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Effects of Self-Efficacy Exercise on Self-Care in Congestive Heart Failure Patients

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Abstract. Heart failure is a cardiovascular disease which increases the incidence and mortality rates that are still high in Indonesia. The problems experienced by patients with heart failure are frequent re-treatment and death and disability. Heart failure patients who experience recurrence due to lack of self care. The purpose of this study was to determine the effect of self-efficacy exercise on self care for patients with congestive heart failure. This type of research is a quasy experiment with a non equivalent control group design pre test post test design. The sample is heart failure patients who were treated in August - September 2018 at the Kraton Pekalongan Hospital and Kajen Pekalongan Hospital. The sample selection technique uses consecutive sampling. The sample in this study amounted to 32 in the intervention group and 32 in the control group. Data analysis using Wilcoxon test and Mann Whitney test. The results of this study showed that there were significant differences in self care between the control group and the intervention group after being given a self-efficacy training intervention with a p value of 0.001.

Keywords: Heart Failure, Self care. Self-efficacy training

1 Introduction

Heart failure is a cardiovascular disease which has an increased incidence and prevalence. According to WHO published in 2015 an estimated 17.5 billion people in 2012 died of cardiovascular disease including heart failure [1].The prevalence of heart failure based on the results of Riskedas (2013) obtained from interview data diagnosed by doctors in Indonesia was 0.13 percent, and those diagnosed by doctors or symptoms were 0.3 percent. The highest prevalence of heart failure based on diagnosed by doctors in DI Yogyakarta (0.25%), followed by East Java (0.19%), and Central Java (0.18%). Indonesian Basic Health Research (Riskesdas) in 2013, showed that heart failure is a disease that causes death in Indonesia with a range of 9.7% of all heart disease [2]

Heart failure patients often return to the hospital due to recurrence. The majority of causes of recurrence are caused by patients not taking the recommended therapy, for example not being able to carry out treatment therapy properly, violating dietary restrictions, not following medical follow-up, excessive physical activity, and not being able to recognize the symptoms of recurrence. Research from Majid (2010) get results that one of the factors that influence the incidence of hospitalization for heart failure patients is the independence of patients in self care [3]. Self Care in hearth failure patients according to Riegel, et all (2009) is an active decision

making process that includes the selection of behavior to maintain physiological stability (maintenance) and respond to the symptoms experienced (management) and how patient confidence in the overall effort self care that has been done (confidence)[4].

According to Hu & Arou's research (2013), it turns out that self-efficacy has been recognized as a major factor influencing self-care and chronic disease management [5]. Self-efficacy is an important predictor for determining the hospitalization of patients with heart failure. Increased risk factors for patients with heart failure associated with low self-efficacy, which is indicated by poor heart function [6]. Therefore nurses have a very important role in increasing the patient's self-efficacy which is expected to influence patient behavior in improving self-care of patients with heart failure. One of the roles of nurses can be done to improve self-efficacy by providing self-efficacy training. Therefore, researchers are interested in conducting research on the effect of self-efficacy exercises on self care in patients with congestive heart failure.

2 Method

This type of research is quasy experimental with the aim to reveal the causal relationship of certain treatments[7]. This research is a non equivalent control group pre test post test design. This study uses a control group without randomization. In this study the determination of the control group and the intervention group was determined by the researcher.

The population is the whole subject of research under study[8]. The population in this study were all patients with heart failure who underwent treatment in June - July in Pekalongan Palace Hospital with 45 patients and Kajen Regional Hospital in Pekalongan District with 40 patients. and Kajen Regional Hospital in Pekalongan. The sample selection technique uses consecutive sampling. The sample in this study amounted to 32 in the intervention group and 32 in the control group. The inclusion criteria were heart failure patients who were hospitalized in both new patients and re-hospital, heart failure patients who were willing to be respondents, did not experience cognitive impairment and patients with NYHA I-III with stable conditions

Data analysis:

a. Univariate analysis
   This analysis is carried out to describe all variables, namely independent variables and dependent variables using a frequency distribution table. Univariate analysis aims to simplify or facilitate the interpretation of data into useful information in the form of narrative and frequency distribution tables of respondents according to the variables studied. Univariate analysis in this study illustrates the characteristics of respondents based on age, duration of illness, sex, education and smoking history.
b. Bivariate analysis
   Bivariate analysis is done by looking at the normality of data from each variable. The data normality test in this study used the Shapiro Wilk test because the sample <50. The normality test results in the control group were found to be $p = 0.001$ and in the intervention group the p value was 0.001. This shows that the value of $p < 0.05$, so the data are not normally distributed. Therefore to find out the differences in self care before and after the intervention in the control group and the intervention group using the Wilcoxon test. Meanwhile, to find out the difference test between self care in the dick group and self care in the intervention group using the Mann Whitney test

3 Result

3.1 Univariat Analysis

Based on the table above shows that the average age of respondents in the control group and intervention group was 49.0 years and 52.4 years respectively. Whereas the average length of illness for respondents in the control group and intervention group was 3.3 years and 2.7 years, respectively.

Table 1 Average Age of Respondents and The Average Length of Illness for Respondents

Variable	Group							
	Control group			Intervention group				
	Mean	SD	Min-Max	Mean	SD	Min-Max	C1 95%	P
Age	49	7,78	35-65	52	7,6	37-65	46-51	0,856
Length of Pain	3,3	1,3	1 - 5	2,7	1,1	1 – 5	2,8-3,7	0,151

Based on the table above shows that there are 25 respondents (78.9%) are the majority are male. The educational background of the respondents were mostly high school educated in the control and intervention groups, each of which were 17 people (53.1%). Based on the table above shows that there are 25 respondents (78.9%) are the majority have a history of smoking and the majority of respondents belong to the NYHA I functional class that is 14 respondents (43.8%). (Table 2)

Table 2. Characteristics of Respondents by Gender, Education and Smoking History

Variable	Group				
	Control group		Intervention group		
	n	%	N	%	P
Gender					
Male	25	78,1	25	78,1	0,749
Female	7	21,9	7	21,9	
Education					
SD	5	15,6	6	18,8	0,754
SMP	10	31,2	12	37,5	
SMA	17	53,1	14	43,8	
Smoking History					
Yes					
No	25	78,1	26	81,2	1,000
	7	21,9	6	18,8	
NYHA					
NYHA I	14	43,8	14	43,8	1,000
NYHA II	13	40,6	13	40,6	
NYHA III	5	15,6	5	15,6	

3.2 Bivariat Analysis

Based on the table above, it shows that the level of self care in the control group and the intervention group is obtained p = 0.001, where the value of p <0.05 so that it can be concluded that there is a difference between the level of self care in the control group between before and after the self-efficacy exercise and there the difference between the level of self care in the intervention group between before and after self-efficacy exercises. In the table above also

shows the p-value = 0.711 where the value of p> 0.05 so that it is concluded that there is no significant difference in self care between the control group and the intervention group before self-efficacy exercises are performed. Whereas after the intervention was obtained the p-value = 0,000 where p value <0.05 can be concluded that there are significant differences in self care between the control group and the intervention group after self-efficacy exercise.

Table 3. Self Care in Congestive Heart Failure Patients Before and After Conducting Self-Efficacy Training in Control and Intervention Groups (N = 32)

	Pre Test				Post Test				
Variable	**Mean**	**SD**	**Min -Max**	**C1 95%**	**Mean**	**SD**	**Min - Max**	**C1 95%**	**p**
Control	39,1	0,95	37-41	38-39	40,09	1,17	37-42	39-40	0.001
Intervention	39,2	0,37	38-40	38-39	64,72	5,30	59-90	62-66	0.001
P value			0,711				0,001		

In the table shows that in the control group there were 20 respondents experienced an increase in the value of self care after the intervention and 12 respondents did not experience changes in the level of self care after the intervention. In the intervention group, all 32 respondents experienced an increase in self care after self-efficacy exercises were conducted. For p homogeneity value, p value = 0.202 where p> 0.05 so that it can be concluded at the beginning before the intervention conditions or variations in self care in the control group and the intervention group are the same. congestive heart.

Table 4. Differences between the Control Group and the Intervention Group before and after self-efficacy exercise in patients with congestive heart failure

Group	**Different**	**Mean Different**	**p**
Control Group		0,99	0,202
Negatif Rank	0		
Positif Rank	20		
Ties	12		
Intervention Group		25,52	0,202
Negatif Rank	0		
Positif Rank	32		
Ties	0		

4 Discussion

4.1 Self Care in Heart Failure Patients before Self-Efficacy Exercises

Based on the results of the study prior to the intervention, the majority of respondents were at a relatively low level of self care with low scores in both the control and intervention groups. This is in line with the results of previous studies which also found that heart failure patients still have poor self-care. The lack of self-care in heart failure patients is also found in other countries both in developed and developing countries [9]. Research on self care and self-quality of heart failure patients conducted by Britz and Dunn (2010) mentions that some patients report that they have not carried out self care appropriately as taught for example by obeying the medication given, a low salt diet. Regular physical activity, fluid restriction, daily weight monitoring, early recognition of signs and symptoms. In this study, the level of self care that is

still low in patients with heart failure caused by patients due to lack of understanding and ignorance of patients about proper care to be done in patients with congestive heart failure [10].

4.2 Self Care in Heart Failure Patients after Self-Efficacy Exercises

Based on the results of research conducted, it can be concluded that after self-efficacy exercise the level of self care in heart failure patients has increased both in the control group and the intervention group. However, changes in self care behavior in the control group did not occur significantly. Patients tend to still do the same self care behavior. This is shown in the dimensions of self-care maintenance of patients who have not been able to perform activities regularly, patients have not been able to maintain a low salt diet. In the dimension of self care management, patients have sometimes not been able to make the right decisions if they have problems with their health due to heart failure. In the dimension of self care confidence, patients are still not sure to take appropriate actions when patients experience health problems due to heart failure.

In the control group, patients experiencing an increase in congestive heart failure did not get a self-efficacy exercise intervention, but the intervention obtained by the patient was only discharge planning done by the nurse. Nurses provide health education before patients go home on the advice to take medication regularly, maintain diet and maintain physical health with exercise.

Education provided by nurses to patients can make an increase in self care in patients with congestive heart failure in the control group. Providing education in discharge planning is important to facilitate individual changes or modifications. Knowledge is a very important domain for the formation of one‘s actions. Knowledge is needed as support in growing self-confidence as well as attitudes and behavior every day, so it can be said that knowledge is a fact that supports one‘s actions

In the intervention group all heart failure patients experienced changes in the level of self care. Self care in heart failure patients has increased after self-efficacy exercise. This is shown in the dimensions of self care maintenance, patients can carry out physical activities regularly, patients are able to maintain a low salt diet, and patients monitor body weight every day. In the dimension of self care management, patients are able to make the right decisions if they have problems with their health due to heart failure. When the patient experiences swelling in the legs, the patient is able to recognize it and take appropriate action by reducing a lot of water intake. In the dimension of self care confidence, patients have the confidence to take appropriate actions when bunches and symptoms of heart failure are experienced.

In the intervention group the patients received self-efficacy exercises with various stages carried out. Improved self-care ability in patients with heart failure after self-efficacy exercises due to increased patient knowledge after being given education related to self care in patients with heart failure. Increased patient knowledge will improve the cognitive abilities of patients. Supporting research states that there is a relationship between cognitive decline and low self-care behavior in patients with heart failure. Nine out of ten studies reported a significant positive relationship between mild cognitive impairment and self-care for heart failure, specifically in relation to medication adherence or generic actions from self-care behavior.

Self care is also influenced by an increase in self-confidence of patients about their ability to live a life after a client is diagnosed with congestive heart failure through several educational studies and its effect on improving self care is inseparable because it forms a strong and dynamic relationship [11].

4.3 Effects of self-efficacy exercise on Self Care Patients with congestive heart failure

The results of the study show that self-efficacy exercises are effective in improving self care in patients with congestive heart failure. This is in line with research that has been conducted on Self-efficacy training for Patient with End Stage Renal Disease by providing training interventions to improve self-efficacy with health coaching strategies showing the results that self-efficacy training is useful in controlling the weight of end-stage renal failure patients undergoing hemodialysis[12].

Some factors that can affect self efficacy are mastery experience, vacarious experience, verbal persuation, modeling influence and social persuation. Individual experience and success are the main sources. in the formation of the patient's own efficacy. Learning from the experiences of oneself and others through observation and imitating correct health behaviors can improve self-efficacy. Through verbal persuasion, the client gets the influence and suggestion that he is able to overcome the problem [13].

The self-efficacy exercise conducted in this study includes 4 stages. The first stage is the mastery experience where the patient is explored experience in doing self care. Experience is one of the strong contributors in developing skills in self-care. The experience experienced by patients will make patients learn so many things that there is a desire to change behavior based on that experience [5]. The second stage is role modeling. At this stage the patient is shown a video about how to do self care appropriately. Health counseling aims to change unhealthy behaviors into healthy ones, which means that they can change the knowledge of respondents who are not good to be good. The provision of health education is to achieve changes in the behavior of individuals, families, and communities in fostering and maintaining healthy behavior and a healthy environment, and plays an active role in efforts realize the optimal degree of health. This is consistent with research on the influence of education through video stating that health education media through video media has several advantages, namely more interesting and easier to understand, with video a person can learn on his own, can be repeated in certain parts that need more clear, can display something detailed, and can be accelerated or slowed down [14].In the third stage, verbal persuation. In this case the patient is given verbal support to improve self care. This support also involves the family directly. Verbal persuasion carried out in the stages of self-efficacy training in heart failure patients by providing motivation and support to patients. The last stage in the implementation of self-efficacy exercises is physiological arousal. In this stage the patient is given counseling guidance to solve problems or obstacles that arise in conducting self care. Intense guidance by establishing communication can increase patient confidence to make changes in behavior[5].

Factors supporting self-care for patients with heart failure are experience and care skills. Researchers state that there are several factors that influence decisions about self-care, including knowledge, experience, and skills. Some self-care interventions aim to increase patient knowledge, but insufficient knowledge to change self-care behavior. In addition to gaining knowledge, patients need to have the skills to plan, set goals, and make decisions as well as self-confidence or self-efficacy[4]. Verbal persuasion is carried out in the stages of self-efficacy training in heart failure patients by providing motivation and support to patients. Motivation is a force that drives humans to achieve goals. Maintaining autonomy is the highest goal of patients with heart failure, followed by physical health, maintaining social relationships and eliminating symptoms. Nurse and family support plays an important role in supporting the self-care of patients with heart failure. Qualitative research on the study of self-care in heart failure patients, six The main factors influencing self-care for heart failure are caregivers: social networks and social support, place, financial and financial capacity, work and work, and groups and programs

supporting heart failure patients. Nurses make important contributions to the care of patients with heart failure [15].

An important outcome in self-efficacy training in heart failure patients is increasing self-confidence. Trust in self-care is an important factor influencing self-care and intervention. Self-confidence must be considered as a way to improve self-care. One study found that self-care confidence was more important than cognition in predicting self-care for heart failure patients. Confidence in self-care is an important factor influencing self-care and intervention [16].

5 Conclusion

Self-efficacy exercises can affect self care in patients with congestive heart failure so that the results of this study can be used as a study material in improving health services, especially as an alternative to independent nursing interventions, in this case self-efficacy exercises to improve self-care in congestive heart failure patients.

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