

Physical Activity on Coronary Heart Disease Patients

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ABSTRACT

Lack of physical activity is associated with weight gain, being overweight and obesity which are the main factors causing modern diseases such as coronary heart disease. It is estimated that during the last 15 years, 8.7 million of the world's population have died from coronary heart disease, an increase of 12.2% from 2000. Regular physical activity can reduce the risk of morbidity and mortality of all risks of cardiovascular disease including coronary heart disease. This study aims to describe physical activity in patients with coronary heart disease. The research design used in this study is descriptive with a retrospective approach. The population in this study were all patients with coronary heart disease at Cardiology Departement in Hospital Dr. Wahidin Sudiro Husodo for the period July 2018. The sample size was 102 respondents using Consecutive Sampling techniques. This research was conducted on 2-14 July 2018. The results of this study indicate that almost half of respondents with low intensity of physical activity were 50 people (49.0%)

Keyword: *Physical Activity, Coronary Heart Disease*

INTRODUCTION

Coronary Heart Disease (CHD) is one of non-infectious diseases in the world spotlight for being the highest cause of death in the world. The disease is associated with lifestyle changes along with the progress and development of the times. Increased mortality due to coronary heart disease is caused by a number of factors influencing risk due to changes in lifestyle (Zahrawardani, Herlambang, & Anggraheny, 2013). According to WHO, coronary heart disease in the list of 10 causes of death in the world and is ranked as the world's leading cause of death more than for stroke. It is estimated that over the last 15 years 8.7 million people worldwide die from coronary heart disease, an increase of more than 10% in the amount of 1.9 million (12.2%) of 2000 which amounted to 6.8 million people (World Health Organization, 2015).

WHO estimates that result from the lack of physical activity as a cause of some diseases such as breast and colon cancers (21-25%), diabetes (27%), and ischemic heart disease (30%) (World Health Organization, 2011). Physical activity can strengthen the endothelium and cardiac muscle. Physical activity done regularly can reduce 20-30% lower risk of coronary heart disease (Sattelmair et al., 2012).

By doing regular physical activity was able to reduce the risk of morbidity and mortality all the risks of cardiovascular disease including CAD is evident from the results of several peneltian already done. Based on the results of research by Tamosiunas, shows that physical activity can reduce the risk of morbidity and mortality from CHD by 25% and

21% in males and females (Tamosiunas, Luksiene, & Baceviciene, 2014). Other research by Li and Siegrist (2012), also showed a similar case, where a decrease in the risk of CHD in men more than in women (Li & Siegrist, 2012). Physical activity with categories of moderate to high intensity levels can reduce the risk of all cardiovascular diseases, including coronary heart disease. By controlling variable body mass index, hypertension and diabetes mellitus status decrease the risk by 27% and 41% (Mora, Cook, Buring, Ridker, & Lee, 2007). Nevertheless mechanisms of CHD risk reduction depends on the intensity of physical activity, such as the adequacy of day and type of physical activity (Carnethon, 2010).

Based on the results of Health Research (Risikesdas) in 2013, the prevalence of CHD according to the results interview the doctor diagnosed at 0.5%, and based on the doctor's diagnosis and / or symptoms of 1.5% (Risikesdas, 2013), Based on the diagnosis / symptoms, the estimated number of people with coronary heart disease are highest in East Java province as many as 375.127 people (1.3%) (Infodatin Heart Health Situation, 2014). Data from 2013 show that the proportion Risikesdas physical activity was classified as less active in general is 26.1 per cent. There are 22 provinces with a population of relatively less active physical activity is above the average Indonesian. The proportion of the population of Indonesia with sedentary behavior ≥ 6 hours per day of 24.1 percent. Five provinces are Riau above the national average (39.1%), North Maluku (34.5%), East Java (33.9%), West Java (33.0%), and Gorontalo (31.5%) (Risikesdas, 2013). Results of a preliminary study on February 19, 2018 at Cardiology Departement Hospital Dr. Wahidin Sudiro Husodo Mojokerto against 10 respondents with coronary heart disease on physical activity and before the stated CHD using a questionnaire of physical activity results, the categories of intensity of physical activity weigh as much as one person (10%), the category of the intensity of physical activity were as many as 3 people (30%), and the category of low-intensity physical activity as much as 6 people (60%).

Lack of physical activity has a major impact on health. Less physical activity is associated with weight gain, overweight and obesity is a major factor of modern diseases such as coronary heart disease or diabetes mellitus type 2 (Reiner, Niermann, Jekauc, & Woll, 2013). Substantially, perform regular physical activity can reduce the risk of CHD by improving heart health and blood vessels. Physical inactivity may affect the mechanism of the body's metabolism and lower levels of high-density lipoprotein (HDL) and can increase levels of LDL (low-density lipoprotein) in the body, lowering the glucose metabolism by decreasing insulin sensitivity, and increase levels of excess fat and high blood pressure (Reddigan, Ardern, Riddell, and Kuk, 2011). By doing regular physical activity is an attempt to lower the risk factors of non-communicable diseases, including coronary heart disease. Thus indirectly decrease morbidity and mortality from CHD.

For ages 18-64 years of WHO recommend should perform physical activity in a week at least 150 minutes of moderate intensity or 75 minutes with heavy intensity. In addition to improving physical health, adults should increase the duration of moderate-intensity physical activity to 300 minutes per week (World Health Organization, 2011). When someone is doing regular physical activity and in accordance with the

recommendation will give effect to the health of the body and can reduce the risk factor of some diseases, especially coronary heart disease.

METHOD

The research design used in this research is descriptive and retrospective approach. The population in this study were all patients with coronary heart disease at the Cardiology Departement Hospital Dr. Wahidin Sudiro Husodo Mojokerto period in July 2018. Large sample of 102 respondents using consecutive sampling technique. The research was conducted on 2-14 July 2018

The variable in this study is physical activity in patients with coronary heart disease. This study uses the instrument in the form of physical activity questionnaires from WHO (2012), namely Global Physical Activity questionnaire (GPAQ) by measuring the score of MET (metabolic equivalent) on the type of physical activity and weight is being carried out by the individual.

FINDING AND DISCUSSION

Table 1 Characteristics of respondents by age

Age	Frequency	Percentage (%)
30-39 years	2	2.0
40-49 years	29	28.4
50-59 years	37	36.3
60-69 years	31	30.4
> 70 years	3	2.9
Total	102	100

Source: Primary Data, 2018

Table 1 shows that nearly half of respondents classified as aged 50-59 years (36.3%).

Table 2 Characteristics of respondents by sex

Gender	Frequency	Percentage (%)
Male	46	45.1
Female	56	54.9
Total	102	100

Source: Primary Data, 2018

Table 2 shows that most of the respondents were female (54.9%).

Table 3 Characteristics of respondents by last education

Last education	Frequency	Percentage (%)
No school	5	4.9
Elementary School	34	33.3
Junior High School	30	29.4
Senior High School	26	25.5
College	7	6.9
Total	102	100

Source: Primary Data, 2018

Table 3 shows that nearly half of respondents last is elementary education (33.3%).

Table 4 Characteristics of respondents by job

Work	Frequency	Percentage (%)
Does not work	1	1.0
Housewife	27	26.5
Employee	40	39.2
Entrepreneur	28	27.5
Civil Servant	6	5.9
Total	102	100

Source: Primary Data, 2018

Table 4 shows that nearly half of respondents have employee (39.2%).

Table 5 Physical Activity

Physical activity	Frequency	Percentage (%)
High	15	14.7
Moderate	37	36.3
Low	50	49.0
Total	102	100

Source: Primary Data, 2018

Table 5 shows that almost half of the respondents with lower levels of physical activity (49.0%)

DISCUSSION

Physical Activity in Patients with Coronary Heart Disease in Cardiology Departement Hospital Dr. Wahidin Sudiro Husodo Mojokerto on 2-14 July 2018.

Research results in Table 5 shows that almost half of the respondents with lower levels of physical activity as much as 50 people (49.0%). Physical activity is any bodily movement produced by skeletal muscles that requires energy expenditure. No physical activity (physical inactivity) is an independent risk factor for chronic diseases, and overall is estimated to cause the deaths globally (World Health Organization, 2011). Physical activity

was measured using the Global Physical Activity Questionnaire (GPAQ) in 2012 to measure the score MET (metabolic equivalent) on the type of physical activity and weight is being carried out by the individual. MET is used to express the intensity of physical activity. MET is the ratio of a person who works with the metabolic rate relative to resting metabolism. One MET is defined as the energy used to sit still, equivalent to the consumption of 1 calorie / kg / hour. The results are consistent with previous research conducted by (Mora, Cook, Buring, Ridker, & Lee, 2007), which shows the proportion of low physical activity is the most substantial proportion or approximately 50% of the study sample only a low physical activity. This is because the physical activity of moderate and high is the level of physical activity done regularly and already meet or exceed the minimum score of 600 MET. Medium and high physical activity tends to give a protective effect against CHD compared to individuals with no physical activity or physical beraktivitas below adequacy (<600 MET) (Li & Siegrist, 2012; Mora et al., 2007; Sofi & Cesari, 2008). Less physical activity is associated with weight gain, overweight and obesity is a major factor of modern diseases such as coronary heart disease or diabetes mellitus type 2 (Reiner, Niermann, Jekauc, & Woll, 2013) Substantially, perform regular physical activity can reduce the risk of CHD by improving heart health and blood vessels. Physical inactivity may affect the mechanism of the body's metabolism and lower levels of high-density lipoprotein (HDL) and can increase levels of LDL (low-density lipoprotein) in the body, lowering the glucose metabolism by decreasing insulin sensitivity, and increase levels of excess fat and high blood pressure (Reddigan, Ardern, Riddell, and Kuk, 2011). Physical activity can reduce the risk of coronary heart disease by 41% (HR 0:59 95% CI 0.49-0.71) (Mora, Cook, Buring, Ridker, & Lee, 2007). Coronary heart disease is a general term for the buildup of plaque in heart arteries that can cause heart attacks buildup of plaque in the coronary arteries is called atherosclerosis (American Heart Association, 2013),

Lower levels of physical activity is a MET score of less than 600, or does not meet the adequacy standard score of at least moderate physical activity and / or high physical activity. Lack of physical activity can reduce levels of HDL cholesterol that can increase the risk of coronary heart disease. Enough physical activity can improve lung function and oxygen delivery to the myocardium, lose weight triglycerides and blood sugar levels in people with diabetes, lowering blood pressure, and improve physical fitness. As in the table are the respondents with high physical activity (14.7%) but remains affected by coronary heart disease that is caused by various factors aside from the lack of physical activity as a factor that is not biased changed are age, gender, family history and ethnicity. To get rid of various diseases such as CHD, WHO provides recommendations for the age of 18-64 years to do physical activity in a week at least selama150 minutes of moderate intensity or 75 minutes with heavy intensity. In addition to improving physical health, adults should increase the duration of moderate-intensity physical activity to 300 minutes per week.

CONCLUSION

In this study it can be concluded that 49% of patients with Coronary Heart Disease in Cardiology Department Hospital Dr. Wahidin Sudiro Husodo Mojokerto included in the lower levels of physical activity. Physical activity can improve glucose metabolism by increasing insulin sensitivity, burn excess fat and reduce high blood pressure so as to reduce the risk of occurrence of coronary heart disease.

In order to reproduce doing enough physical activity so as to avoid the modern diseases such as coronary heart disease. Expand to conduct outreach activities and to promote the importance and benefits of physical activity sufficient as part of prevention of coronary heart disease and other diseases that can arise due to physical inactivity

It is hoped that further research done by the number of respondents who more and add some variables that might affect the physical activity levels with the incidence of Coronary Heart Disease

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