

Original Article

On the consideration of self-care behaviors in patients affected by congestive heart failure and factors related to itMaryam Seraji*¹ Fateme Rakhshani²

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Abstract

Background and objectives: The current study aimed at considering the performance, attitude and awareness level of patients affected by congestive heart failure who were hospitalized in Zahedan hospitals with regard to the self-care behaviors and factors related to it.

Method: This was a cross-sectional study conducted on 140 patients with congestive heart failure who were hospitalized in various hospitals during 2015. The required data was collected through interview and a designed questionnaire. In order to analyze the data, SPSS Software, version 15, was used through chi-square test, t-test, and ANOVA test.

Results: There was a direct correlation between patients' awareness level and attitude ($p < 0.001$ and $r = 0.459$), and behavior ($p < 0.001$ and $r = 0.345$). In addition, a direct correlation was observed between patients' attitude and their behavior ($p = 0.003$ and $r = 0.452$). However, there was a reverse correlation between patients' age and their awareness level ($p = 0.003$ and $r = -0.253$), and their attitude ($p < 0.03$ and $r = -0.181$). By performing an ANOVA test, it was revealed that there was a statistically significant relationship between educational level and awareness ($p = 0.001$), and patients' attitude ($p = 0.006$). The average number of hospitalization was 3.31%, the most important reasons for hospitalization was shortness of breath (dyspnea) (74%), and the most prevalent background diseases was hypertension (74.3%).

Conclusion: It is necessary to pay enough attention to patients' needs in this regard, and provide suitable educational programs which improve the patients' awareness level and positive attitude; finally, these programs can promote self-care behaviors in patients.

Keywords: Self-care behavior; Congestive heart failure; Zahedan

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1. Introduction

Cardiovascular diseases are the most relevant causes of mortality in the world, and they are known as the main reasons of disability (1). In the earlier years of 21st century, cardiovascular diseases were responsible for half of the deaths in developed countries and 25% of all deaths in developing countries. Up to year 2020, cardiovascular diseases will be the main reason of deaths in developing countries (response for one death out of three). These diseases are known as the first cause of death in Iran, and impose a heavy economic, social, and health burden on the society. According to the reported statistics of Health Ministry Vice-Chancellor, the rate of daily deaths due to cardiovascular diseases in Iran was 369 cases during the year 2003 (2). After being cured, most of these cardiovascular diseases will change to a disease known as congestive heart failure (3). Heart failure is one of the most prevalence factors for rehospitalization after 60 days of discharge (4), and it is the most expensive cause of hospitalization (2). In Iran, the cost of rehospitalization for a patient was 4000,000,000 Rials in 2003 (6). However, by following the treatment suggestions, 54% of the rehospitalization of the patients affected by CHF can be prevented (3). One of the best methods for preventing the incidence, progression, and the occurrence of disease complications is self-care education to patients (5). It should be noted that self-care behaviors are important aspects of treatment (2). As the self-care behaviors in this disease, it is possible to mention the following cases as some important examples: daily weighting or scaling, following a special food and medicine diet, regular physical activities, not smoking, contacting doctor in case of observing inflammation in feet, ankle, shin, or

stomach, measuring daily urination rate, and not drinking too much liquid (2).

The improvement of patients' awareness level through self-care education has decreased patients' returning to hospitals especially to cardiology and CCU sections (6). Meanwhile, making people aware of disease and the factors creating it is the base of educations, and the main purpose of such training is to provide information, change the attitudes and behaviors which control the disease, and promote the preventive behaviors in this regard (1). This study aimed at determining the relationship between self-care and the factors associated with self-care in patients with heart failure and background variables. The current research was also an attempt in promoting self-care planning, patient education, and encouraging them to make effort, feel committed, and be empowered so as to perform self-care activities.

2. Method

As a cross-sectional and descriptive-analytic research, the current study was conducted on 140 patients affected by heart failure who were hospitalized in cardiology and CCU sections of Khatam-al-Anbia and Ali-ebn-Abitaleb Hospitals in Zahedan. At the time of the current study, there were 140 patients who were affected by heart failure and hospitalized in cardiology and CCU sections of Khatam-al-Anbia and Ali-ebn-Abitaleb Hospitals. This study aimed at considering the patients' awareness rate, attitude, and performance. To this end, it made use of non-random availability sampling as the sampling method. That is, by referring daily to treatment centers, the hospitalized patients affected by CHF who had the entering criteria into the study were recognized, and the required data was collected through interview and

questionnaire during the last days of their hospitalization, when the patients felt better.

The inclusion criteria for the present study regarding the patients included heart failure diagnosis by a cardiologist and passing of four months after the diagnosis, having an echocardiography in patients' case, having an ejection fraction rate lower than 40%, being hospitalized in CCU and post CCU sections, and being physically ready to answer the questions. Moreover, the exclusion criteria for the study included patients having open heart surgery, and patients who were among the nursing personnel. Before patients fill out the questionnaire, the main purpose of the study was elaborated to them. It should also be noted that participation in this study was voluntary and based on patients' consent, and they were assured that all personal information would remain confidential.

The questionnaire had four sections including demographic questions (age, gender, marital status, job, and education), the number of hospitalizations, the reason for hospitalization, and the questions on awareness, attitude, and performance. In order to determine the clarity of questions, the questionnaire was given to 15 hospitalized patients with heart failure and they were asked to express any vagueness presented in the questions. Furthermore, in order to determine the questionnaire's face validity and content validity, it was given to 10 experts in health education and cardiovascular diseases. After the required rectifications, the questionnaire's content validity ratio (CVR) was 0.71, and its content validity index (CVI) was 0.81. Also, in order to determine the questionnaire's reliability, the internal consistency, and for its stability, test retest method was used; that is, the first test was carried out on 30 hospitalized patients in

CCU section, and they were finally exclude from the study.

After 15 days, the test was repeated and the questionnaire was filled in again by the same group. After that, by the use of Pearson correlation test and Wilcoxon test, the difference between first and second set of responses was determined. As a result, the questions with Cronbach alpha and correlation coefficient less than 0.7 were deleted. Finally, the mean scores of Cronbach alpha for questions on awareness, attitude, and behavior in the final questionnaire were calculated to be 0.81, 0.87, and 0.81, respectively, while the correlation coefficient regarding the same traits were 0.77, 0.87, and 0.86, respectively (P value <0.01).

It should be noted that the final questionnaire had four sections: a) 9 questions on patients' demography, b) 13 questions on awareness with the score range from 26 to 78 (correct response= 3, don't know= 2, and incorrect response=1), c) 12 questions on attitude with the score range from 12 to 60 which were scored and calculated based on 1 to 5 (completely agree, agree, no idea, disagree, completely disagree), d) 16 questions on performance with the score range from 16 to 80 which were scored and calculated based on 1 to 5 (always, often, sometimes, rarely, and never). Finally, in order to analyze the data, ANOVA test in addition to Pearson correlation coefficient were performed through SPSS Software, version 15.

3. Result

The average age of 140 patients participating in this study was 60.87 ± 12.17 years old, and the participants were in the age range of 28–90 years old. At the same time, 67.1% of the patients were illiterate, 20.7% had elementary and guidance school education and 12.1% of

them had high school diploma or university degree. After categorizing the patients based on body mass index (BMI), it was shown that 2.1% had low weight, 52.2% had normal weight, 33.6% were heavy, and 12.1% of them were obese (fat). Regarding the hospitalization experience rate, the mean was 3.31, and just 2.9% of the patients stated that they had never been hospitalized before. It was also found that 17.9% of them had one hospitalization experience, 24.3% had two hospitalization experiences, and 55% of them had been hospitalized more than twice. The main reasons for patients' hospitalization were shortness of breath (74%), inflammation on hands and legs (41.4%), cough and mucus (11.4%), fatigue (7.9%), and gaining weight (7.1%), respectively. Moreover, the main background diseases were hypertension (74.3%), heart attack experience (58.6%), and diabetes (47.1%). Totally, it can be mentioned that the awareness rate of all patients was good (62.38 ± 9.19), the patients' attitude was moderate (41.64 ± 6.65), and their performance was moderate, as well (55.53 ± 10.97). Moreover, there was a statistically reverse correlation between patients' age and awareness scores ($p = 0.003$ and $r = -0.253$), and their attitude ($p = 0.03$ and $r = -0.181$); that

is, by any increase in age factor, the rate of patients' awareness and attitude would decrease. However, there was no correlation between age and the obtained scores on performance questions. Furthermore, there was a statistically direct correlation between the awareness scores and attitude scores ($p < 0.001$ and $r = 0.459$) and the scores on behavior ($p < 0.001$ and $r = 0.345$); that is, with any increase in the patients' awareness rate, their attitude and behavior level was increasing, as well. Furthermore, a direct correlation was observed between the attitude scores and patients' scores on behavior ($p = 0.003$ and $r = 0.452$). In other words, with any increase in patients' attitude level, they would show better behaviors. After reviewing the data normality and homogeneity of variances, the results of ANOVA test revealed that there was not a statistically significant difference between patients' awareness scores and their educational level ($p = 0.987$). In addition, there was not a statistically significant difference between attitude scores and patients' educational level ($p = 0.654$). There also existed no statistically significant difference between behavior scores and patients' educational level ($p = 0.975$), as shown in Table 1.

Table 1. Patients' awareness, attitude, and performance based on educational level

variable	education	number	mean	Standard deviation	ρ value
Awareness (26-78)	Illiterate	94	62/35	9.04	F=0/013
	Elementary or guidance school education	29	62/58	10.31	P=0/987
	Diploma or higher degrees	17	62/13	8.39	
Attitude (12-60)	Illiterate	94	41/37	6.71	F=0/427
	Elementary or guidance school education	29	42/65	6.75	P=0/654
	Diploma or higher degrees	17	41/26	6.40	
Behavior (16-80)	Illiterate	94	55/40	11.23	F=0/026
	Elementary or guidance school education	29	55/93	11.95	P=0/975
	Diploma or higher degrees	17	55/60	10.11	

As shown in Table 2, by the use of χ^2 test, it was also revealed that there was not a statistically significant difference between

male and female patients' awareness, attitude and behavior scores.

Table 2. Awareness, attitude, and performance of self-care behaviors in patients affected by Heart failure hospitalized in CCU and cardiology sections of Zahedan hospitals

Variable	Sex	Male	Female	Total	Result χ^2 -test
		Number (percent)	Number (percent)	Number (percent)	
Awareness (26-78)	Weak (lower than 43)	15(16.7)	7(14)	22(15.7)	$X^2=9.69$ df=2 P=0.40
	Moderate (between 34 to 52)	69(76.7)	42(84)	111(79.3)	
	Good (more than 53)	6(6.7)	1(2)	7(5)	
	total	90(100)	50(100)	140(100)	
Attitude (12-60)	Weak (lower than 28)	30(33.3)	15(30)	45(32.1)	$X^2=6.21$ df=2 P=0.26
	Moderate (between 28 to 44)	56(62.2)	35(70)	91(65)	
	Good (more than 44)	4(4.4)	0(0)	4(2.9)	
	total	90(100)	50(100)	140(100)	
Behavior (16-80)	Weak (lower than 37)	0(0)	1(2)	1(0.7)	$X^2=5.30$ df=2 P=0.16
	Moderate (between 37 to 58)	60(66.7)	38(76)	98(70)	
	Good (more than 58)	30(33.3)	11(22)	41(29.3)	
	total	90(100)	50(100)	140(100)	

4. Discussion

In the current study, there was a reverse statistical correlation between patients' age and their awareness level and their attitude. No statistical correlation was also observed between patients' age and their performance, which have also been explored and verified in other studies (7). In the current study, a statistical direct correlation was documented between patients' awareness and their attitude and behavior, the results of which have been observed in other studies (8, 9). Moreover, the results of this study were found to be consistent with the findings of certain other studies (7, 10) regarding direct correlation between patients' attitude and their behavior. Therefore, it can be concluded that individuals' awareness can indirectly change their behavior. However, with regard to other behaviors such as daily weighing or scaling, measuring daily urination, the relationship between smoking and the disease, and referring to or calling the doctor regularly, the

patients were not aware enough. So that more than half of the patients answered these questions negativity. In a study conducted by Sajedi in Hamedan, it was reported that patients were not highly aware of their medicine and food diet (11), which showed a result not in line with the findings of the current study. However, in the study of Sajedi, it was found that more than 90% of the patients reported that they were taking their medicines as prescribed, and 70% of them mentioned that they were following a low-salt diet. In this regard, the results correspond with the findings of the current study (12). In the present study, the main reason for patients' high awareness of their medicine and food diet were related to rehospitalization and educating the patients regularly in these scopes rather than other self-care areas; moreover, mass media such as radio, television, etc. have familiarized the patients with the issues, so patients are becoming aware of the conditions in this

regard. Also, the low awareness of patients with regard to daily weighing, and measuring daily urination, as reported in this study, matched the results of another study (13). Patients' attitudes about self-care behaviors, on the other hand, were from weak to moderate. It meant that majority of the patients considered daily weighing and measuring daily urination as activities difficult to do. This result was consistent with a study in which patients reported lack of motivation, forgetfulness, and lack of awareness as reasons for not scaling themselves daily (13). Also, the patients in the present study provided the reasons such as lack of awareness and unavailability of a scale for their inability to control their weight. In the present study, majority of the patients stated that they did not have enough information about self-care behaviors, and they had not received any education from treatment system regarding self-care behaviors, such as daily weighing rules and measuring daily urination volume, and as a result of these conditions, they had regularly been hospitalized. Therefore, providing information and awareness for these people, who are unaware of self-care behaviors, can promote self-care behaviors in these groups.

A limitation of the present research was that the patient population was relatively small, and the data collection was only carried out through interviews. Self-report method is not always a reliable way to assess self-care behaviors (14); however, the interviews in this study were not carried out by treatment group members, which could then induce a safe relationship, and lead to correct and reliable answers. For further research, it is suggested that the coherence of each behavior to be assessed with these variables to arrive at a more specific and applicable data in the

future. On the basis of these results, it is extremely necessary for treatment groups to instruct and emphasize heart failure patients regarding self-care behaviors. It is also strongly recommend that more research to be conducted on knowledge, attitude, and performance of healthcare providers, as well as on the self-care behaviors of heart failure patients and their existing problems.

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Conflict of Interest

The authors declare that they have no competing interests.

References

1. Azizi F, Janghorbani M, Hatami H. Epidemiology and controlling the prevalent diseases in Iran, second edition, khosravi Publication, with the cooperation of the college of endocrine glands and metabolism sciences in Shahid Beheshti University of medical sciences. 2011; 2(4): 11- 36.
2. Shoja fard J, Naderian H, Baghiani Moghadam MH, Mazlumi Mahmudabad S, Sanati H, Askarshahi M. Considering the effects of education on self-care behaviors, advantages and obstacles in doing it for patients affected by heart failure in Tehran. The Journal of paramedical sciences. 2008; 2 (4): 43-55. <http://dx.doi.org/10.1371>
3. Ahrari S, Heidari A, Vaghei S. The role of compatibility pattern on the food diet of patients with heart failure. Ofogh-e- danesh Journal. 2011; 17 (4): 18-24. [In Persian]

4. Hekmatpour D, Mohammadi E, Ahmadi F, Arefi SH. Obstacles on controlling rehospitalization of patients affected by congestive heart failure; a qualitative study. *Arak Medical University Journal*.2008; 45 (11): 49-58.
5. Daryabeigi R, Jalili Z. on the effect of self-care education on the awareness and knowledge of patients affected by congestive heart failure: patients hospitalized in Isfahan hospitals. *Journal of Research in Medical Sciences*. 2009; 7(1): 23- 25.
6. Sajedi J, Masumghonuti F, Ghafari N. The effect of education on the awareness rate of heart failure patients regarding their self-care behaviors. *Scientific Journal of Hamedan Nursing & Midwifery Faculty*. 2005; 23 (12): 52- 57. PMID: PMC4134146
7. Shojaei F , Ebrahimi SM, Assemi S. Self-care behavior and affecting factors among patients with heart failure in Iran .*Saudi Med J* .2011; 32 (10):34-54. PMID: 22008923
8. Akyol AD, Cetinkaya Y, Bakan G, Yarah S,Akkus S. Self- care agency and factors related to this agency among patients with hypertension. *Journal of clinical nursing (JCN)*. 2007; 16(4): 679-687. DOI: 10.1111/j.1365-2702.2006.01656.x
9. Rockwell J M, Riegel B, Michigan L , California S D. Predictors of self-care in persons with heart failure. *Heart Lung*. 2001;30(1):18-25. DOI: <http://dx.doi.org/10.1067/mhl.2001.112503>
- 10.Hajikazemi E, Falahat K, Assemi S, Hosseini F. Home visit on readmission among patients with heart failure. *Iran Journal of Nursing*. 2001; 14(2): 51-58.
- 11.Seraji m, Tabatabaie p, Rakhshani F, Shahrakipor M. The Effect of Educating Self-Care Behaviors to Patients With Heart Failure in Hospitals of Zahedan. *The Journal of Health Scope zahedan University of medical sciences*, 2013; 2(1):104-9. DOI: 10.17795/jhealthscope-11414
- 12.Eftekhari H, Mohammad K, Alsadat Tavafian S. The viewpoints of people living in South of Tehran on self-care behaviors, a population-based cross-sectional study. *Iranian Journal of Epidemiology (IJE)*. 2009; 1(5): 33-39. [In Persian]
- 13.Jaarsma T, Halfens R, Abusaad HH, Dracup K, Gorgelst, VJ, et al. Effects of education & support on selfcare & resource utilization in patient with heart failure. *Eur Heart J* 1999; 20: 673-682 DOI:10.1053/euhj.1998.1341
- 14.Liu MH, Hu ST, Kuo LT, Wang CH, Tung TH. Self-care ability among patients with HF. *J Evid Based Nurs* .2008; 4: 277-288.