 (0.37)	3.77

SD: Standard deviation; P-value: < 0.001

Table 4. Freidman test results for prioritizing the repetition of self-care behavior management by heart failure patients

	Number	Mean (SD)	Mean rank
1. Reduce salt in diet	80	1.84 (0.79)	4.91
2. Reduce fluid intake	80	1.65 (0.73)	4.58
3. Speed in diagnosing heart failure symptoms	78	1.65 (0.73)	4.58
4. Contacting doctor or nurse	80	1.58 (0.84)	4.26
5. Taking an extra diuretic pill	80	1.13 (0.37)	3.54
6. Ensuring of problem solving	79	0.31 (0.20)	1.68

SD: Standard deviation; P-value: < 0.001

Table 5. Freidman test results for prioritizing the repetition of confidence in self-care behavior by heart failure patients

	Number	Mean (SD)	Mean rank
1. Continuing prescribed medications	80	1.91 (0.86)	4.61
2. Considering the illness symptoms	80	1.54 (0.61)	3.89
3. Detecting changes in health	80	1.38 (0.58)	3.48
4. Preventing heart failure symptoms	80	1.38 (0.53)	3.42
5. Doing something to relieve the symptoms	80	1.19 (0.50)	2.94
6. Evaluating solution performance	80	1.08 (0.30)	2.66

SD: Standard deviation; P-value: < 0.001

Discussion

Maintaining self-care behavior was the first priority. Self-care management and confidence in self-care were placed in the second and third priority, respectively. However, the mean score was very low. The findings of the present study were similar to Bowles et al.[11] According to Riegel et al.[12] maintaining self-care behavior in heart failure patients in Australia took priority, but it was the management in America and confidence in self-care in Mexico that took highest priority.

In patients from Thailand, all the three subsets of self-care behavior were low that

were in line with the present study. Jaarsma et al.[8] expressed the functional status as an indicator of maintaining self-care behavior and explained the reason for the priority of this subset in Australia to be the possibility of participation in the previous trainings. Two main reasons in self-care management were known as age and comorbidities that were different in participants in America. They had the youngest age group among all the other participants of the mentioned studies that might be the most likely reason for the desired level of self-care management.

According to Riegel et al.[12] confidence is the only scale that is indicative of social desirability. Some items existed in subset of self-care management that may force the patients to respond in a way that they think others want them to do. This social desirability was higher among the Mexican patients than the other participants. The reason for the low scores of all the subsets of self-care in Thai patients was lack of awareness and little knowledge about heart failure. In the past decade, heart failure illness was not known to be the most reason of death. Therefore, information on self-care behavior related to this illness was very little and no training was provided for patients. The mentioned reasons could be the cause of low mean score in all the three subsets of heart failure patients in Thailand.

Studying each individual self-care behavior aspects in the present study showed that performing self-care behavior in the participating patients was low, such that most of the answers to self-care was a written statement or had no answers at all. In a study by Shojafard et al.[13] on heart failure patients in training care center of Tehran University of Medical Sciences, Iran, only 26% performed desirable self-care behaviors. It can be due to lack of patient's information about the complex nature of the disease, self-care behaviors and aging. Most of the heart failure patients do not believe in the positive impact of self-care on relief of their symptoms. According to Riegel and Carlson[14] this influences the patient's self-care behavior and reduces their motivation towards this behavior.

Riegel et al.[4] also found that heart failure patients that do not have any limitations in their daily activities may have less motivation in engaging in self-care behaviors, and only when these patients face exacerbation they are forced to deal with their illness. In this case, retraining can be a great help in developing self-care behaviors.

In this study, desirable self-care behavior was observed in trivial cases such as taking medication in the prescribed time and regularly visiting the doctor. This result is the same as the study of Enc et al.[15] This might be due to the encouragement from the health care providers in order to get medication regularly from the doctor and make appointments for the patients. Guidelines such as controlling daily weight, following low salt diet and other guides that are given through non-pharmacological management recommendations can be helpful for patients with heart failure.[16]

Reducing salt intake in foods is another self-care behavior effective in heart failure due to edema and asthma reduction. In this study, patients rarely performed it. Lupon et al.[17] in their study could not develop this self-care behavior by training, and the reason for that was the difficulty in controlling the salt during cooking. This reason and lack of patient's information about how low salt intake can be effective in reducing their symptoms are reasons for patients not to follow low salt diet in the present study. Based on the findings of present study, patients with heart failure need training for self-care behaviors. These results can be as a guideline for nurses in educating these patients. By training self-care behaviors to heart failure patients, they can reduce their symptoms that results in reduction of readmission.

Limitations and suggestions

It was likely that the participants give incorrect answers to the questions. With gaining their trust and explaining about the

confidentiality of their answers, this was partly controlled. This study was conducted on a specific care center and the results cannot be generalized to other centers and patients. Only self-care behaviors were studied in this study. It is recommended for further studies to be conducted on other barriers and facilitating factors of each self-care behaviors. Nowadays, training is an essential part of treating chronic diseases such as heart failure. It is recommended that the medical team pay more attention to training, especially for self-care behaviors. It is also suggested to perform more qualitative studies on limitations and facilitating factors of training, and by removing the barriers as well as use of facilitating factors increase the training quality.

Ethical issues

None to be declared.

Conflict of interest

The authors declare no conflict of interest in this study.

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References

1. Evangelista LS, Shinnick MA. What do we know about adherence and self-care? J Cardiovasc Nurs 2008; 23(3): 250-7.
2. Lee CS, Riegel B, Driscoll A, Suwanno J, Moser DK, Lennie TA, et al. Gender differences in heart failure self-care: a multinational cross-sectional study. Int J Nurs Stud 2009; 46(11): 1485-95.
3. Thomas JR, Clark AM. Women with heart failure are at high psychosocial risk: a systematic review of how sex and gender influence heart failure self-care. Cardiol Res Pract 2011; 2011: 918973.
4. Riegel B, Lee CS, Dickson VV. Self care in patients with chronic heart failure. Nat Rev Cardiol 2011; 8(11): 644-54.
5. Krumholz HM, Parent EM, Tu N, Vaccarino V, Wang Y, Radford MJ, et al. Readmission after hospitalization for congestive heart failure among Medicare beneficiaries. Arch Intern Med 1997; 157(1): 99-104.
6. Riegel B, Moser DK, Anker SD, Appel LJ, Dunbar SB, Grady KL, et al. State of the science: promoting self-care in persons with heart failure: a scientific statement from the American Heart Association. Circulation 2009; 120(12): 1141-63.
7. Stromberg A. The crucial role of patient education in heart failure. Eur J Heart Fail 2005; 7(3): 363-9.
8. Jaarsma T, Halfens R, Senten M, Abu Saad HH, Dracup K. Developing a supportive-educative program for patients with advanced heart failure within Orem's general theory of nursing. Nurs Sci Q 1998; 11(2): 79-85.
9. Smeulders ES, van Haastregt JC, van Hoef EF, van Eijk JT, Kempen GI. Evaluation of a self-management programme for congestive heart failure patients: design of a randomised controlled trial. BMC Health Serv Res 2006; 6: 91.
10. Riegel B, Lee CS, Dickson VV, Carlson B. An update on the self-care of heart failure index. J Cardiovasc Nurs 2009; 24(6): 485-97.
11. Bowles KH, Riegel B, Weiner MG, Glick H, Naylor MD. The effect of telehomecare on heart failure self care. AMIA Annu Symp Proc 2010; 2010: 71-5.
12. Riegel B, Driscoll A, Suwanno J, Moser DK, Lennie TA, Chung ML, et al. Heart failure self-care in developed and developing countries. J Card Fail 2009; 15(6): 508-16.
13. Shojafard J, Nadrian H, Baghiani Moghadam MH, Mazlumi Mahmudabad SS, Sanati HR, Asgar Shahi M. Effects of an educational program on self-care behaviors and its perceived benefits and barriers in patients with Heart Failure in Tehran. Payavard Salamat 2007; 2(4): 43-55. (Persian).
14. Riegel B, Carlson B. Facilitators and barriers to heart failure self-care. Patient Educ Couns 2002; 46(4): 287-95.
15. Enc N, Yigit Z, Altiok MG. Effects of education on self-care behavior and quality of life in patients with chronic heart failure [Internet]. 2010 [Cited 2012]. Available from: www. thefreelibrary. com/Effects+of+education+on+self-care+ behavior +and+ quality+of+life+in...-a0228121572.
16. Gardetto NJ. Self-management in heart failure: where have we been and where should we go? J Multidiscip Healthc 2011; 4: 39-51.
17. Lupon J, Gonzalez B, Mas D, Urratia A, Arenas M, Domingo M, et al. Patients' self-care improvement with nurse education intervention in Spain assessed by the European Heart Failure Self-Care Behavior Scale. Eur J Cardiovasc Nurs 2008; 7(1): 16-2

