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The Phase Effect of Exercise I Heart Rehabilitation on Self-Care and Patient Life Quality with Coronary Heart Disease over PGI Cikini Hospital 2017

Yannerith Chintya[1,*], Risma Yuniarlina[1], Wilhelmus Hary Susilo[2]
[1]*Department of Nursing STIK Sint Carolus, Jl. Salemba Raya, Jakarta, 10440, Indonesia*
[2]*UPI Management Department YAI, Jl. Diponegoro No. 74 Jakarta, Indonesia*

The Phase I Heart Rehabilitation Exercise it's one of an efforts to achieve functional level to allows patients on conduct their initial activities such as in preparation for carrying out daily activities at home also for prevention of adverse effects '*deconditions*' due to prolonged bed rest. This study, we conducted coronary heart disease which is generally given to a total bed rest during heart rehabilitation training phase I and exercise. Thus, this study aims to determine the cardiac effect in rehabilitation training phase I on self-care and patients life quality with coronary heart disease, using quasi experimental method with pretest-posttest control group. Here, we take 81 respondents of coronary heart disease in a stable state condition. The results showed that the first phase of cardiac rehabilitation exercises is significantly affected over self-care *(p = 0,000)* while the quality of life *(p = 0,000)* is increased with odds ratio three times and improved quality of life with odds ratio four times. The iIntervention group compared with control group. Based our study, the Phase I heart rehabilitation exercises is recommended for stable coronary heart disease.

Keywords: *Coronary heart disease, Phase I heart rehabilitation, Self-care, and Quality of life.*

1. INTRODUCTION

Cardiovascular disease is a major cause of death in the United States of which is 17.3 million people (48%) [1]. The prevalence of coronary heart disease in Indonesia amounted to 0.5% and the prevalence of coronary heart disease based on a doctor diagnosed DKI Jakarta 0.7% [2]. The heart disease is the number one cause of death in the world and 60% of all causes of death of heart disease is ischemic heart disease with 30% of deaths worldwide caused by heart disease [3]. The coronary heart disease person is experienced a decrease in cardiac output that causes hypoxia tissue and slows down the disposal of metabolic waste which ultimately leads to patients easily tired [4]. A fatigue leads to decrease in physical activity in patient needs to physical exercise routine can be independently with coronary heart disease patients with stable state to be tolerant to exercise physical activity [5]. The regular physical activity exercises can be reduced 50% of deaths caused by heart disease, lowering 25% heart attack and lower blood pressure [6].

The European Association on cardiovascular in prevention and rehabilitation has recommendation that In-patient cardiac rehabilitation should begin as soon as possible after admission, medical management of patients with coronary heart disease has progressed rapidly reduce or eliminate the three physical problems experienced by coronary heart disease patients, after the acute condition of the patient is resolved and the hemodynamic status is stable, it is recommended to follow the recovery program through cardiac rehabilitation program in order to restore

[*]*Email Address: yanne.poerba@gmail.com*

the physical, mental and social conditions of the patient so as to achieve the ability of self to run activities at home and in the environment independently [7]. The self-care greatly improves the quality of treatment that can reduce mortality associated with heart disease [8]. The self care activities can be encourage by patients toward maintaining health, well-being, enhancing individual adaptation, reducing morbidity, disability, the cost of treatment and reduce the symptoms of complications from the disease. The cardiac rehabilitation exercises in patients with heart disorders is a multi-phase program designed to restore heart disorders, especially coronary heart vascular disorders and patients are trained in order to re-run life in an optimal and productive [9]. Thus, the cardiac rehabilitation exercises have a core components that should be incorporated into each program. The cardiac rehabilitation exercises can improve the quality of life in heart patients especially in adulthood, women and the elderly because they benefit greatly in quality of life [10]. In PGI Cikini Hospital, Phase I rehabilitation training for exercise activity has no protocol, the nurse in the room gives general mobilization because not yet know about this exercise, the nurse also cooperate with doctor responsible in management of patient mobilization. In practice, the nurse still thinks that the exercise of activity and patient mobilization is done when the patient is in stable condition and it is possible to conduct daily living activity (ADL) independently with monitoring from the nurse. The Phase I Heart Rehabilitation Program uses educational and support planning that is a key component of Orem's Theory that is effective in correcting patient adaptation to illness. Patients should be able to manage themselves independently in connection with the condition of the illness by knowing the signs and symptoms, risk factors for coronary heart disease and how to manage the prevention of coronary heart disease.

2. METHODOLOGY

In order to achieve the result, we used quasi experimental design in pretest-posttest control group. The correspondent in this study is 81 patients while the consisted of intervention group 61 respondents and control group of 20 respondents over PGI Cikini Hospital. The survey data was conducted from April 2017 to June 2017. Here, a criteria consist of patients with stable conditions with coronary heart disease is undergoing hospitalization, compos mentis consciousness, patients with systolic blood pressure interval: 110-160 mmHg and diastolic: 70-90 mmHg, pulse 60-100 x / min (collaboration with doctor in charge of patient), patient no chest pain, no shortness of breath, patient not treated for 5 days due to going home in stable condition and the patient was able to do cardiac phase rehabilitation exercises I (Coordination with doctors cardiology), patients are able to read and write. Thus, to collect a survey data is consists Exercise of Self-Care Agency Scale (ESCAS) from standart qusionary [11]. Here, we proposed 15 statements and a questionnaire from Macnew Myocardial Infarction Quality of Life (see Table 1).

Table 1. Phase I Heart Rehabilitation Exercise

Level I (When Entry-Bed Rest Total), done Relaxation Technique, Exercise breath in, Exercise range of active motion (movement of ankle and wrist) done 5 times in 3 times a day.
Level II (Bed Rest Part-Day 1 & 2)
a. Sit down (1-2 hours / day) and eat alone, do relaxation techniques, deep breathing exercises, exercises range of motion active hip and knee performed 5 times repetition for 3 times a day, stretching 5 times repetition for 3 times a day.
b. Level 2 (a) the progress of sitting time (3-4 hours / day) Toileting beside the bed, heel-lifting position, tightening position of the spine (do not hold your breath), spinal extension still done 5 times repetition for 3 times a day.
Level 3 (activity increase - Days 3 & 5)
a. Stop relaxation exercises
Level 2 (b) - exercise progress for 10 repetitions: Walking indoors (3 times a day), Standing-flexibility of the upper limb (5 repetitions in 3 times a day).
b. Level 3 (a)
Standing-walking-flexion of the lower extremities (5 repetitions in 3 times a day), step-standing-flexi the hips and knees (5 repetitions in 3 times a day), walk outside the room (3 times a day).
c. Level 3 (b)
Standing in the corner of the room with your elbows twirling, walking outside the room by swinging your arms, climbing the steps one by one.

3. RESULT AND DISCUSSION

In order to obtain the result, we analyze characterization from respondent. Based on the above table characteristics of respondents at age 55-65 years (71.6%) in Table 2. Gender in male (59.3%) and female (40.7%). Self-care characteristics before intervention were low (85.2%) and after self-care intervention was very high (61.7%). Quality of life before intervention was low (87.7%) and after intervention the quality of life was very high (63%).

Table 2. Respondent Characteristics

Group	Total	
	N	%
Age		
46-55 years old (Initial Elderly)	18	22.2
56-65 years old (Elderly)	58	71.6
Gender		
Male	48	59.3
Female	33	40.7
***Self-Care* before intervention**		
0-25% (Very Low)	12	14.8
26-50% (Low)	69	85.2
***Self-Care* after intervention**		
26-50% (Low)	17	21
76-100% (Very High)	50	61.7
Quality of Life before intervention		
0-25% (Very Low)	10	12.3
26-50% (Low)	71	87.7
Quality of Life after intervention		
26-50% (Low)	15	18.5
76-100% (Very High)	51	63

The percentage of self-care before intervention is low (90.2%) and after self-care intervention was very high (82%). A quality of life before intervention it's low near (90.2%) while after intervention the quality of life is higest near (83.6%) in Table 3.

Table 3. Results of the Differential Test of Self-Care Level and Quality of Life Pre and Post Intervention

Group	Pre Intervention		Post Intervention		*P Value*
	N	%	N	%	
Self-Care					
0-25% (Very Low)	6	9.8	0	0	
26-50% (Low)	55	90.2	0	0	0.000
51-75% (High)	0	0	11	18	
76-100% (Very High)	0	0	50	82	
Quality of Life					
0-25% (Very Low)	6	9.8	0	0	
26-50% (Low)	55	90.2	0	0	0.000
51-75% (High)	0	0	10	16.4	
76-100% (Very High)	0	0	51	83.6	

The percentage of patients with coronary heart disease after self-care intervention was very high (82%) compared with low control group (85%). The percentage of patients with coronary heart disease after a very high quality of life intervention (83.6%) compared with low control group (75%) in Table 4.

Table 4. Results of the Differential Test of Self-Care Level and Quality of Life Intervention and Control Group

Group	Intervention		Control		*P Value*
	N	%	N	%	
Self-Care					
0-25% (Very Low)	0	0	3	15	
26-50% (Low)	0	0	17	85	0.000
51-75% (High)	11	18	0	0	
76-100% (Very High)	50	82	0	0	
Quality of Life					
0-25% (Very Low)	0	0	5	25	
26-50% (Low)	0	0	15	75	0.000
51-75% (High)	10	16.4	0	0	
76-100% (Very High)	51	83.6	0	0	

Table 5 shows a statistically concluded that the intervention of Phase I Heart Rehabilitation training p = 0.000 (<0.05) gave significant influence to the change of self-care of coronary heart disease patients, while age and gender p => 0.05 did not give significant effect to self-care patients with coronary heart disease.

Table 5. Parameters Estimates Independent Variable Against Self-Care at Intervention of Phase I Heart Rehabilitation Exercise

Parameters Estimates			
Independen Variables	***Estimates***	**Df**	**Sig.**
[Result*SelfCarePost* = 1,00]	- 1.992	1	.299
[Result*SelfCarePost* = 2,00]	1.227	1	.510
[Result*SelfCarePost* = 3,00]	3.492	1	.088
Age	-.008	1	.784
Gender	.198	1	.684
Phase I Heart Rehabilitation Exercise	**5.301**	1	**.000**

Here, we analyze using statistically with concluded that the intervention of Phase I Heart Rehabilitation training p = 0.000 (<0.05) had a significant effect on the quality of life of patients with coronary heart disease, while age and gender p => 0.05 did not significantly influence the quality of life of patients coronary heart in (see table 6).

Table 6. Parameters Estimates Independent Variables On Quality Of Life At Intervention Phase I Heart Rehabilitation Exercise

Parameters Estimates			
Independen Variables	***Estimates***	**Df**	**Sig.**
[ResultQualityofLifePost = 1,00]	.251	1	.890
[ResultQualityofLifePost = 2,00]	2.903	1	.127
[ResultQualityofLifePost = 3,00]	5.087	1	.015
Age	.021	1	.487
Gender	.204	1	.671
Phase I Heart Rehabilitation Exercise	**5.326**	1	**.000**

Based on calculation result, Patients with coronary heart disease were at the end of the elderly (56-65 years) (71.6%). The reveals that the increase in morbidity and mortality rate in coronary heart disease is caused by age. Coronary heart disease is a primary disease, about 6% - 10% occurs in the late elderly who are over 65 years old. Age is a risk factor for coronary heart disease where increasing age increases the risk of coronary heart disease. The older the age the more likely the occurrence of plaque attached to the blood vessel wall and cause the occurrence of blood flow disruption in blood. Age can alter the shape and function of the vascular due to acetylcholine in the endothelium of the blood vessels decreases due to the aging process as well as trigger this interruption of coronary blood flow.

Furthermore, a sex risk factors in the majority of respondents were 48 people (59.3%). The results of the Lubna SR study (2014) suggest that coronary heart disease is more commonly experienced by males each year, a high risk factor for coronary heart disease is smoking which is a male habit, the presence of elevated cholesterol levels in the blood and accompanying diseases of hypertension, diabetes mellitus. The population aged 10 years and above based on smoking habit found that more men who smoke every day compared with women. Here, the intervention of Phase I Heart Rehabilitation Exercise as one of the nursing interventions that cooperate with multidiscipline that is doctor of cardiology, which aims to increase the independence of patient in facing the disease, so that very low self-care becomes very high. The results of this study explains that cardiac rehabilitation exercises allow patients to control disease, prevent complications, reduce hospitalization and reduce the cost of treatment and improve the quality of life of patients with cardiac rehabilitation interventions can transform self-care into healthy lifestyle habits that minimize risk factors for coronary heart disease. Self-care

of this orem theory aims to train the independence of patients in self-care in order to maintain their health. In the application of this theory the relationship of age and sex to self-care is not significant, patients are involved in care which is a must, to avoid readmission, to prevent complications that affect the patient's psyche. Here, a nurses treating patients with coronary heart disease should provide health education on weight management, diet, medication adherence, sleep patterns, daily exercise activities and also encourage self-care use to improve wellbeing.

Thus, in phase I heart rehabilitation exercises can have a self-sustaining effect that aims to improve the quality of life of coronary heart disease patients. The results of this study were supported by Antonakoudis, (2006) on the importance of cardiac rehabilitation training in reducing the number of cardiac events and inpatient care, increasing family support, increasing physical activity and patient comfort in performing their activities. All this improves psychological stability and improves the patient's confidence. The measuring quality of life after cardiac rehabilitation interventions is very important that it makes life worthy or as an individual's ability to function and gain satisfaction from various roles in everyday life. In addition, the comprehensive cardiac rehabilitation training interventions not only improve physical and physiological status heart patients but also affect their psychological condition and reduce risk factors for mortality and cardiovascular disease (CAD) that can improve their lifestyle. Based on data statistically age and sex did not significantly affect the quality of life of patients with coronary heart disease. Here, we explained that nursing steps such as conducive cardiac rehabilitation exercises can lead to improved patient condition and patient quality of life. Higher mortality and disability rates are found in patients with acute myocardial infarction, but early cardiac rehabilitation exercises can improve the patient's quality of life to some extent, because patients with myocardial infarction with long-term bed rest are highly susceptible to venous thrombosis and are not conducive to functional recovery heart.

Thus, in phase I heart rehabilitation exercises with functional exercise guidelines in patients, promoting the patient heal as soon as possible, and can reduce prolonged complications such as angina, arrhythmias, heart failure, relieve patient fatigue, improve patient self-care abilities. Exercise Early cardiac rehabilitation is very important for patients with coronary heart disease, as it can improve self-care and quality of life, improve patient satisfaction and improve patient condition.

5. CONCLUSION

Characteristics of the majority of respondents: age range 56-65 years, male sex. There was a significant change in the intervention of the Phase I heart rehabilitation training on self-care and the quality of life of coronary heart patients who received intervention in Phase I heart rehabilitation exercises. Phase I Heart Rehabilitation Training had a significant effect on improving self-care and quality of life, sex has no effect on self-care and quality of life.

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