



Cardiovascular Disease Risk Detection Through Cholesterol Examination

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ABSTRACT

Cardiovascular disease is one of the world's most serious health issues, including in Indonesia. Early detection and screening for cardiovascular disease are beneficial in reducing disease-related mortality and morbidity. Unfortunately, in Indonesia, the general public (particularly the elderly) rarely undergoes early screening for cardiovascular disease. Most elderly people complain of neck heaviness, which is one of the symptoms of high cholesterol levels in the blood. However, the majority of them are unaware of this because they rarely and reluctantly have their blood tested at a health facility. The goal of this activity is to detect cardiovascular disease early by checking cholesterol levels for free and educating people about the importance of protecting one's health from the various diseases that it can cause. Physical examination (height, weight), vital sign examination (blood pressure, pulse), cholesterol examination, and education are the three rare screening programs. This activity was completed voluntarily by 43 people. The majority of the participants were women between the ages of 41 and 60. According to the total cholesterol test, the majority of the participants had total cholesterol levels greater than 200 mg/dl. This means that these individuals are at an increased risk of developing cardiovascular disease. Regular total cholesterol screening can help to prevent the development of cardiovascular disease and its complications, lowering cardiovascular disease mortality and morbidity in Indonesia.

Keywords: Cardiovascular Disease, Early Detection, Cholesterol

PENDAHULUAN

Noncommunicable diseases are chronic diseases that develop gradually over time and are caused by a combination of genetic, physiological, environmental, and behavioral factors (WHO, 2018). Heart attacks, strokes, hypertension, cancer, chronic obstructive pulmonary disease (COPD), asthma, and diabetes are the most common noncommunicable diseases (Budreviciute et al., 2020). Noncommunicable diseases killed 36 million people worldwide in 2016, accounting for roughly 71% of all causes of death. Approximately 80% of these fatalities occur in middle- and low-income countries. Noncommunicable diseases currently account for 73% of all deaths, with 35% due to heart and blood vessel disease, 12% due to cancer, 6% due to chronic respiratory diseases, 6% due to diabetes, and 15% due to other noncommunicable diseases (WHO, 2018).

Cardiovascular diseases are the leading noncommunicable cause of death worldwide each year. Cardiovascular disease is a condition characterized by impaired heart and blood vessel function, primarily due to atherosclerosis. Coronary heart disease, stroke, heart failure, and arrhythmias are all included in this category (Fuster & Kelly, 2010; Lloyd-Jones et al., 2017). Cardiovascular disease is the leading cause of death worldwide, accounting for 17.9 million deaths per year, or roughly 31% of all deaths worldwide (Kim, 2021; PERKI, 2019). One in every three Americans suffers from cardiovascular disease (CDC, 2020). According to AHA 2020 statistics, there has been

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a 21.1 percent increase in cardiovascular disease mortality since 2007 (Virani et al., 2020). According to the Regional Health Research Data 2013, the prevalence of coronary heart disease in Indonesia is 0.5 percent, or approximately 900,000 people. The number of stroke victims in Indonesia is estimated to be around 2.1 million (Kemenkes RI, 2013).

Heart and blood vessel disease because it interferes with the optimal function of the cardiovascular system, the elderly are more susceptible to being affected by this disease, which increases with age. Cholesterol is a risk factor for heart disease. High cholesterol levels in the blood cause the blood to thicken, increasing peripheral resistance or afterload. Increased afterload increases the heart's workload and precipitates the clinical syndrome of heart failure. Hypercholesterolemia refers to elevated levels of cholesterol in the blood. Excess cholesterol has been shown to change the structure of the arteries and veins, causing endothelial function to be disrupted and blockages to form in the form of plaques, emboli, or lesions (Guyton & Hall, 2014).

The lack of public awareness about the importance of early detection of cardiovascular disease, particularly cholesterol checks, may be due to a misunderstanding that early detection of this disease can be accomplished with a simple cholesterol test with results available in ten seconds. As a result, the goal of this community service activity is to detect cardiovascular disease early with a simple blood test for total cholesterol levels and to increase public awareness of cardiovascular disease risk factors.

BAHAN DAN METODE

Community service activities will be carried out on Saturday, May 26, 2022, at the village official's house RT 01 Kelurahan 16 Ulu, Seberang Ulu II District, Palembang City. The activities are carried out in the form of cholesterol level checks and health counseling. This activity is done offline or in person with participants. Sample of blood respondents, each of whom is taken capillary blood, a few drops according to the needs of the examination. Digital cholesterol check tools, a lancet, alcohol, an alcohol swab, a stethoscope, and a blood pressure meter are among the tools used in activities. This activity includes physical examination (height, weight) and vital sign examination (blood pressure, pulse), as well as a cholesterol check to determine the total amount of cholesterol in the patient's blood and whether he suffers from or is at risk for cardiovascular disease. For those who have never had a cholesterol test, this exam can serve as a health screening to determine their current health status so that additional preventive measures can be taken. Furthermore, education and health education are important in preventing cardiovascular disease. This activity involves doctoral Professional Education Study Program students who are directly involved in health checks. Cardiologists and general practitioners the Faculty of Medicine at Universitas Muhammadiyah Palembang.

HASIL DAN PEMBAHASAN

The activities were generally well-executed and received positive feedback from the community. There were 43 people who took part in the examination.

The demographics of those who participate in this activity are served in table 1. According to table 1, the majority of the participants who attended were 69.8 percent women and were very enthusiastic during the activity. Women participate more in social and health-related activities because women, on average, have a more positive awareness and attitude toward social and health-related activities (Ahdiah, 2013). Women have traditionally been more active and enthusiastic about social activities.

The majority of those who attended were over the age of 40. (48.8 percent). This age range encompasses adults through the elderly. This age group is also at high risk for cardiovascular disease. Body functions decline as we age, increasing the likelihood of insulin resistance, which leads to diabetes mellitus. According to Riskesdas, the number of patients with cardiovascular disease increases with age, with the highest prevalence of cardiovascular disease occurring between the ages of 55 and 64, at 4.8 percent (Kemenkes RI, 2013). According to PERKENI, age over 45 is a high risk factor for cardiovascular disease, so screening tests or early detection must be performed in this age range (PERKENI, 2015).

Tabel 1. Demographic of program participants

Category		Frequency	Percentage (%)
Gender	Woman	30	69,8
	Man	13	30,2
Age	≤ 40	10	23,3
	41 – 60	21	48,8
	61– 80	12	27,9
Blood pressure	Normal	20	46,5
	Hypertension	23	53,5
Cholesterol Level	High 200 mg/dl	40	93
	Normal 200 mg/dl	3	7

Source: Secondary Data 2016

According to the results of blood pressure checks, 20 of the 43 participants with normal blood pressure had blood pressure, while 23 had hypertensive blood pressure. In the world, hypertension is a major cause of death. Wrong diet, excess weight, and bad habits such as smoking and drinking are all risk factors for hypertension (Andriolo et al., 2019). Almost all participants, up to 93 percent, had total cholesterol levels that were higher than normal. High cholesterol levels can lead to hypercholesterolemia as a result of a high-cholesterol diet and a lack of physical activity. Hypercholesterolemia, or high blood cholesterol levels, is a major risk factor for cardiovascular disease (PERKENI, 2015).

Providing health education in order to prevent cardiovascular disease and its complications, as well as to improve quality of life. Individual education is provided in this activity when the patient conducts an examination and requests additional explanation from the examiner. Each participant was given general information about cardiovascular disease, as well as signs, symptoms, and prevention. Participants stated that providing education is extremely important and beneficial because it allows them to expand their knowledge. Education to promote healthy living should always be done as part of prevention efforts and is a critical component of holistic cardiovascular disease management (Kemenkes RI, 2013).



Figure 1: Blood Cholesterol Levels Examination



Figure 2. Health Education

The residents of RW 01 Kelurahan 16 Ulu, Seberang Ulu II District, Palembang City are overjoyed with this service activity because it allows them to learn more about their health and gain knowledge about cardiovascular disease, allowing them to begin treatment right away. They hope that this activity can be done in a sustainable manner. The service activities we perform are part of a program of the University of Muhammadiyah Palembang Community Service Research Institute, which focuses on community service programs based on fostered villages, one of which aims to form a Healthy Village.

KESIMPULAN DAN SARAN

This community service activity suggests that early detection of cardiovascular disease is important and can help prevent the disease in the community. According to the data, the majority of the participants were female, with the highest age range being between 41 and 60 years. The results of the cholesterol tests revealed that almost all of the participants were at high risk of developing cardiovascular disease, with total cholesterol levels exceeding 200 mg/dl. This early cholesterol screening activity can identify participants at high risk of cardiovascular disease and prevent further complications.

Cholesterol levels should be checked on a regular basis, especially for the elderly whose examination results exceed normal limits, so that treatment and prevention can be carried out optimally.

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Conflict of Interests

The authors declared that no potential conflicts of interests with respect to the authorship and publication of this article.

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