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The Effect of Home Heart Walk on Fatigue Among Heart Failure's Patients

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Abstract

Heart failure is a physiologic state in which the heart cannot pump enough blood to meet the metabolic needs of the body. Fatigue is a major problem that arises in heart failure patients. One intervention to reduce fatigue is Home Heart Walk (HHW). The aim of this research was to determine the effect of HHW on fatigue among heart failure's patients. This research used Pretest-Postest Design Pre-experiment design, at RSUPN Dr Cipto Mangunkusumo & RS PGI Cikini during May-July 2015, involving 50 heart failure patients with functional class 2 & 3.The nurse teached HHW to heart failure patients with a six-minute walking procedure with five meter's distance in the hospital and then the exercise is continued at home within two days for six weeks. The result obtained majority of the respondents is clasification heart failure's functional class two (76%). Before & after HHW's intervention, the majority of normal pulse rate from 90% become 100%.The test results showed there was significant difference in the degree of fatigue before and after HHW's intervention (p=0.000) and there is a relationship between respiratory rate on the degree of fatigue (p=0.043). The conclusion is HHW can reduce fatigue in heart failure patients during six weeks. Therefore it is recommended for nurses to teach HHW and motivate patient to have self-exercise.

Keywords: Fatigue's Degree, Home Heart Walk, Heart Failure's Patients.

Introduction

Non-communicable diseases have been a significant disease burden to the world that consist of cardiovascular disease, diabetes, cancer and chronic respiratory diseases (WHO, 2010). Globally, cardiovascular disease is the number one cause of death (AHA, 2015). Cardiovascular disease consists of atherosclerosis, hypertension, coronary heart disease, congenital heart disease, myocardial infarction and heart failure (The Office of Research on Women's Health (ORWH), 2012). Among the cardiovascular diseases, heart failure disease is now recognized as the foremost public health problem (McMurray & Stewart, 2014).

Heart failure disease has experienced an increase of incidences, reaching 5.7 million people above 20 years old (Sakata & Shimokawa, 2013) and with more than 650,000 cases diagnosed annually in the United States (AHA, 2013). Heart Failure's patient recorded in the United Kingdom about 900,000 people and diagnosed with heart failure 30–40% every year. Increased heart failure's patients show a bad marked prognosis in the progression of heart failure in the United Kingdom (National Institute For Health & Clinical Excellent, 2010). Indonesia, the incidence of heart failure, based on the symptoms of heart failure, reaches as many as 530,068 people (0.3%) and based on the doctor's diagnosis, 229,696 people (0.13%) (Kementrian Kesehatan RI, 2013). According to the data gathered by a medical colleague in RSUPN Dr. Cipto Mangunkusumo, the incidence of heart failure patients extended to as many as 839 people (March–May 2015).

Heart failure's patient experience many disorders both physically, psychologically, socially, even spiritual and financial. Heart failure disease affects dyspnea (shortness of breath / gasping), orthopnea (shortness of breath time lying down), paroximal noctural dyspnea (shortness of breath of sleep with choking feeling), cough, muscle weakness, pale skin, cold and sweating, oliguria as long as day and nocturia during the night and fatigue (Ignativicus & Workman, 2013; Black dan Hawks, 2009). Heart failure's patient experience decreased cardiac output causing hypoxia tissue and slow down the disposal of metabolic waste that eventually tired easily (Black dan Hawks, 2009).

The study in Hospital Ostra in Sweden of 1,127 heart failure's patients found 53% incidence of fatigue symptoms. In another study at Cleveland's hospital in Ohio, among the 276 respondents of heart failure's patients, found prevalence of extreme fatigue as many as 119 respondents (43.1%), compared to the symptoms breath-shortness when lying down as many as 65 respondents (23.6%) and the symptoms chest pains as many as 51 respondents (18.5%). Other results obtained the higher classification Functional Class then the incidence of symptoms of fatigue is increasing where it found the prevalence of symptoms of severe fatigue is found in heart failure's patients with classficition functional class IV as much as 85.4% (Patel, 2008; Albert et al., 2009). Fatigue leads to decreased physical activity and quality of life and recurrent heart failure disease so that the patient requires a regular exercise of physical activity at home (Black & Hawks, 2009; Selig et al., 2010).

Nursing's intervention that can be done to reduce fatigue's symptoms are with health education, fluid restriction and salt diet restriction, rest, medication, motivation and exercise (Philipson et al., 2013; deWit & Kumagai, 2013). Heart failure's patient think that applying physical activity at home is more difficult than applying drug management, diet or fluid restriction (Du et al, 2011). Lack of physical activity in heart failure's patients occurs because heart failure's patient feel less confident to do exercises at home Cardiovaskular Health Network (CHN), 2008).

Physical exercise is proven to be good, safe and beneficial for heart failure's patient, but it has not been widely applied. Heart failure's patient who do physical exercise for 30 minutes only 45%, heart failure's patients who do a little physical exercise just 53% and heart failure patients who do not do physical exercise amount 23% (McCarthy et al., 2015). Heart failure's patients who do not adhere to and disobey in cardiac rehabilitation exercise caused by several factors are old age, low education level, low socioeconomic, less motivation for exercise and lazy so that

nurses should encourage and suppress the importance of physical exercise to heart's failure patients (Conraads et al., 2012).

Nurses as professional health workers have an important role in helping patients in fulfilling self care patients where nurses play a role in promotive & educative (Tomey & Alligood, 2010). Self care of heart failure patients in the form of nutrition diet management, drug management, physical activity training, weight monitoring and signs of physical decline (Uly, 2014). Self care theory is related to physical activity where it is found that 56.2% heart failure's patient have low self care caused by less activity (Wahyuni & Kurnia, 2014).

Orem self care's theory is applied to heart failure's patient undergoing cardiac rehabilitation. The use of orem model training methods based on individual needs and cardiac rehabilitation exercises can improve the ability of self care in heart failure's patients. Research shows a significant difference of 0.001 statistically ($p < 0.001$) with rehabilitation exercise, self care and health education (Jahabin et al., 2014).

Heart rehabilitation is a program that combines exercise, health education and counseling about risk factors for heart failure's patient. The phase of cardiac rehabilitation consists of phase I (inpatient), phase II (immediately after ambulatory care), phase III (shortly after ambulatory), and phase IV (maintenance of ambulatory conditions) (Smeltzer et al., 2010; Black & Hawks, 2009).

American Heart Association recommended that heart failure's patients should follow the home-based cardiac rehabilitation program in the form of a six-minute walking exercise (AHA, 2014). One intervention such home-based walking exercise for heart failure's patient (Du et al., 2011) and used to reduce the occurrences of fatigue symptoms (Suharsono, 2011) is the Home Heart Walk (HHW).

Suharsono's study (2011) found that there was a decrease in the degree of fatigue from scale 12 (medium level fatigue) to scale 11 (low level fatigue) with Home Based Exercise Training so that heart failure's patient can do Home Based Training Exercise to improve functional capacity and quality of life independently at home. Home Heart Walk is one of the second phase heart rehabilitation sections where heart failure's patient performs a walking exercise in six minutes with five meters distance and is monitored and followed up via phone by the nurse (Du et al., 2011; Smeltzer et al., 2010; & Black & Hawks, 2009). Home Heart Walk is beneficial as one of the home based training exercise interventions (Du et al., 2011) and is used to reduce symptom fatigue's degree who felt by heart failure's patient (Suharsono, 2011).

There are several differences between Home Heart Walk's study and home based training exercise examined by Suharsono (2011). The first difference is Suharsono's Research (2011) only followed 23 heart failure's patients with functional class I, II, and III which resulted in the finding of less respondents and lack of uniformity of respondents where heart failure's patients with functional class I (no limitation of physical activity) can not be equated with heart failure's patient with functional class II (slight limitation of physical activity) and III (marked limitation of physical activity). Re-research is needed with more respondents and more uniform in the selection of respondents where in this study followed by 50 heart failure's respondents with functional class II (slight limitation of physical activity) and III (marked limitation of physical activity).

The second difference is Suharsono's study (2011) conducted in one hospital that is RSUD Ngudi Waluyo Wlangi. Suharsono's research resulted in a generalization process for heart failure's is difficult and needed re-examination again in two hospitals for the generalization process. The Heart Heart Walk Research was conducted at two hospitals, RSUPN Dr. Cipto Mangunkusumo hospital and PGI Cikini hospital so easy to do the generalization process for Home Heart Walk training to heart failure's patients.

The third difference is in Suharsono's study (2011) found less length of time interval of training intervention. Suharsono's study is only three times a week for 4 weeks. This condition results in less accurate results obtained because the timing is too little. Therefore, longer retrospective studies are required. The respondent Heart Walk Walk Research is done over time within 6 weeks every two days so the result and the

symptoms of fatigue felt less.

The problem's formulation in this resercher is: How the effect of Home Heart Walk to fatigue's degree on heart failure's patients. The general purpose of this researcher is to know the effect of Home Heart Walk on the fatigue's degree in heart failure's patients. The Specific objectives of this researcher are: 1) to know the description of respondent characteristics include age, sex, Body Mass Index (IMT) and heart failure's classification class. 2) identify the condition of heart failure seen from blood pressure, pulse rate, respiratory rate, degree of fatigue and mileage in heart failure's patients. 3) to know the difference in the degree of fatigue before and after the Heart Heart Walk intervention. 4) analyze the relationship of confounding variable to the fatigue's degree after Heart Heart Walk intervention. 5). analyze the effect of Home Heart Walk on fatigue's degree and analyze the different fatigue's degrees between men and women. 6). analyze the meaning of Home Heart Walk every week. Based on the above, the researcher's hope is this research can be useful for heart failure's respondents.

Method

This study utilised Pra Eksperiment One Group Pretest–Postest Design. The study population are heart failure's patients who hospitalized and visit the heart polyclinic at RSUPN Dr. Cipto Mangunkusumo Hospital and RS. PGI Cikini Hospital, Jakarta. Fifty (50) respondents were picked as samples using purposive sampling with inclusion criteria are as follows: men and women over the age of 20 years, suffering from heart, were required to sign a written consent, visit the heart polyclinic, the respondents included hospitalised patients who were allowed by the doctor to go home and perform Home Heart Walk, did not experience any limitations or restrictions in running and have to be reachable by researchers by public transport in a distance of less than 30 KM of RSUPN Dr. Cipto Mangunkusumo's Hospital and PGI Cikini's Hospital in Jakarta.

Home Heart Walk is a structured self-monitoring intervention program that is used to monitor the physical functional capacity of heart failure's patients and combines between regular exercise and follow-up by phone. Home Heart Walk is a home-based activity intervention adopted on a Six Minute Walking Test (6MWT). The six minute walking test is chosen because it is simple, safe, cheap and has the ability to consider future data (Du et al., 2011).

Home Heart Walk's intervention was done once every two days within the period of 6 weeks. Every week, the researchers would come to the patients' domicile to administer the Home Heart Walk exercises and check the patients' blood pressure, pulse and respiratory rate, and degree of fatigue and record them as data to prevent contraindicative symptoms of Home Heart Walk. Researchers would also contact the patients on the phone to inquire about their progress of the Home Heart Walk exercises and the walking's distance accomplished by the patient.

After 6 weeks, the patients' blood pressure, pulse, respiratory rate, walking's distance and the degree of fatigue were taken and documented on the observational data sheets. The instruments used were blood tension meters, weight scales, height-measuring instruments, stopwatch, two small cones, a chair, a 5-meter rope, record the traveling distance achieved by the respondents and Home Heart Walk observation sheets.

Variables in this study, there are several variables that are independent variables, dependent variables, and confounding variables. Independent's variabel in this study: Home Heart Walk's intervention and dependent's variabel is fatigue's degree and confounding's variable are age, sex, Body Mass Index (BMI), heart failure classifications, systolic and diastolic blood pressure, pulse rate and walking's distance are important to examine because of these factors that affect fatigue. Confounding's variables not studied were the consumption of beta blocker drugs, anemia, symptoms of distress, depression and anxiety as it caused limitations of the sample in the study.

Data analysis includes univariate and bivariate. Univariate analysis was used to describe characteristics of respondents: age, sex, Body Mass Index (BMI), heart failure classifications, systolic and diastolic blood

pressure, pulse, respiratory rate, degree of fatigue and and walking distance. In contrast, bivariate analysis used wilxocon test for 2 different tests; spearman correlation test to analyze the relationship of age, IMT, systolic and diastolic blood pressure, pulse rate and walking distance on the degree of fatigue; two independent man whitney test to ascertain the relationship of the sex types and heart failure classifications on the degree of fatigue. The degree of fatigue was assessed according to the subjective data (The Modified Borg Scale) and objective data with observation respiratory rate, blood pressure and pulse rate (Heart Foundation, 2014; Crapo et al., 2002).

In nursing science, fatigue experience is said to be subjective data (DS) (Falk, 2007). DS by asking what is the scale of fatigue based on Modified The Brog Scale Percevied Excertion? to heart failure's patient (Heart Foundation, 2014; Crapo et al., 2002). Data Objective (DO) with calculating respiratory rate and observation pulse rate nad blood pressure. Normal respiratory rate 14-20x/ min (Black & Hawks, 2009). DO respiratory rate above 20 x/min indicates patients experiencing tachypnea or difficulty breathing rate (fatigue) (Heart Foundation, 2014; Lewis et al., 2011). The DS based on DO is matched to the Modified The Brog Scale Percevied Excertion (Heart Foundation, 2014; Crapo et al., 2002).

Result

Tabel 1 Characteristics of Respondents

No	Characteristics	F	%
1.	Age		
	26-45	8	16
	46-65	20	40
	Above 65	22	44
2.	Gender		
	Male	32	64
	Female	18	36
3.	BMI		
	Underweight (<18.5 Kg/m2)	3	6
	Normal (18.5-24.9 Kg/m2)	25	50
	Obese (>30 Kg/m2)	13	26
4.	Heart Failure Classification		
	Functional Class 2	38	76
	Functional Class 3	12	24

Tabel 2 Characteristics of Heart Disease

No	Variable	Before HHW Intervention		After HHW Intervention	
		Frequency	%	Frequency	%
1.	Systolic				
	Hypotension	1	2	0	0
	Normal	16	32	24	48
	Prehypertension	18	36	22	44
	Hypertension Stage 1	10	20	4	8
	Hypertension Stage 2	5	10	0	0
2.	Diastolic				
	Normal	19	38	24	48

	Prehypertension	20	40	21	42
	Hypertension Stage 1	8	16	5	10
	Hypertension Stage 2	3	6	0	0
3.	Pulse Rate				
	Bradycardi	5	10	0	0
	Normal	45	90	50	100
4.	Respiratory Rate				
	Normal	10	20	44	88
	Tachypnea	40	80	6	12
5.	Fatigue's				
	2 (Light Fatigue)	0	0	4	8
	3 (Medium Fatigue)	1	2	25	50
	4 (Medium Severe Fatigue)	14	28	20	40
	5 (Severe Fatigue)	26	52	1	2
	6 (Severe Fatigue)	7	14	0	0
	7 (Very Severe Fatigue)	2	4	0	0
6.	Walking Distance	202.44 meter		254.76 meter	

Tabel 3 Different Paired Test Results Fatigue's Degree Before HHW's Intervention and After HHW's Intervention

No	Variable	p Value
	Fatigue's Degree	
1.	Subjective Data (fatigue's degree)	0.000
2.	Objective Data (respiratory rate)	0.000

Tabel 4 Relationship of Confounding Variables on Fatigue Degree After Home Heart Walk Intervention

Variable	p-Value	r-Correlation
Age	0.301	r=0.149
Gender	0.808	r=-0.243
BMI	0.559	r=-0.085
Heart Failure Classification	0.318	r=-0.999
Systolic Blood Pressure	0.450	r=0.109
Diastolic Blood Pressure	0.407	r=0.120
Pulse Rate	0.339	r=-0.122
Respiratory rate	0.043	r=0.287
Walking Distance	0.127	r=-0.219

Tabel 5 Effect of Home Heart Walk on Fatigue and Differences in Fatigue's Degree Between Men and Women

Variable	p-Value	Mean Fatigue's Degree
Home Heart Walk	0.000	-
Male	-	25.14
Female	-	26.14

Tabel 6 Home Heart Walk Meaning Results Every Week

	Weeks 1 & 2	Weeks 3 & 4	Weeks 5 & 6
	Days 1 & 7	Days 15 & 21	Days 29 & 37
Subjective's data: fatigue's degree after Home Heart Walk	0.000	0.024	0.048
Objective data: respiratory rate after Home Heart Walk	0.118	0.029	0.029

1. Univariate Analysis

Based on Table 1, it was known that the majority of respondents were heart failure classification functional class 2 with 76%.

Based on Table 2, it was known that before Home Heart Walk intervention, the majority of pulse rate normally with 90%. After Home Heart Walk intervention, the majority of pulse rate, all respondents become normal with 100%.

2. Bivariate Analysis

The data tested is the subjective data degree of fatigue with the results modified the borg scale 0–10 and ordinal categorical data. Objective data with mean (x/min) and categorical data ratios.

Table 2 shows that statistically there is a difference in the fatigue's degree before and after the intervention Home Heart Walk, assessed on subjective data (Fatigue's degree) with a p-value of 0.000 (<0.05) and objective data (respiratory rate) with a p-value of 0.000 (<0.05).

From table 4 obtained statistically there is a significant relationship between respiratory rate and fatigue's degree with p-value 0.043 (<0.05) & r = 0.287. There was no significant relationship between age (p-value=0.301; r=0.149), gender (p-value=0.808; r=0.243), BMI (p-value=0.559; r=0.085), heart failure classification (p-value=0.318; r=-0.999), systolic blood pressure (p-value=0.450 & r=0.109), diastolic blood pressure (p-value=0.407 & r=0.120), pulse rate (p-value=0.399 & r=-0.122), walking distance (p-value=0.127 & r=-0.219) on fatigue's degree after Home Heart Walk intervention. The meaning of this data obtained respiratory rate has a significant relationship with fatigue's degree whereas when the respiratory rate increases then the fatigue is felt to increase. But if the respiratory rate decreases then the fatigue is felt to decrease. This is evidenced from the results of this study: before HHW intervention, respiratory rate tachyapne (80%) dan fatigue's degree on scale 5 (severe fatigue). After intervention HHW, respiratory rate normal (88%) and fatigue's degree on scale 3 (light fatigue)

In searching for the results of the effect Heart Heart Walk on fatigue's degree, the researchers used paired samples test taken from subjective data fatigue and objective data respiratory rate. In searching for different degrees between men and women, the researchers separated fatigue's degree male and female and then treated with the wilxocone test.

Table 5 obtained statistically there is an effect Home Heart Walk on fatigue's degree with p-value 0.000 (<0.05) and heart failure patient female feel more fatigue than male. The average value of fatigue felt by female is 26.14. The average fatigue value perceived by male is 25.14.

In searching for the results of Home

Heart Walk every week, researchers used the wilxocon test by including subjective data and objective data on weeks 1 and 2, weeks 3 and 4, and weeks 5 and 6

From table 6 analyzed first and seconds weeks (days 1 & 7), the patient felt a different fatigue's degree after the Heart Heart Walk's intervention with p-value 0.000 (<0.05) although in the objective data did not show any difference in respiratory rate after the Home Heart Walk's intervention with p-value 0.118 (> 0.05).

In the Third and Fourth weeks (day 15 and 21), the patient felt different fatigue's degree after the Heart Heart Walk intervention with a p-value of 0.024 (<0.05). This result is supported by objective data that is difference of respiratory rate after Heart Heart Walk intervention with p-value 0.029 (<0.05).

On fifth and sixth weeks (29th and 37th days), the patient felt different degrees of fatigue after the Heart Heart Walk intervention with a p-value of 0.048 (<0.05). This result is supported by objective data that is difference of respiratory rate after Heart Heart Walk intervention with p-value 0.029 (<0.05). Statistically concluded the meanings of Home Heart Walk in third and fouth weeks where the subjective data (fatigue's degree) with p-value 0.000 (<0.05) and the objective data with p-value 0.029.

Discussion

The effect of Home Heart Walk on the fatigue's degree among the heart failure patients was statistically proven to be significant. Researchers assume that the Home Heart Walk can reduce the fatigue's degree as it is a form of physical exercise that can improve cardiac output through increased cardiac contractility and improve ventricular pump performance so as to reduce shortness of breath & fatigue. Adequate cardiac output leads to increased oxygen to the tissues and the body can respond to energy formation. Increased oxygen and this energy can reduce fatigue felt by heart failure patients (Lewis et al., 2011; Smeltzer et al., 2010). Based on the results obtained statistically the relationship between respiratory rate to fatigue's degree where seen from pulse rate.

In heart failure's patient found typically respiratory rate exceeding 20 x/min and can cause shortness of breath. In heart failure's patients dilated ventricle which is the elongation of muscle fibers that increase the volume in the heart chamber. Dilatation causes an increase in preload and cardiac output because a muscle will be stretched will contract stronger. But dilation has its limitations as a compensation mechanism. Muscle fibers if stretched beyond a certain point will be ineffective. Dilated heart requires more oxygen. Hearts that are dilated with normal blood flow will experience oxygen deprivation. Hypoxia in the heart will reduce the ability of muscle contraction and the patient will be easy fatigue (Black & Hawks, 2009). Based on the above, it can be concluded that the higher the respiratory rate, the higher the degree of fatigue but the lower the respiratory rate, the lower the degree of fatigue.

From data confounding this research is age. The results obtained statistically that there is no significant relationship between age to fatigue's degree. According to the researchers, the results of this study occurred because of the lack of varied age of respondents who participated in this study in all categories and mostly in elderly people. Age affects the risk and severity of coronary heart disease. Age 20 or 30 years may occur angina and myocardial infarction. More coronary heart disease in people older than 40 years, 65 years or older (Black & Hawks, 2009). The results of this study are similar to the results of research conducted by Evangelista et al. (2008) of 150 patients with heart failure from the western medical center of the United States, there was no correlation between age to fatigue with p-value 0.67 (>0.05). Thus, age has no significant relationship to the fatigue's degree because cardiovascular disease and heart failure can be exposed to all types of age.

It was statistically found that there was no significant relationship between sex to fatigue's degree. According to the researchers, the results of this study occurred because of the lack of equality between men and women and mostly in male gender in this study. Coronary heart disease is the number

one killer in both sexes (male and female) in the United States. Males have a higher risk of having a heart attack at a younger age, which is smoking and hypertension. Menopausal women, taking oral contraceptives, smoking or hypertension, will be more likely to develop coronary heart disease (Lewis et al., 2011; Black & Hawks, 2009). The results of this study are similar to the results of the research conducted by Chen et al (2009) on 105 heart failure patients from three hospitals in North Taiwan, there was no correlation between sexes with fatigue with p-value 0.38 (>0,05). Thus, sex does not have a significant relationship on the fatigue's degree because heart disease, especially heart failure can be exposed to men and women.

The results obtained statistically there is no significant relationship between BMI to fatigue's degree. According to the researchers, the results of this study occurred because of less varied IMT respondents on all categories of BMI. Obesity IMT increases the extra burden of the heart and forces the heart to pump harder to deliver blood to the tissues. Obesity increases the risk of coronary heart disease because it is associated with elevated cholesterol, triglycerides, high blood pressure and diabetes (Lewis et al., 2011; Black & Hawks, 2009). The results of this study are similar to the results of research conducted by Fink et al. (2009) of 87 heart failure patient from two central medical centers in Chicago, there was no correlation between BMI on fatigue's degree with p-value>0.05. Thus, BMI has no significant association to the fatigue's degree because the more related to heart disease is increased cholesterol, triglycerides, high blood pressure and diabetes.

Based on the results obtained statistically there is no significant relationship between the classification of heart failure on the fatigue's degree. According to researchers, the Heart Heart Walk exercise improves ventricular pump performance and reduces the burden of myocardium resulting in increased cardiac output and reduced fatigue. Based on the theory, functional class II's classification indicates a mild limitation in physical activity and functional class III's classification indicates medium the limitation of physical activity. Regular aerobic exercise is done to improve ventricular pump performance, reduce myocardial burden and improve complaints and functional capacity. Thus, the functional class' s classification is not related to fatigue's degree because Home Heart Walk exercises can improve ventricular pump performance and reduce myocardial burden so that cardiac output increases and fatigue decreases.

From the results obtained statistically there is no significant relationship between systolic and diastolic blood pressure on fatigue's degree. According to researchers because Home Heart Walk exercise can improve ventricular pump performance and reduce the burden of myocardium so that cardiac output increases, blood pressure becomes stable and the fatigue's degree decreases. Based on the theory, heart failure decreased cardiac output resulting in decreased blood flow and oxygenation so that systolic and diastolic blood pressure became low (Smeltzer et al., 2010; Lewis et al., 2011). Heart failure patients are recommended for physical exercise because physical exercise can improve ventricular pump performance, contractility and improve hemodynamics (Black & Hawks, 2009). Thus, there is no significant association between systolic and diastolic blood pressure on fatigue's degree because home heart walk exercises can improve ventricular pump performance and reduce myocardial burden so that cardiac output increases and fatigue decreases.

Statistically, it was found that there was no significant relationship between pulse rate on the fatigue's degree. According to the researchers, heart rate's heart failure patient will be bradycardia, tachycardia or palpitations and Home Heart Walk exercises can increase cardiac output so that the pulse becomes stable. Based on the theory, heart failure's patient experienced a failure of ventricular compensation resulting in decreased cardiac output resulting in pulse rate will experience bradycardia or tachycardia or palpitations. Heart failure's patient are encouraged to follow a physical exercise rehabilitation program that can increase myocardial contractility and increase stroke volume and improve pulse rate (Ignatavicius

& Workman, 2013; Smeltzer et al., 2010; Black & Hawks, 2009). Thus, there is no significant association between pulse rate on the fatigue's degree because the Home Heart Walk exercise can increase cardiac output so that the pulse rate becomes stable and adequate oxygen intake in blood and fatigue is felt to be reduced.

The results obtained statistically there is no significant relationship between walking distance on fatigue's degree. According to the researchers, the results obtained walking distance is inversely proportional on the fatigue's degree obtained. The further walking distance during the Heart Heart Walk exercise, the ventricular pump performance gets stronger, oxygen increases and fatigue decreases. The researchers' assumptions are supported by the results of this research conducted by the researchers themselves where during the first Home Heart Walk exercise, the fatigue's degree that was felt on the scale of 5 (fatigue in the heavy stage) and the walking distance was only 202.44 meters. After six weeks of Heart Heart Walk exercise, fatigue degree's scale 3 (medium stage fatigue) with 254.76 meter distance. Thus, the result of the walking distance is inversely proportional on fatigue's degree where the greater the distance, the less the fatigue is felt.

Based on the results obtained statistically the meaning of Home Heart Walk every week. Based on the results obtained statistically the meaning of Home Heart Walk every week. The results showed the first and second weeks, the fatigue's degree (subjective data) is significant where the patient feels the suggestion or feeling has recovered from the fatigue's degree although the objective data has not shown cure (not significant) where there has been no decrease in respiratory rate. The Heart Walk Walk exercises are most effective starting in the third and fourth weeks to decrease the fatigue's degree. In the Home Heart Walk journal is held for 9 months (Du et al., 2011). But according to researchers, Home Heart Walk may be done at least six weeks in order to get quick results and useful for respondents in reducing the fatigue's degree.

Statistically obtained heart failure's patient women feel more fatigue than men. The average value of fatigue felt by women is 26.14. The average fatigue value perceived by males is 25.14. According to researchers, this result occurs because women more easily describe the fatigue than men. The results of this study are similar to the results of research conducted by Tang, Yu, and Yeh (2009) on 107 patients with heart failure in the central medical center of North Taiwan, got the average fatigue value felt by women (226.64) higher than the perceived fatigue by men (203.05). Based on the theory, heart failure patient's female sex more feel fatigue because women more easily expose the physical symptoms of weakness in the complaints of fatigue than men (Tang, Yu, & Yeh, 2009). Women tell more about fatigue than chest pain. Easily tired during light activity is a sign and symptom of decreased cardiac output or heart failure (Black & Hawks, 2009). Thus, women more easily expressed fatigue than men.

The results of this study found that heart failure's patients who were taught (teaching) and given support (supportive) Heart Heart Walk exercise proved to overcome fatigue. The final result of the implications of nursing action Self care orem for nurses to teach (teaching) health education through Home Heart Walk exercise and support (supportive) Heart Heart Walk exercise with independent and routine so that the role of nurses to be minimal, the role of patients maximum (independent).

Conclusion

Home Heart Walk exercise was proven to be effect for reducing the fatigue's degree among the heart failure patients for six weeks especially the fatigue degree declined in particular after the third and fourth weeks. Researchers proposed the continuous development of the study by comparing the effectiveness of the Home Heart Walk when done every day, once every 2 days, and once a week on the fatigue's degree among heart failure patients with a control group. The study suggestions to contribute to the development of nursing services in all

hospitals where nurses can obtain knowledge about the physical activity therapy known as Home Heart Walk. Nurses are to teach the Home Heart Walk exercise and motivate heart failure's patient to do the exercises at home on a regular basis. The research also advocates that educational institutions should incorporate the research results as their teaching materials. Research also suggests that the respondents implement and carry on doing Heart Walk Home exercises every two days at home independently.

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