Relationship between Heart Failure Treatment and Self-Management Compliance in Congestive Heart Failure Patients

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Abstract: Self-management has a vital role in treating Congestive Heart Failure (CHF) patients to manage themselves and maintain the ability of body functions. Self-management can be seen in how heart failure patients perform compliance actions in treatment and the patient's ability to know changes in behaviour towards the patient's health status. In addition, it is crucial for people with congestive heart failure to learn about their disease to relieve the signs and symptoms. This study aimed to determine the relationship between knowledge of heart failure care and self-management compliance in CHF patients. This method uses a quantitative correlation research type to determine the relationship between the two variables using an analytical cross-sectional study approach. The sampling technique uses accidental sampling from March to April 2021 at the heart poly Hospital of UNS Surakarta to 100 respondents. Sample criteria: Respondents with a diagnosis of CHF who checked their health at the heart polyclinic of UNS Surakarta Hospital, aged >17 years, patients with NYHA classification 1-3, and willing to be respondents. The research instrument used a demographic questionnaire, knowledge of heart failure care and the Self Care Heart Failure Index (SCHFI) to determine the self-care knowledge of CHF patients and adherence to self-management. The results obtained through the chi-square test showed a p-value of 0.010, meaning there is a relationship between knowledge of heart failure care and self-management compliance. Knowledge of heart failure care can affect the level of compliance of CHF patients because CHF patients need self-management compliance to minimize symptoms of recurrence or worsening of signs and symptoms and reduce the impact of re-hospitalization.

Keywords: Compliance, Heart failure, Knowledge, Self-care

INTRODUCTION

Heart failure occurs because of a complex syndrome when the heart cannot pump blood to flow throughout the body (Borwn et al., 2014). The incidence of heart disease is increasing from year to year along with increasing age, where the number of deaths occurs in males (71.8%) while females (39.1%) (Pudiarifanti et al., 2015). Data from the American Heart Association (AHA) in America shows that 375,000 people died of heart failure (AHA, 2017). The World Health Organization WHO (2015) said that more than 45% of people in the world die from heart and blood vessel disease, amounting to 17.7 million out of 39.5 million deaths. Based on primary health research data, the prevalence of heart disease in Indonesia in 2018 was 1.5% or around 1,017,290 people who suffered from heart failure (Riskesdas, 2018).

The low ability to self-care can increase the morbidity of patients with heart failure (Lewis et al., 2017). Efforts to minimize clinical symptoms in patients with heart failure are to increase self-management (Jonkman et al., 2016). Self-management is the ability possessed by a person to manage treatment, recurrence symptoms, psychological and physical disturbances and the presence of chronic diseases that can change a person's lifestyle. Self-management in patients with congestive heart failure is responsible for managing daily activities, such as medication adherence, weight monitoring and lifestyle changes (Cui et al., 2019).

Knowledge is something related to the learning process. The learning process is influenced by various internal factors, such as motivation and external factors, such as available information

facilities and socio-cultural conditions (Riyanto, 2014). Previous research has shown that congestive heart failure patients with low knowledge are due to a lack of knowledge about congestive heart failure and how to treat it appropriately and adequately (Boyne et al., 2014; Clark et al., 2015).

A preliminary study conducted by researchers at Sebelas Maret University Hospital (UNS) Surakarta on November 17, 2020, found that 1122 patients with congestive heart failure visited the heart polyclinic for health checks. The number included 701 male and 421 female patients obtained in the last three months, from August 1 to October 31, 2020. The results of the interview on November 17, 2020, conducted by researchers, involved five respondents with congestive heart failure, 3 of whom could answer 4 of the treatment of heart failure correctly, while 2 of them could only answer 2 of the treatment of heart failure correctly, out of 5 respondents said that they adhered to the treatment that had been mentioned. Respondents know and always adhere to the importance of appropriate routine therapy for taking medication and routine control.

Respondents know the therapy but do not comply with it in weighing therapy and adherence to a low-salt diet. In contrast, the symptoms that appear in patients with CHF, such as swelling in the lower extremities, irregular heart rhythms, changes in urine output, and difficulty breathing, respondents do not know about this if it is indeed a symptom of heart failure, so that respondents are not immediately going to the health service. Based on the background described above, it is crucial to research the relationship between knowledge of heart failure care and self-management compliance in patients with congestive heart failure at Sebelas Maret University Hospital, Surakarta.

METHOD

This quantitative study used a cross-sectional approach with an accidental sampling technique. The population in this study amounted to 1122 patients with CHF, and the sample in this study took 100 respondents. This research has obtained permission from the UNS Hospital with the number 582/UN27.46/TA.04.19/2021, which was carried out at the cardiac polyclinic starting in April 2021.

Data collection tools in this study used a demographic questionnaire, knowledge of heart failure care, and the Self Care Heart Failure Index (SCHFI), which Susilawati translated in 2012. The number of questions consisted of 15 about knowledge of heart failure care using the Gutman scale. Moreover, SCHFI uses the Linkert scale, which is divided into three question indicators: self-care maintenance, self-care management, and self-care confidence. The questionnaire has been tested for validity and reliability with Cronbach's Alpha values of 0.874 and 0.945. The questionnaire was valid and reliable for measuring knowledge of heart failure care with self-management compliance. Univariate analysis was used to obtain a description of the respondent's characteristics, a description of the knowledge of heart failure care and a description of self-management compliance. Statistical test results were carried out using the chi-square test to determine the relationship between the two variables and to find out how strong the relationship between the two variables was.

RESULT

Table 1 show the results of the study about the characteristics of respondents The results show that the majority of respondents aged 56 – 65 years are 50 people (50%), and most respondents have the latest high school education level, as many as 41 people (41%). From the data on the frequency of classification of heart failure patients based on NYHA, the most heart failure sufferers are NYHA 2 as many as 42 people (42%), the last respondent was hospitalized for less than one year, as many as 68 people (68%). The majority of respondents were diagnosed with Congestive heart failure (CHF). Most of them were less than five years as many as 77 people (77%), comorbid diseases owned by the most respondents were respondents who did not have comorbidities as many as 64 people (64%), from the frequency data who treated respondents when at home are mostly husband or wife as many as 36 people (3%).

Table 1. Distribution of Characteristics of Respondents with Congestive Heart Failure in April 2021 (n=100)

No.	Characteristics	Frequency(n)	Percentage (%)
1.	Age		
	a. 36 – 45 Years Old	2	2%
	b. 46 – 55 Years Old	19	19%
	c. 56 – 65 Years Old	50	50%
	d. 66 – 75 Years Old	24	24%
	e. 76 – 85 Years Old	5	5%
2.	Gender		
	a. Male	55	55%
	b. Female	45	45%
3.	Last Education		
	a. No School	9	9%
	b. Elementary School	26	26%
	c. Junior High School	14	14%
	d. Senior high school	41	41%
	e. Diploma	4	4%
	f. Bachelor	6	6%
4.	Profession		
	a. Does not Work	56	56%
	b. Work	44	44%
5.	NYHA		
	a. I	32	32%
	b. II	42	42%
	c. III	26	26%
6.	Last rehospitalization		
	a. < 1 Year	68	68%
	b. > 1 Year	32	32%
7.	Year of Diagnosis CHF		
	a. 1 – 5 Years	77	77%
	b. 6 – 10 Years	18	18%
	c. 11 – 15 Years	5	5%
8.	Comorbidities		
	a. No Comorbid	64	64%
	b. Diabetes	7	7%
	c. Hipertension	21	21%
	d. Kidney Stones	1	1%
	e. Vertigo	3	3%
	f. DM Hipertension	2	2%
	g. Hernia	2	2%
9.	With whom to live		
	a. Husband	36	36%
	b. Wife	36	36%
	c. Child	10	10%
	d. Wife and Child	4	4%
	e. Husband and Child	9	9%
	f. Sibling	5	5%

Table 2. Distribution of Knowledge of Self Care in Heart Failure Patients

Category	Frekuency (n)	(%)
Good	43	43,0
Not Good	57	57,0
Total	100	100,0

From the table above, it can be seen that the distribution of knowledge of heart failure treatment is the most respondents who have good knowledge of heart failure care, as many as 57 respondents (57%) while 43 respondents (43%) have less than average knowledge. The distribution of knowledge of heart failure treatment at UNS Hospital shows that the lowest value is 19, the highest value is 28 and the average value or mean 23.87. The standard deviation value of the question is 2.196.

Table 3. Distribution of Self-Management Compliance

Category	Frekuency (n)	(%)
Obey	45	45,0
Less Obedient	55	55,0
Total	100	100,0

From the table above, it can be seen that the distribution results of self-management compliance of patients with congestive heart failure are the most respondents who are less compliant in performing self-management, namely 55 respondents (55%), while 45 respondents (45%). The distribution of heart failure care knowledge at UNS Hospital shows that the lowest score is 31, the highest score is 64, and the mean is 49.12 (SD 5.159).

Table 4. Distribution of Knowledge of Heart Failure Care With Self-Management Compliance

		self-management compliance				Result			Value	p-value
		Less Obedient		Obey						
		N	%	N	%	N	%			
knowledge of heart failure	Not Good	30	30%	13	13%	43	**43**%	100%	6.647	0,010
	Good	25	25%	32	32%	57	**57**%	100%		
Result		**55**	55%	**45**	45%	100	100%			

The statistical test results obtained a p-value of 0.010. It can be interpreted that there is a relationship between knowledge of heart failure care and self-management compliance in patients with congestive heart failure at Sebelas Maret University Hospital, Surakarta.

Based on Table 4, most of the results of the tests that have been carried out using cross-tabulation of knowledge of heart failure care with self-management compliance of patients with congestive heart failure obtained as many as (57%) respondents who have good knowledge (45%) respondents are obedient in carrying out self-management. In the comparison, respondents with poor knowledge (43%) are less obedient in self-management (55%).

In this study, as many as 32 respondents (32%) with good knowledge of heart failure care are obedient in doing self-management, then 25 respondents (25%) who have good knowledge are not compliant in doing self-management. At the same time, among the respondents who had poor knowledge related to the knowledge of heart failure care, as many as 13 respondents were able to do

self-management well, and 30 respondents (30%) who knew heart failure care did not comply with self-management.

DISCUSSION

In this study, most respondents know that self-care (weighing every day, avoiding foods that contain salt and MSG, taking medication and doing normal controls, doing physical activity for 30 minutes, and using reminders when taking medication) should be done in patients with CHF at home. Knowledge is influenced by several factors, including experience, economy (income), socioeconomic environment, education, mass media or information exposure, and access to health services or health facilities. The level of education affects the patient's ability to understand his health and carry out self-management, treatment, and care (Hudiyawati et al., 2021).

The high level of patient education affects patient compliance with treatment so that it impacts healthy behaviour and can adapt to their health conditions. Furthermore, a study by Krueger showed that the level of self-care will be influenced by how long they have known their illness. The results of the average score of self-management compliance in this study showed that the self-management compliance of respondents with congestive heart failure was not good. In the self-management ability of 100 respondents with heart failure, 55 respondents (55%) were less compliant in self-management. From the research results, respondents with poor self-management are caused by respondents with congestive heart failure who do not understand self-care related to congestive heart failure. It is in line with research conducted by Farhana & Hudiyawati (2020) and Laksmi et al. (2020), which stated that the average respondent with CHF had poor self-management compliance.

Self-management compliance is influenced by various factors, one of which is the respondent's level of education. Education can be a benchmark in describing someone who can receive information well through education or education. However, it can not only be seen from the level of education, but experience in hospitals can also affect the education process (Kamidah, 2015). Therefore, self-management needs a high awareness because it is related to the pattern and behaviour of life. Respondents' awareness in obtaining good information will provide an overview of the condition of the patient's behaviour that can affect his health. The experience of patients with heart failure who do self-management can be seen in how heart failure patients take action to comply with treatment, low-salt diet, fluid restriction, symptom monitoring and the patient's ability to know the behavioural changes that have been made to the patient's health status (Linn et al., 2016).

The study's results interpreted that there is a relationship between knowledge of heart failure care and self-management compliance in patients with congestive heart failure at Sebelas Maret University Hospital, Surakarta. It was found that most respondents who can comply with self-management are 56 years and over. In addition, patients diagnosed with CHF for more than six years are also obedient in carrying out self-management because the experience of rehospitalization due to non-compliance can motivate them to change their behaviour.

In this study, it was also found that as many as 13 respondents who had poor knowledge were obedient in implementing self-management. From the analysis, it was found that respondents who have poor knowledge and are obedient in self-management are influenced by the year of diagnosis of CHF. Most of the respondents who have poor knowledge but adhere to self-management are diagnosed with CHF for less than one year. In addition, some respondents have other comorbidities, so respondents have carried out self-management related to other diseases before knowing about self-care for patients with CHF. Furthermore, most patients with congestive heart failure who have poor knowledge and are obedient in carrying out self-management do not know information related to heart failure treatment that heart failure is a disease that requires complex treatment.

It means that the lack of knowledge does not always strongly influence increasing compliance in self-management. Respondents more often said they had accepted the condition of the illness they suffered and accepted that heart disease was difficult to heal. Therefore respondents thought more positively and did not overthink their health condition. Many patients with chronic diseases already know the recommendations for self-care. However, they do not implement them because many think

these behaviours tend to be unpleasant, so they do things as they wish if they have not shown symptoms (Setyorini, 2017).

Respondents' knowledge of heart failure treatment is vital to help reduce recurrence or worsening of symptoms of congestive heart failure, so the more and better knowledge of CHF treatment, the better in dealing with the condition of the disease. Furthermore, by changing the behavior, one will be able to control the condition of the disease suffered and be able to comply with self-management to avoid worsening the symptoms experienced. A low level of knowledge about heart failure treatment can worsen the health condition of patients with congestive heart failure and lead to non-compliance behavior in self-management due to a lack of knowledge related to self-care. Non-adherence of patients with congestive heart failure in self-care such as medication, low-salt diet, fluid restriction, and monitoring symptoms can lead to worsening of the patient's condition and can be re-hospitalized due to disease recurrence (Linn et al., 2016; Smeltzer, 2016). In addition, the impact that will be caused due to non-compliance is the condition of getting sick longer, health conditions worsening, and needing hospital treatment until death (King & Goldstein, 2021).

The relationship between knowledge of heart failure care and self-management compliance in patients with CHF can be influenced by factors such as illness experience, education, exposure to mass media and information, cognitive abilities, behavioral changes, self-efficacy, socioeconomic, motivation and social support (Kamidah, 2015). Most heart failure patients have a directly proportional relationship with self-management, heart failure experienced by patients can affect sick individuals holistically, biologically and psychologically. Most patients recognize their illness when the symptoms are severe, and only a few can recognize the early symptoms of the disease to the point that these patients can no longer take care of themselves (Wahyuni & Kurnia, 2014). From this study, it can be concluded that knowledge of heart failure care is an essential factor that can affect the level of compliance of patients with congestive heart failure because self-management compliance is needed by patients with congestive heart failure to minimize symptoms of recurrence or to worsen of signs and symptoms and reduce the impact of re-hospitalization.

CONCLUSION

There is a relationship between knowledge of heart failure care and self-management compliance in patients with congestive heart failure at Sebelas Maret University Hospital, Surakarta. Most of the respondents with good knowledge are obedient in carrying out self-management, and respondents who have poor knowledge are less obedient in carrying out self-management. Therefore, HF patients can improve self-management compliance to reduce the worsening of symptoms and rehospitalization.

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