International Journal of Advanced Biotechnology and Research (IJBR)
ISSN 0976-2612, Online ISSN 2278–599X,
Vol-8, Issue-2, 2017, pp952-958
http://www.bipublication.com

Research Article

Discharge to Home –Based Program and Promoting Self-Care Behavior with Heart Failure Patient

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ABSTRACT

Introduction: Congestive heart failure is a chronic medical condition that despite existing treatment affects different aspects of life. Therefore, the present study the impact of discharge to home on promoting self-care program in patients with heart failure was performed.

Methods: This randomized clinical trial on 32 patients hospitalized with heart failure centers of two randomly selected Hospital and then randomly divided into two groups (n = 16) and control (n = 16) were divided And after the educational intervention demographic questionnaire, a tool to identify areas of heart failure and self-care behavior in patients with heart failure (EHFSCBS 9) was used to collect information. In order to perform statistical Kolmogorov-Smirnov test, independent t-test and t-test was used SPSS 18 software.

Results: The intervention in the experimental group had a significant effect on self-care and self-care behaviors improved ($p<0/005$) in the control group, whereas there was no significant difference ($p> 0/05$).

Conclusion: self-care behaviors and knowledge of patients is moderate. Because of the importance and impact of chronic diseases on social health, important for nurses finds that intervention efforts in promoting self-care behaviors and raising awareness for disease control, prevention of complications of the disease.

Keywords: Heart failure, self-care, education

INTRODUCTION:

Chronic heart failure is now one of the most common diseases in elderly people and is the leading cause of hospitalization in hospitals (1). About 15 million people worldwide and more than 9.4 million people in the United States are diagnosed with heart failure (2); the figures in Iran is about one million people (3). These patients experience various physical and psychological symptoms such as shortness of breath, lack of energy, weakness, fatigue, edema, sleep disorders, depression and chest pain (4, 5); the sum of these symptoms lead to restrictions in daily activities, personal and social affairs and thus reduction of quality of life (6,7). Many of the reasons leading to lack of adherence to treatment and heart failure exacerbation can be prevented with the use of nursing educational interventions (8). Self-care is defined as one of the important aspects of treatment and a strategy to cope with life events and tensions in these patients, which will increase the aging and independence processes. It includes special activities by which the disease symptoms are alleviated, and the health

of patients can be maintained and improved (9). It puts emphasis on issues such as food and pharmaceutical diet, sodium and fluid restriction, daily weighing, regular exercise, monitoring signs and symptoms of disease exacerbation, and exploring and making decision for suitable treatment measures (4, 9); thus, it prevents complications due to lack of awareness about symptoms, relapse, clinical course and progression of the disease, drugs and medicinal and nutritional correct diet (6).

One of the methods of training self-care behavior in patients with chronic heart failure is the use of "recursive training". This method is more than a simple informational interaction. The purpose of this educational strategy in adults, is the ability to restate the information received without the presence of family or other relatives. In this method, an opportunity is given to the trainee to analyze and consider the patient's understanding and error when talking to the patient (10). In recent years, the focus of treatment has been on the treatment acceptance and self-care (11). Considering the few studies conducted on the patient training by "recursive training" strategy among heart failure patients with low to moderate levels of literacy, the researchers determined to conduct a study in order to determine the impact of compiled program of discharge to home on the self-care behaviors in patients with heart failure. Reflecting its results, it is hoped to take an effective step towards improving the health of patients and thereby reducing their frequent visits to health centers.

METHOD

This randomized clinical trial study was carried out among patients with heart failure who referred to selected educational centers of Ahvaz Jondi Shapour University of Medical Sciences in 2015. Formula of comparing two means was used to determine the sample size where α = 0.01 and β = 0.1, and according to previous studies, $\mu 2$=0.57 and μ 2=0.5, and the standard deviations of the two group are considered to be 6.99 and 14.99, respectively; and the initial sample size was calculated equal to 26. Due to the risk of loss, the final sample volume was considered 32 which were selected in a random allocation way, and were randomly divided into two groups of intervention (n = 16) and control (n = 16).

Inclusion criteria included: diagnosis of heart failure grade 2 or 3 by a specialist physician according to the New York Heart Association criteria, age of 40 years and above, patients hospitalized in CCU and under treatment according to the specialist physician, ejection fraction less than 60% based on echocardiography results, patients who are fully aware and independent in daily activities, lack of mental disorders based on the clinical diagnosis, having experience of at least one hospitalization in the CCU, patients under secondary education, enjoying the possibility of presence of the patient's companion to participate in the training program. Exclusion criteria included: length of hospital stay less than 24 hours, acute conditions (in accordance with the specialist physician criteria), lack of the patient's response to telephone calls and his lack of cooperation, presence of heart failure in the red zone. This study consisted of seven parts (Figure 1): First of all, the purpose of the study, the interactions between the research team and the patient, and discretion to withdraw the continuation of cooperation, were explained to the participating patients and their families. The self-care behaviors of patients were examined using EHFSCBs-9 [1] during an interview by the trained nurse.

Then, according to experts in medical education and using resources and books available, application of "recursive training" technique and the method interview were delivered to CCU nurses by the researcher team in order to complete the instruments; and during several sessions before the start of the study, homogeneity and reliability of the information provided by them to the patients, were reviewed. Nurses cooperated to use a standardized form, and completed all information required by patients who needed training information in the "sample" informational form. They studied

[1] European Heart Failure Self-Care Behavior

patients using the “identification of heart failure zone” tool; and proportional to the zone of disease (red, yellow, green), they provided patients and their relatives with home discharge training program content based on the latest Europe and America Heart Association guidelines, papers, books and consultations with experts in the form of manuals, in order to make patient and his family with all of the requirements to follow-up after discharge.

In intervention group training, special training for the patients with heart failure included information related to the level of activities, fluid intake and salt consumption limit ratio, the importance of drug compliance, the ratio of daily weight, smoking (priority), symptoms and signs of precautions that should be notified to the health care provider team. The trainings were provided to the family members and other potential providers or friends accompanying patients. In this training technique, a topic was discussion every day, since the training level and patients' perception were different; the number of training sessions was different for each person according to the level of patient understanding and the level of each patient’s need to training.

For example, one day of training was considered. The duration of training was in the range of 15-120 minutes while the average training intervention was 34 minutes, and training continued to fully understand the contents of several other face to face sessions. After the implementation of educational program, before discharge, self-care behavior questionnaire was again completed by the nurse for the patient by interview method.

To track the learning level of each patient, the "telephone follow" technique was used 7 days after discharge from the hospital to home, during which the level of patients’ need was analyzed using telephone consultation, so that the number and duration of training sessions needed by the patient could be reprogrammed. In this method, the stability of previously trained information to the patient was re-examined, and if patients had wrong answers to questions, the contents were trained over the phone during sessions to be fully understood. In addition, the compiled training program presented by the researcher was also considered for the control group participants. In order to determine the effectiveness of the intervention, one month after training in the intervention group and one month after the preliminary test in the control group, the level of each patient’s self-care behaviors was reassessed using EHFSCBs-9 in heart failure patients through telephone follow. The tools used in this study are:

1) Inventory of personal and background data including information on age, gender, marital status, employment status, economic status, frequency of hospitalization after diagnosis, heart failure degree, heart failure reason, ejection fraction rate based on the last echocardiography, training about the disease and presence of care provider for home care,

2) The tools for heart failure zone identification include 22 questions that identify the patient's condition in green, yellow and red states.

3) Revised European Inventory of "self-care behaviors in heart failure patients" designed by Jarasma et al. (2009) including nine questions; answering answer each question is to determine the appropriate behavior based on 5-point Likert scale from "strongly agree" (score 1) to "strongly disagree" (score 5). In general, the score obtained ranged from 5 to 45; lower scores mean better self-care. The score obtained 28 up, shows poor self-care and the score lower than 27 indicate strong self-care (13).

The questionnaire reliability was estimated 0.91 using Cronbach's alpha. At the end, descriptive statistics, Kolmogorov-Smirnov test, independent t and dependent t were used in SPSS version 16 software to analyze the data. It should be noted that all ethical considerations such as obtaining a code of ethics (IR.AJUMS.REC.1394.60), obtaining informed consent from participants, confidentiality, the possibility of withdrawing patient’s participation if they like are considered in general; in addition, the research has been registered by IRCT2016082129448N1 code in Iranian Registry of Clinical Trials.

Figure 1. Method summary

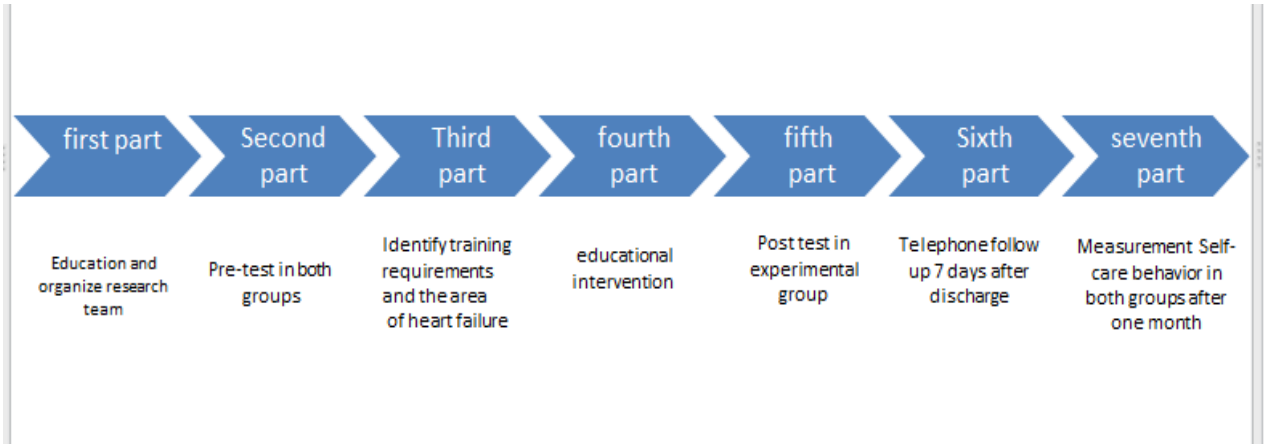
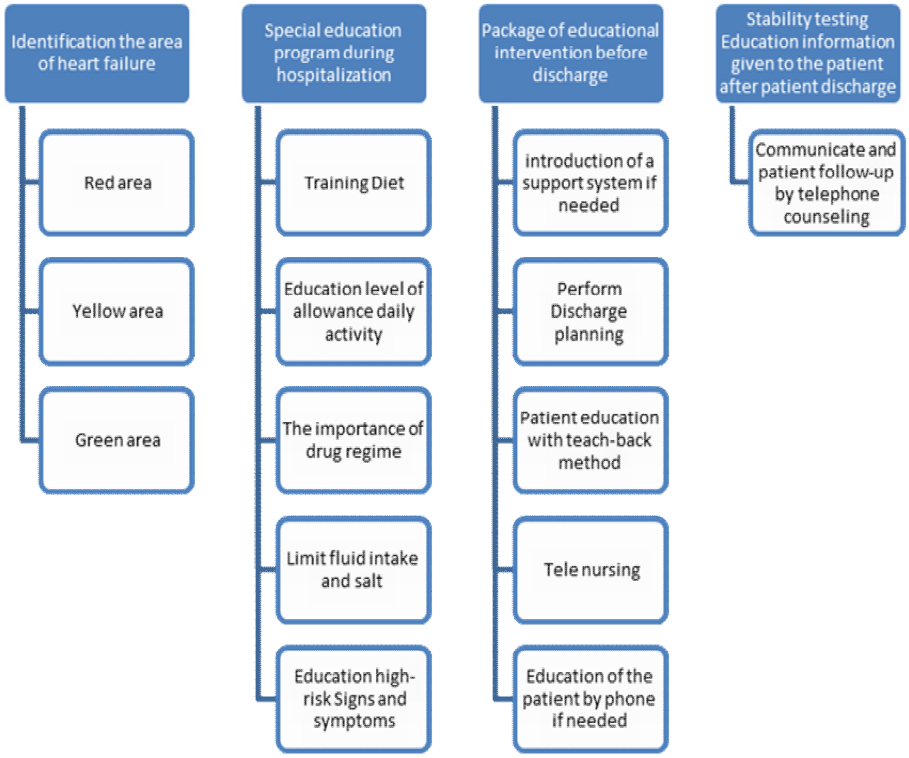


Figure 2. Designed areas of caring behavior training program



RESULTS

According to Table 1, most respondents were elderly people with primary education.

Table 1: Demographic information of participants

Demographic variables	Sub-group	experimental group	control group	Test type	P value
age (Mean±Standard deviation)	Male & female	10/8±56/06	10/93±61/81	Chi-square	0/105
Education level Frequency (percent)	illiterate	1(3%)	2(6%)		0/149
	Elementary	10(31%)	11(34%)		
	High School	5(16%)	3 (10%)		

As can be seen in Table 2, the intervention had a significant effect on self-care behaviors in the experimental group; it has improved self-care behaviors, and there is no significant difference before and after the intervention in the control group, while there is no significant difference between the experimental and control groups before discharge to home in the self-care programs. But after the intervention, there is no significant difference between control and experimental groups only in the fourth question (related to weight gain), and in the rest of cases, the compiled program of discharge to home has a significant effect on the level of self-care.

Table 2. Mean self-care behaviors before and after intervention in experimental and control groups

items	experimental group			control group			
	Mean before	Mean after	P value	Mean before	Mean after	P value	Test type
1.I weigh myself every day	2.31±0.94	3.81±0.75	0.001>	2.69±0.87	2.94±0.45	0.261	Paired T
2.If SOB increases I contact my doctor or nurse	2.38±0.94	3.75±0.75	0.001	2.75±0.68	2.62±0.62	0.544	
3.If legs/feet are more swollen, I contact my doctor or nurse	2.56±0.63	3.93±0.77	0.001>	2.69±0.70	3±0.52	0.206	
4. If I gain weight more than 2 kg in 7 days I contact my doctor or nurse	1.94±0.57	2.5±0.63	0.007	2.31±0.47	2.25±0.58	0.774	
5. I limit the amount of fluids	2.93±0.77	4.25±0.86	0.007	2.75±0.68	2.81±0.65	0.751	
6. If I experience fatigue I contact my doctor or nurse	2.87±0.5	3.75±0.93	0.003	2.68±0.6	3.1±0.71	0.096	
7. I take my medication as prescribed	4.06±0.85	4.75±0.45	0.013	3.93±1.12	4.12±0.81	0.270	
8. I injected flu vaccine each year	2.19±1.05	3.56±0.89	0.001>	2.43±0.72	2.5±0.63	0.718	
9. I exercise regularly	3±0.89	4±0.97	0.002	3.06±0.99	3.25±1.06	0.383	
Mean level of self-care	2.69±0.32	3.81±0.35	0.001>	2.81±0.22	2.95±0.26	0.20	

SOB, shortness of breath

DISCUSSION

Health training is one of the nursing roles conducted in different environments such as hospitals and the home. Due to underlying disease and aging, patients with heart failure may face defects such as cerebral ischemia, infarction and hypoxia, which can harm their focus and ability to process information and influence their decisions on self-care behaviors. Hence, recursive training can slow this process and help improving self-care training in patients with heart failure (14). Also, due to the simplicity and ease of transferring data in this method, it can be more effective in people with low literacy compared to others. The main objective of this study is to provide care services to patients with heart failure, improve quality of life and health status by enabling them to perform self-care behaviors and maintain and improve health. The study findings suggest that there is no significant difference between intervention and control groups in terms of mean self-care behaviors before self-care training, while it shows significant difference in favor of the intervention group after training self-care ($p < 0.001$), indicating high mean self-care behaviors in the intervention group compared to the control group which is consistent with the studies of Dalir et al. (15) and Meyer et al. (2003) (16). Since the units of study in both groups were matched in terms of background factors, it can be concluded that the obtained result is due to the implementation of educational programs. An overview of the results of the present study and other studies indicates that regardless of the training method used, providing information about the disease, treatment and self-care always increase the awareness of patients, however, in the meantime, variables such as gender, age, socioeconomic status and type of diagnosis can affect the results of training.

According to Table 2, the level of behaviors such as regular exercise, fluid intake limit and consumption of drugs under medical supervision are observed more than 80% which is consistent with the study of Rezaie Lobe et al. (1). In addition, the study of Khoshtarash (2013) and Aboutalebi (2011) were consistent with the results of the present study which showed that following physician medication prescription has been one of the best self-care behaviors in patients with heart failure (17, 18). But, the findings of Newenhiews (2012) demonstrated that although 100% of patients reported taking prescribed medications, direct monitoring of

patients showed that only 76% of them are really full compliance with their medication regimen (19). The findings of Mozarly (2010) showed that more than 25% of the patients with heart failure do not follow the medical treatment (20). About the compliance with low-salt diet, findings of Fardiani (2012) were not consistent with the results of this study which showed that only 33% of patients followed low-sodium diet (21). It seems likely that this finding was due to relying on the patients talk about compliance with medical prescriptions and diet which is associated with errors of remembering problem compared to objective methods of self-care behaviors.

In this study, the lowest self-care behaviors were related to daily weight control and exercise which were consistent with the findings of Khoshtarash (18). Although, the daily weighing is of the self-care programs recommended in patients with heart failure, this behavior less done even in patients with severe symptoms. One reason for the negligence of daily weighing is patients' misconception about necessity of weight control only in obese people, and lack of awareness about its use in the study of body fluids. Another reason is the lack of information about the relationship between weight gain and other symptoms and signs such as shortness of breath and edema. For example, more than 3 kg sudden weight gain causes chest pain and other important symptoms in people (5). Jarsma study results also showed that the inability to read weight due to vision problems, inability to interpret the results, lack of appropriate instruments for weighing, lack of belief in the usefulness of weighing and inability to stand on the weight are other obstacles of performing daily weighing (22). This finding emphasizes the necessity of relying on the daily weighing to identify body fluids and control annoying symptoms in self-care training programs. Some limitations of this study include inability to generalize the findings to all patients with heart failure.

CONCLUSION

Due to the effect of self-care training, and training by recursive training method compared to ordinary training methods, to promote self-care behaviors in patients with heart failure, it is recommended to be used as one of the effective and non-pharmacological methods, in planning care program and training these patients to improve the quality of their life. Preparing more facilities, nursing managers can use experienced and trained individuals in the CCU to prepare pamphlets and educational films. This training can continue to home and get closer to community-based nursing system. It is recommended to conduct other studies in different age groups or individuals based on gender and inpatient treatment centers (private and public), and also, the consequences of the implementation of the training program for the patient including satisfaction and readmission of these patients and other diseases, to obtain more comprehensive information about this matter.

Thanks to:

This article is result of conclusions from a proposal confirmed by Ahvaz Jondishapoor University of medical sciences with number B-9409

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