Research Journal of Medical Sciences 13 (3): 60-65, 2019
ISSN: 1815-9346

Self-Care Behavior of Heart Failure Patients Who Received or Followed Treatment in Clinic using Case Management

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Abstract: This study aims to study the self-care behavior of heart failure patients who received or followed treatment in clinic using case management model. Collect data of patients by nurses who are case studies. It is a collection of data from 30 patients in a heart failure clinic, Sirikit Heart Center, Faculty of Medicine Khonkaen University. The research tool is a questionnaire about personal information and patient self-care behaviors. Data were analyzed using descriptive statistics, frequency, percentage, mean and standard deviation. The results of the study showed that most of the sample groups after receiving treatment had regular self-care behaviors. It received an average score of 3.31 from a full score of 4 more than before receiving treatment with an average score of 3.12 with a statistically significant level of 0.05% self-care behaviors regularly consist of precautions and practices. The precautionary measures are that they do not take pot pills, herbal medicines and bolus as much as 93.33%, etc. As for the practice, they will read the drug label before eating every time. And they regularly take medicine according to the doctor's orders with as many as 93.33%. The results of this study can be developed for those with heart failure who can continue to receive treatment and follow-up treatment using case management in other areas.

Key words: Self-care behavior, case management, heart failure, precautions and practices, Sirikit Heart Center, erbal medicines

INTRODUCTION

Heart failure is a heart condition disorder. It causes the heart to not be able to pump blood to feed various parts of the body enough to meet the needs of the body or able to pump enough water only when increasing the volume and blood pressure of the lower heart chamber during the release (Arunsang, 2010). The compression of the heart failure, whether caused by any cause will cause the tissue perfusion to decrease as well. And there is also blood congestion in the blood vessels of the lungs and body. The heart failure caused by abnormal heart function increases, causing abnormal high blood pressure. The ventricle must be squeezed up to overcome the resistance at the blood vessels. Common causes of compression of heart failure include high blood pressure, high blood pressure in the lungs, abnormally large amount of blood and leaky heart valve or inefficient operation (Smeltzer *et al*., 2010). In addition, it was also caused by the cause of myocardial infarction, ventricular aneurysm Ischemic heart muscle and arrhythmia (Lip *et al*., 2000). Severe anemia was one reason that the ability of blood to transport oxygen to cells and tissues. The heart has to work harder to compensate for the amount of blood pumped from the heart to various tissues. It affects subsequent heart failure. Symptoms of congestive heart failure include insufficient breathing or shortness of breath, fatigue when lying flat, abdominal pain and nausea, loss of appetite, irritation or spasms of bronchospasm. Sometimes, it may look like dry cough, cough, sputum or coughing up blood (Arunsang, 2010).

The effect of treating heart failure was a chronic condition that cannot be cured. Patients of this disease must be treated for life (Pattenden *et al*., 2007). It affects the body, mind, family, society and economy. The body, for example, must tolerate less exercise activity (Blinderman *et al*., 2008). Lack of sleep was due to the disturbance of breathing, fatigue and fatigue and

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decreased energy in the body. Psychological effects cause anxiety and depression (Thomas *et al*., 2008). Social and economic impacts were the burden of the family in terms of care and treatment costs (Molloy *et al*., 2005). They were unable to do normal social activities, causing them to be separated from society (Giddings *et al*., 2007). In additional, they were still unable to work or had to change their careers, resulting in lower income. These events inevitably affect the economy of the society, community and nation in accepting expenses (Stott, 2007).

At present, the form of treatment for heart failure has developed according to more advanced technology. Its goal is to treat and control disease that is a risk factor or cause of abnormal functioning of the heart that can lead to heart failure. It helps to prevent and slow the deterioration of the heart's function when it is found to have abnormalities or complications. Resulting in better quality of life or helping to reduce death rates. Guidelines for the treatment of acute and chronic acute heart failure that are treated by medication are primarily intended to relieve symptoms and reduce the occurrence of heart shape changes (De Caterina *et al*., 2008). In addition, there are also non-drug treatment groups which are appropriate and proper self-care management, resulting in self-care behaviors. This group of patients should have knowledge, skills and self-care behaviors that can follow the treatment plan. They need to understand these diseases and behaviors including tracking body weight, food and nutrition control, prevention of malnutrition, control of risk factors that cause recurrent disease exercise, sex, travel, prevention of sleep disorders and emotional control. However, the patient's self-care behavior is important for successful heart failure treatment. This activities cause symptoms of the disease to abate or be controlled. They also increase the ability of the body to be happy, reduce relapse and reduce the rate of hospitalization (Lupon *et al*., 2008).

However, the case management concept of cases was considered a patient-centered care system, based on cooperation in health (Cohen, 2005). It was an aggressive patient care approach. This approach starts from finding cases in cases, problem assessment, care planning and creating cooperation in patient care (Ross *et al*., 2011). It was the management of the highest quality and efficiency. The above concepts should be appropriate for the study of behavior and guidelines for encouraging patients with heart failure and their families to plan health care management at the hospital and at home. So that, they can continue to take care of themselves and can reduce the risk of loss that will follow.

Objective: To study self-care behaviors, patients with heart failure who underwent treatment and follow up in heart failure clinics using case management model. This detailed study led to the finding of self-care guidelines for patients with heart failure admitted to treatment. The detail consists of 4 aspects: first, limiting sodium in food and controlling the amount of drinking water. The second, taking the drug in accordance with the doctor's treatment plan. The next, using other medicines, herbs, bolus or supplementary products. Finally, surveillance and management of signs and symptoms had caused by sodium and excess water.

MATERIALS AND METHODS

Scope of work: Scope of work was a descriptive research to study self-care behaviors of heart failure patients, both before and after treatment. Describe self-care behaviors of heart failure patients who undergo treatment and follow up in heart failure clinics using case management model. Study with patients admitted to the heart failure clinic, Sirikit Heart Center, Faculty of Medicine Khonkaen University. The duration of data collection from the sample group, both before and after treatment, takes about a year. It started working from April 2017 to March 2018.

Data collection: Data collection from patients aged 15 years and over. They were heart failure from cardiovascular disease. In addition, those who were diagnosed by a doctor with heart failure. There were 30 sample groups and the selection criteria for study are as follows. First, they had qualities such as good consciousness, good consciousness, able to communicate, good understanding of language, voluntary and willing to join the project. The second, they were diagnosed by a medical expert with heart failure. Third, the results of their high frequency resonance examination showed that the compression of the Left Ventricular Ejection Fraction [LVEF] = 40%. Finally, they are patients who should take care of the project according to the opinion of the doctor because they are at risk of being re-admitted to the hospital.

Tools and measurements: The tool is a questionnaire used to collect data on self-care behaviors of heart failure patients. The questionnaire consists of 2 parts: first, general information of respondents. Next, data on self-care behavior assessment of heart failure patients (Theptong, 2012) used to measure patient behavior. It was a measure of behavior that leads to guidelines for preventing and correcting complications including delaying illness of heart failure. Details include 4 aspects: first order of sodium restriction in food and control the

amount of drinking water. The second order of medicine is consistent with the doctor's treatment plan. Third, refrain from taking other medications such as herbal medicine, bolus or supplementary products. Lastly, the monitoring and management of the symptoms caused by sodium and water have exceeded the requirement. Behavior measurement has 5 criteria for scoring from highest to lowest in the following order:

- The average score of 4 points means doing that activity every time
- The average score of 3 points means doing that activity frequently or 3-5 days a week
- The average score of 2 points means sometime doing that activity or 1 and 2 days a week
- The average score of 1 score means rarely doing that activityor doing about 1 and 2 days per month
- The average score of 0 points means never doing that activity

In addition, the level of self-care has been considered for patients with the criteria for dividing the score from the mean to 3 levels:

- Score 0.00-1.50 points means having a low level of self-care
- Score 1.51-2.50 points means having a moderate level of self-care
- Score 2.51-4.00 points means having a high level of self-care

Data analysis: Analyze the data of the sample group as a frequency distribution, percentage, mean and standard deviation. It was the operation of the respondents in both personal information and behavioral data for self-care before and after receiving treatment in a clinic. It was an analysis of descriptive statistics using statistical software for data processing.

RESULTS AND DISCUSSION

The results of the overall study of self-care behaviors of patients consisted of 2 parts: general personal and self-care behaviors. There are details below.

Part 1 general information of heart failure patients: The population of patients in this study was 30 samples. The results showed that the majority of patients were male, more than female with 80.00 and 20.00%, respectively. They were mostly older than 50 years, representing 80.00%. They used special welfare (gold cards) to receive treatment, up to 73.33%. The results of the study were 56.67% that the husband or wife was the caretaker during treatment. They had a marital status of 73.33%. Most of their education level was at the primary level of 66.67%. They had the most occupation of farmers, 53.34%. The cause of their heart failure is caused by coronary heart disease (63.33%) than other vascular diseases (36.67%). The detail followed to Table 1.

Table 1: Percentage of personal data of patients (N = 30)

General information	Pop	Percentage
Sex		
Male	24	80.00
Female	6	20.00
Age		
Not over 50 years	6	20.00
More than 50 years	24	80.00
Treatment rights		
Special welfare (gold cards)	22	73.33
Government welfare	8	26.67
Caregiver		
Husband or wife	17	56.67
Children/grandchildren or relatives	12	40.00
None	1	3.33
Marital status		
Married	22	73.33
Single	5	16.67
Widowed/divorced	3	10.00
Education level		
Primary school	20	66.67
Secondary up	7	23.33
Bachelor's degree or higher	3	10.00
Occupation		
Farmer	16	53.34
Business/government employees	7	23.33
Housewife/not a career	7	23.33
Causes of heart failure		
Coronary artery disease	19	63.33
Other cardiovascular diseases	11	36.67

Table 2: Score comparison of self-care behaviors before and after treatment (N = 30)

Self-care behaviors	Mean	SD	t-value	Sig.
Before treatment	3.12	0.37	3.182	0.003*
After treatment	3.31	0.30		

*Statistically significant 0.05

Part 2 Self-care behaviors of heart failure patients The results of this study were a comparison of self-care behaviors of patients before and after being treated with paired sample t-test. The test found that the score of self-care behaviors before treatment was 3.12 points, the standard deviation was 0.37. The score after treatment was 3.31 points, the standard deviation was 0.30. Self-care behavior score after receiving treatment is higher than before treatment with statistical significance at the level of 0.05. The above behavior explains that taking care of the patient's self after treatment had improved behavior. The detail followed to Table 2.

Table 3: Score comparison of self-care behavior before and after treatment by aspects (N = 30)

Self-care behavior	Mean	SD	t-value	Sig.
Sodium restriction in food and control of drinking water before treatment	2.85	0.58	2.940	0.006*
Sodium restriction in food and control of drinking water after treatment	3.08	0.43		
Regarding medication according to the doctor's treatment plan before treatment	3.67	0.42	1.153	0.258
Regarding medication according to the doctor's treatment plan after treatment	3.75	0.33		
In the use of other medicines, herbs, bolus or supplementary products before treatment	3.70	0.45	1.564	0.129
In the use of other medicines, herbs, bolus or supplementary products after treatment	3.78	0.40		
Surveillance and management of symptoms caused by sodium and excess water before treatment	3.08	0.75	2.151	0.040*
Surveillance and management of symptoms caused by sodium and excess water after treatment	3.34	0.49		

*Statistically significant 0.05

Table 4: Percentage of self-care behaviors of patients classified by aspects

	Practice						
Aspects	Always Everyday	Often 3-5 days/W	Sometimes 1-2 days/W	Rarely 1-2 days/m	Non-compliance	Mean	SD
Sodium and water control	13.33	56.67	26.67	3.33	-	2.85	0.58
Doctor's treatment plan	70.00	26.67	3.330		-	3.67	0.42
The use of other drugs	73.33	26.67	-	-	-	3.70	0.45
Surveillance and management	30.00	50.00	20.00	-	-	3.08	0.75

Table 5: Overview of the percentage, mean and standard deviation of self-care behaviors

Self-care	Amount	Percentage
Have low self-care behaviors (average 0-1.50)	-	-
Have moderate self-care behaviors (average 1.50-2.50)	1	3.33
Have a high level of self-care behavior (average 2.51-4.00)	29	96.67
Total	30	100.00

Average 3.12, standard deviation 0.37

Based on the results of the self-care behavior test of patients according to Table 2 above, it was interesting that what aspects of self-care behavior improved from treatment. it was done to compare scores of self-care behaviors before and after treatment. The results showed that the scores of self-care behaviors of patients after receiving treatment were significantly higher than before treatment at the level of 0.05 in 2 aspects. First was to limit sodium in food and control the amount of drinking water. This behavior had done by instructing the cook not to put MSG and reduce or not add fish sauce, salt, soy sauce, cube soup and seasoning powder in cooking. It included abstaining from eating foods that were mixed with chili paste. Second, the monitoring and management of the symptoms caused by sodium and water are too high. Especially the surveillance behavior in taking care of the patient's self was better than other behaviors such as pressing the shin to assess swelling. As for other aspects, there was no difference in self-care behaviors before and after treatment. They were taking medication in accordance with the doctor's treatment plan and the use of other medicines, herbs, bolus or supplements. Details followed Table 3.

Details of self-care behaviors before entering each treatment found that regular self-care in the use of other drugs, herbs, bolus or supplementary food products was 73.33% more than other aspects. The lower order is the aspect of medication to be consistent with the medical treatment plan and the use of other drugs, herbs, bolus or supplementary products with 70.00%. The least part is the restriction of sodium in food and control the amount of drinking water which is only 13.33%. Details followed Table 4.

When considering self-care behaviors of heart failure patients after receiving treatment through case management. It was found that most self-care behaviors were at a high level with an average score of 2.51-4.00 points. It was arranged in descending order such as taking medication according to the doctor's order and not taking the medicine pot, herbal medicine bolus had an average score of 3.93 points. Their non-alcohol drinking had an average score of 3.90 points. The observation of abnormalities after taking the drug had an average score of 3.83 points. Reading drug labels before eating every time had an average score of 3.80 points and didn't buy other drugs to eat on their own had an average score of 3.70 points. In addition, the analysis of individual self-care behaviors data showed that almost 29 patients were able to manage themselves at a high level, almost 96.67 percent. While only a patient was able to manage at a moderate level or 3.33%. Lastly, there was no patient with low self-care behavior. Details followed Table 5.

This study had 6 nurses as managers in case of participating in the project. They had an average working experience of 20.67 years and the average outpatient work experience was 12 years. The case management model of

cases was a health management process that aims to focus on quality care results under the cooperation of the health team. Nurses were able to manage cases and they were responsible for coordinating care from admission to distribution (Blinderman *et al*., 2008). The data indicated that this group of heart failure patients will receive guidance on how to take care of themselves in accordance with their own practices. It relates to the nurse who is the manager of the case, having work experience for a period that is reliable at a high level.

Most heart failure patients are male than female. Most of them are 50 years old or older. They use gold patents for most of their admission. Their husbands or wives were more cared for than others. Most patients had marital status, more than half had the highest education at the elementary level. They had more than half of the farmer's occupation. The rest were other occupations. The causes of their heart failure were caused by coronary artery disease rather than other cardiovascular diseases. However, the results showed that all patients were admitted at the office hours and came to the doctor's appointment. It points out that most patients had poor financial status. They were a group with a low education level, very old. The use of case management for this group of patients should therefore be appropriate and beneficial, helping them to behave in a better direction. In addition, it was also used as a guideline for case managers to watch for patients with coronary artery disease who were more likely to suffer from heart failure.

When considering the self-care behaviors of patients in the aspect, it was found that the areas in which they took care of themselves more than other areas regularly were the use of other drugs, herbs, bolus or supplementary products. Their best self-care behavior was not taking pot pills, herbal medicine, bolus.The second order was drug administration in accordance with the medical treatment plan and the use of other drugs, herbs, bolus or supplementary products. This behavior, they would read the drug label before eating every time and regularly take the medicine as prescribed by the doctor. In addition, they also pay attention to observing abnormalities after taking the drug. The aspect that the patients did not perform the most uniformly was the restriction of sodium in food and the control of drinking water. In this way, there was something to worry about: the patient still cooks by adding fish sauce, salt, soy sauce, cube soup and MSG. In addition, they also buy food from convenience stores or from the market to eat. These behaviors were high in some periods. There were not many patients who were still eating salty foods for some days, causing a risk of heart failure related to health habits (Suthichareon, 2015). The details of case management are important for helping and promoting patient perception of their risk on a case-by-case basis. They led to the prevention of heart failure in a short time.

However, the self-care behavior assessment form of patients was a questionnaire combined with their own behavioral studies. It led to the development of a care system for patients with heart failure who underwent treatment and follow-up treatment in a heart failure clinic using case management format (Theptong, 2012). The researcher studied the problem by starting from reviewing the solution. Study opportunities for developing models for caring for them. There was a meeting of the planning of operations. Finally, take care of them according to the program of the project. This activity was to take care of patients from many professional fields such as doctors, nurses etc. The case management process was started from visiting patients at the ward. Next, inquire about the patient's history, check their physical condition to assess problems and needs, the treatment plan. Nurses visited patients to assess, to continuously monitor their symptoms and behavior. They teach individual health education to patients in order to be able to properly take care of themselves both in terms of precautions and practices.

CONCLUSION

Health education teaching will focus on the real problems and needs of patient, by focusing on diseases, treatment plans. Precaution behavior is an activity that patients should be treated correctly and regularly such as self-care at home, having meal, sodium restriction in food, control the amount of drinking water and medication etc. As for practical behavior, it is an activity that patients should learn and understand correctly including observation of symptoms of heart failure and initial corrections, daily weighing, adjustment of diuretics, work, exercise and sexual activity, relaxation, stress management and visits by appointment every time. In the past, they had behaved in a better direction on both sides. The behavior mentioned above indicates that they can take care of themselves at a higher level.

SUGGESTION

Practical suggestions include: First, there should be a continuing study of the problem of service provision for the care of this group of patients. Second, there should be a meeting to discuss the problems and obstacles in the operation, the care of the patients of the multidisciplinary team continuously. Third, there should continuously

provide knowledge and practice self-care skills for patients in order to change the behavior of self-care to be effective and efficient fourth, the solution should be due to the participation of multidisciplinary teams and patients. It was the use of a participatory process in order to create good cooperation. It can affect the success of the operation. In addition, families or caregivers should be taught or introduced together in order to prepare a patient care plan at home.

Suggestions for further research include: First should study factors affecting the self-care behaviors of both positive and negative patients in order to promote positive behavior and solve negative behavior problems. Second should study clinical evaluation measurements for accuracy and confirm behaviors that affect self-care, improve patient health conditions. Third should study guidelines for the development of care systems for patients admitted to follow up and treatment in clinical heart failure using case management format.

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