EARLY DETECTION OF CORONARY HEART DISEASE RISK FACTORS AMONG PEOPLE IN HEGARMANAH, JATINANGOR

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ABSTRACT
Coronary Heart Disease is the leading cause of death and disability worldwide. More than a million (0.5%) of total population in Indonesia and approximately 227,364 (0.5%) of people in West Java Province of Indonesia were diagnosed with coronary heart disease (CHD) in 2013. These statistics highlight the importance of research in this group of patients. There are many factors that can lead a person to experience CHD. The risk factors of CHD including obesity, cholesterol, blood pressure, and blood glucose level, stress, lack of exercise and smoking. Monitoring the risk factors of a cardiac event is a critical element to prevent coronary heart disease. Therefore, this study was conducted for early detection of coronary heart disease risk factors among people in Hegarmanah, Jatinangor. This descriptive study aimed to describe coronary heart disease risk factors among people in Hegarmanah, Jatinangor. The data was obtained by asking the participants related exercise, diet and smoking. The clinical outcomes assessed in this study consisted of blood pressure (BP), cholesterol, blood glucose, and body mass index (BMI). The results showed that most of the respondent had not obey a healthy diet (88%). The majority of the respondents had abnormal score on BMI (56%), cholesterol level (69%) and blood pressure (78%). The majority of respondent showed a normal level of blood glucose (78%) and did not smoke (81%). The majority of respondents used to perform exercise. This study can be concluded that most of the respondents have the risk factors of CHD. Therefore, the risk factors of CHD should be concerned as part of cardiac prevention and need further research on patients’ knowledge on risk factor management.

Keywords: Early detection, Heart disease

I. Introduction
Coronary Heart Disease is the leading cause of death and disability globally. An estimated 7.4 million people died due to coronary heart disease in 2015. Over three quarters of CVD deaths take place in low and middle income countries such as Indonesia. (1) More than a million (0.5%) of total population in Indonesia and approximately 227,364 (0.5%) of people in West Java Province of Indonesia were diagnosed with coronary heart disease (CHD) in 2013. (2) These statistics highlight the importance of research in this group of patients.

Monitoring the risk factors of a cardiac event is a critical element to prevent coronary heart disease. Coronary heart disease risk factors are conditions or habits that raise a person more likely to develop a CHD and heart attack or worsen the existing disease. There are many factors that can lead a person to experience CHD. The risk factors of CHD including overweight and obesity, high blood cholesterol, hypertension, and diabetes, stress, unhealthy diet, lack of physical activity and smoking. (3) The number of CHD risk that a
A person has, increases severity of cardiovascular disease. Many people do not realize that they have heart disease until they have chest pain (angina or a heart attack). People with cardiovascular disease or who are at high cardiovascular risk need early detection and management as appropriate. Therefore, this study was conducted for early detection of coronary heart disease risk factors among people in Hegarmanah, Jatinangor.

II. Method
The sample of this study consisted of 59 participants who live at Hegarmanah, Jatinangor. The participants who met the inclusion criteria were approached to ascertain his/her willingness to participate in the study. The inclusion criteria were: (1) age >18 years; (2) have no cognitive impairment; (3) agree to participate in the study; (4) be able to communicate in Indonesian language.

A. Instrument
The instruments used to collect data in this study were the Demographic Data and Health Related Questionnaire. The clinical outcomes assessed in this study consisted of blood pressure (BP), total cholesterol, fasting blood glucose, and body mass index (BMI). BP was measured by a mercury sphygmomanometer as recommended by the AHA as the gold standard for clinical measurement of blood pressure. Blood glucose and total cholesterol were measured using finger test. BMI was calculated by measuring the height and the weight. Body weight was measured using digital weight scale. The same devices were used to measure the clinical outcomes for all the respondents in this study.

B. Data Collection
The sample of this study was recruited from the people who live at Hegarmanah, Jatinangor using accidental sampling. The clinical outcomes that were assessed in this study: were blood pressure, blood glucose, cholesterol, and BMI. BP was measured by a mercury sphygmomanometer. (4). The procedures for measuring the blood glucose and cholesterol include several steps. In order to get an accurate value of blood glucose and cholesterol levels, the respondents were instructed to take nothing orally for 12 hours before the test. BMI was calculated by measuring the height and the weight of the respondents without shoes, wearing light clothing, and with empty bladder. Moreover, the respondents were interview related diet and daily physical activity.

C. Data Analysis
Data were analyzed using descriptive statistics. Descriptive statistics were used to describe characteristics of the sample by using frequency, percentage, and standard deviation.

III. Results

CORONARY HEART DISEASE RISK FACTORS
The majority of the respondents had abnormal score on blood pressure (78%), cholesterol level (69%), and BMI (56%). The results showed that most of the respondent had not obey a healthy diet (88%). The majority of respondent showed a normal level of blood glucose (78%) and did not smoke (81%). The majority of respondents used to perform physical activity.

**IV. Discussion**

The outcomes investigated in this study were considered as CHD modifiable risk factors that consisted of blood pressure, fasting blood glucose, total cholesterol, BMI, smoking behaviour, and physical activity. The majority of the participants in this study were reported had hypertension. Hypertension was defined as systolic blood pressure > 140mmHg or diastolic blood pressure > 90mmHg. High blood pressure (BP) plays a role in CHD risk. The AHA has identified untreated BP for adults aged more than 20 years as one of the seven components of ideal cardiovascular health. Hypertension contributed to a greater extent 29.0% in woman compared with 14.9% in men. Women are more prone to have hypertension compared to men. Women who have blood pressure higher than 120/80 mmHg are at increased risk for CHD.

The majority of the participants in the present study had hypercholesterolemia. Hypercholesterolemia was defined as total cholesterol > 200mg/dL. Abnormal lipids is the prominent risk factor for CVD with respect to both young and old individuals. Cholesterol travels in the bloodstream in small packages called lipoproteins. A woman's risk for CHD increases if she has a total cholesterol level greater than 200 mg/dL. During the period from 1999 to 2006, 26.0% of adults had hypercholesterolemia. Hariadi and Ali reported that DM, hypertension, and dyslipidemia are risk factors of coronary artery disease. It was suggested that these risk factors could be decreased by controlling the body weight and performing regular exercise.

The majority of the participants in this study were considered overweight and obese. Overweight and obesity are determined by body mass index (BMI) that is calculated from the height and weight. Obesity was defined as a body mass index (BMI) > 30 kg/m² and overweight was BMI > 25 kg/m². According to the American Heart Association, obesity is now considered as an independent risk factor.
for CHD, and obesity is a major modifiable risk factor. In 2014, 39% of adults aged 18 years and over were overweight, and 13% were obese. (11)

The results of present study might be correlated with the respondents of the study who had not obeyed a healthy diet. The role of diet is essential in the development and prevention of cardiovascular disease. Also dietary factors contributing to obesity, uncontrolled diabetes, hypercholesterolemia and high blood pressure such as high intake of saturated fat and salt (sodium chloride). (3)

The majority of respondent showed a normal level of blood glucose. However, some of respondents showed high blood glucose in their clinical outcomes. In addition, diabetes was defined as fasting blood glucose levels is more than 100 mg/dl. (5) Over time, a high blood sugar level can lead to increased plaque buildup in arteries. Diabetes and pre diabetes raise the risk of CHD more in women than in men. The AHA has identified untreated fasting blood glucose levels of <100 mg/ dl for as one of the seven components of ideal cardiovascular health. (5)

The majority of respondent reported that they did not smoke. Current smokers in this study were defined as the persons who had a history of smoking within the past 30 days. The results of less current smokers which were reported in this study might be due to the majority of respondents were women. It was reported that a woman could control smoking easier than a man. (8) Nevertheless, some of respondents reported smoking. Smoking is a major risk factor for CVD. (5) Smoking or long-term exposure to secondhand smoke raises risk for CHD and heart attack. Smoking directly triggers a buildup of plaque in arteries and smoking also increases the risk of blood clots forming in arteries which can obstruct plaque-narrowed arteries and cause a heart attack. (8)

The majority of respondents used to perform physical activity since the majority of them were farmers. However, they did not perform exercise regularly. Meanwhile, regular moderate- and vigorous-intensity aerobic activity can lower CHD risk. Exercise is also believed can help reduce overweight and obesity when combined with a reduced-calorie diet and maintain a healthy weight over time. (12) Nurses can play the role as patients’ advocates to educate patients about the importance of establishing a habitual exercise pattern. (13)

The results of present study revealed that generally the respondents had at least one of CHD risk factors. The type of CHD risk factor was influenced by many factors including non-modifiable CHD risk factors that cannot be changed include age, gender, and family history of cardiovascular disease. (3) Most of the participants in this study were women and elderly. Generally, after the age of 55 the risk of CHD increases in both women and men (NHLBI, 2014). However, people at an older age have an increased risk of CHD and heart attack.

Family history as a non-modifiable risk factor, has a role in CHD risk. Biologically related first-degree relatives (siblings, off spring and parents) share roughly 50% of their genetic variation with one another. (5) The risk increases if the father or a brother was diagnosed with CHD before 55 years old, or if the mother or a sister was diagnosed with CHD before 65 years old. (3) Family history of CVD is related to an aggregation of specific behaviors.
(smoking, alcohol use) or risk factors (hypertension, DM, obesity) that family members may be attributed to environmental or genetic factors. (5) A person will develop heart disease especially if the affected family member smoked or had other risk factors that were not well treated.

V. Conclusion
This study can be concluded that most of the respondents have the risk factors of CHD. Therefore, the risk factors of CHD should be concerned as part of cardiac prevention and need further research on patients’ knowledge on risk factor management. Assessing the individuals further with screening investigations may allow the identification of a high risk group in whom the risk can be modified and future adverse events prevented.

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References

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**TABLE XI.** 11. (WHO) WHO. Obesity and overweight. 2016.
