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HEART HEALTH EDUCATION AND SCREENING IN ELDERLY AT POSBINDU BENCONGAN INDAH TANGERANG

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ABSTRACT

Introduction: Hipertention is one of the risk factors of cardiovascular disease in elderly. The purpose of this activity is to provide education about hypertension and conduct health screening which includes height, blood pressure, weight, abdominal circumference, GDS, total cholesterol, and uric acid.

Methods: The activity was carried out on March 2023 by conducting health checks, namely measuring blood pressure, height, weight, abdominal circumference, and blood sugar, cholesterol, and uric acid, as well as providing education about hypertension to 52 residents, at the Posbindu RW 05 Bencongan community hall. The level of knowledge of the participants was assessed based on the contents of the test sheet given at the time before and after intervention. The topic of hypertension is given as it is one of the major contributing factors to cardiovascular disease. While total cholesterol and uric acid are other risk factors that cause these diseases.

Results: Participants consisted of 36.5% men, 63.5% women, with the elderly category 48.1% and pre-elderly 38.4%. The results of the IMT examination were fat category 54%, male abdominal circumference (normal) 12.8%, female abdominal circumference (normal) 48.9%, hypertension 65.38%, normal blood sugar 96.07%, high total cholesterol 30.8%, male uric acid (high) 50%, female uric acid (high) 50%. Meanwhile, the participants' pre-test results averaged 52.5%, and post-test 74.1%.

Conclusion: The increase in participants' knowledge about hypertension and the increase in the value of some measurement results are expected that participants can adjust their lifestyle and diet to avoid the occurrence of cardiovascular disease.

KEYWORDS

education; elderly; heart health; screening.

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1. INTRODUCTION

Cardiovascular disease is a non-communicable disease caused by disruptions in the function of the heart and blood vessels. It is the most common cause of death in people aged before 60 years. Cardiovascular disease can cause various symptoms, such as shortness of breath, chest pain, dizziness, nausea and vomiting. Some of the diseases included in this disease are coronary heart disease and stroke (Kementerian Kesehatan Republik Indonesia, 2013) . Cardiovascular disease has symptoms that can be life-threatening, so it is important to know the risk factors that cause this disease.

Risk factors for cardiovascular disease include non-modifiable factors, namely family history, age, gender, and obesity. Other risk factors, which are

modifiable factors, include hypertension, diabetes mellitus, dyslipidemia, physical inactivity, unhealthy diet, and stress (Kementerian Kesehatan Republik Indonesia, 2013; Banerjee et al., 2013). Risk factors for cardiovascular disease can be prevented so as not to cause new cases.

The prevalence of cardiovascular disease in Indonesia in 2013 was quite high and increased compared to the previous year, namely the prevalence of coronary heart disease 883,447 people (0.5%), stroke 1,236,825 (7.0 per mile), hypertension 9.4%, diabetes 1.5%, and obesity 26.6%. The incidence of cardiovascular disease is prevalent among 45–74-year-olds (Kementerian Kesehatan Republik Indonesia, 2013; Jaul & Barron, 2017). The incidence of cardiovascular disease is increasing over time and occurs mostly in the elderly.

The elderly is a period when a person experiences a decrease in the function of several organs, resulting in non-communicable diseases. Degenerative conditions in the elderly result in a decreased immune system, making it easy to be infected with infectious diseases. (Kementerian Kesehatan Republik Indonesia, 2016). The percentage of the elderly population in Indonesia in 2020 reached 10.0%, and is expected to increase every year. Meanwhile, in 2014 Kementerian Kesehatan Republik Indonesia noted that the morbidity rate in the elderly reached 25.05%. Some of the most common diseases in the elderly are hypertension, arthritis, stroke, Chronic Obstructive Pulmonary Disease (COPD), and Diabetes Melllitus. (World Health Organization, 2021; Kementerian Kesehatan Republik Indonesia, 2016)

The increasing elderly population in Indonesia can cause several problems, including health problems. This situation requires the cooperation of health care workers in improving the quality of life of the elderly starting from the pre-elderly age (45-59 years). One of the interventions carried out is education about various health problems, such as cardiovascular disease, as well as screening and health checks for several risk factors for these diseases, such as checking blood pressure, uric acid, cholesterol levels, body weight, and blood sugar levels. One of the health service platforms for the elderly developed by the government with the cooperation of various parties Pos Pelayanan Terpadu (Posbindu) (Kementerian Kesehatan Republik Indonesia, 2016)

Based on preliminary data in 2018 at Posbindu Soka Indah RW 05 Kelurahan Bencongan Indah Tangerang Banten. Based on the preliminary data, 54.8% residents had hypertension, 80.6% residents were overweight, 61.3% residents with high total cholesterol levels (Riama et al., 2018). Based on the situation analysis above, it is important to educate and monitor health checks on elderly residents, so that the morbidity rate in the elderly can decrease and the quality of life of the elderly can increase. The purpose of this community service is to provide health education about maintaining heart health and checking the risk factors for cardiovascular disease, namely blood pressure, weight, blood sugar levels, cholesterol levels, and uric acid levels.

Education about maintaining heart health and checking risk factors for heart disease (cardiovascular) is one form of effort to improve and remind elderly residents of the importance of maintaining heart health and monitoring blood pressure values, body weight, blood sugar levels at any time, total cholesterol, and uric acid, so that referrals can be given to get further treatment at the health service center. Therefore, lecturers, clinical educators, educational staff, and students of the Faculty of Nursing, Universitas Pelita Harapan, in collaboration with community service partners, namely the cadres of the Integrated Development Post (Posbindu) RW 05 Bencongan, to provide health education and health checks to elderly residents.

The existence of this activity is expected to benefit participants: gain knowledge about hypertensive which has a risk of cardiovascular disease, know the value of blood pressure, Body Mass Index (BMI),

abdominal circumference which is a high risk of heart health problems, know the value of blood sugar, total cholesterol, and uric acid, regulate lifestyle and diet to avoid the occurrence of cardiovascular disease.

2. MATERIAL AND METHODS

The activity took place on Saturday, March 4, 2023 at 09.00 at the Community Hall of Pos Pembinaan Terpadu (Posbindu) RW 05 Bencongan. There were 52 participants, both elderly and adults. The preparation stage was carried out by coordinating with the Posbindu RW 05 Bencongan cadres and identifying the need for education and health checks. The community service team carried out administrative procedures by making permission letters and invitations in hardcopy form which were distributed by cadres to residents. Other preparations made by the team included procurement of tools and materials for health checks, educational materials, community service banners, draft certificates, and test sheets. The arrangement of the room and table for community service activities starting from registration, and the examination table was carried out in coordination with Posbindu cadres.

At the implementation stage, the team started with the preparation and registration of participants at 08.00 WIB. This activity was carried out by collecting participant data and approval of informed consent for the examination of blood glucose, uric acid, and cholesterol levels at the registration table, and continued with the measurement of weight, height, blood pressure, and abdominal circumference. The team gave a goody bag to each participant, which contained seminar materials, pre and post test sheets, stationery, and snacks. At 09.00 WIB, participants were given the opportunity to take a pre-test before getting health education about hypertension delivered by the lecturer of Medical Surgical Nursing (MSN). This material includes risk factors, symptoms, complications, prevention, and control of hypertension. Participants were given the opportunity to ask questions related to the material presented. The committee gave appreciation in the form of souvenirs to participants who were active and got the best test scores. Data collection on participants' knowledge was conducted directly on site. The test sheet consisted of five statements about hypertension, which included the definition, risk factors and treatment of hypertension. Participants filled out the test sheet, and the committee collected, checked the answers and scored them. The next activity was carried out by checking blood glucose, total cholesterol, and uric acid at the examination table.

The evaluation stage was carried out by giving a post-test questionnaire sheet about the educational material to the participants. The questionnaire consisted of the same five questions as the pre-test. Based on the results of observations, it appears that participants are enthusiastic in participating in PkM activities, and each participant gets a health check carried out.

3. RESULTS

The distribution of participant characteristics can be seen in table 1, where the most participants were aged ≥ 60 years (elderly), and the most participants with female gender.

The results of the participant's health screening examination can be seen in table 2. The table shows that participants were generally in the overweight category, abdominal circumference and in female participants in the high category. Meanwhile, the results of blood pressure measurement (systole) showed that most of the participants were in the hypertensive category, uric acid values were in the high category in male and female participants.

The evaluation results of the health education provided can be seen in table 3. In the table, showing the average value before and after the material was given, the participants experienced an increase. The evaluation was given through a test sheet, which included questions related to hypertension material,

Table 1. Characteristic of Participant

Characteristic	n	%
Age		
Adult (18-45 years old)	7	13.5
Pre elderly (46-59 years old)	20	38.4
Elderly (≥ 60 years old)	25	48.1
Gender		
Male	19	36.5
Female	33	63.5

Table 2 Participant Screening Examination Results

Variable	n	%
Body mass index		
Underweight (≤18,4)	1	2
Normal (18,5-25)	22	44
Overweight (≥25,1)	27	54
Abdominal circumference		
Male (normal) 90 cm	11	22.9
Male (high) >90 cm	6	12.5
Female (normal) 80 cm	8	16.7
Female (high) >80 cm	23	47.9
Blood Pressure (Sistole)		
Normal (<120 mmHg)	14	26.9
Pre hypertension (121-129 mmHg)	5	9.6
Hypertension (>130 mmHg)	34	65.4
Glucose at random		
Normal (<200 g/dl)	49	96,1
High (≥200 g/dl)	2	3,9
Total Cholesterol		
Normal (<200 mg/dl)	18	34.6
Borderline (200-239 mg/dl)	18	34.6
High (≥240 mg/dl)	16	30.8
Uric Acid		
Male (normal) 3,4 – 7,0 mg/dl	8	16
Male (High) >7,0 mg/dl	8	16
Female (normal) 2,4 – 6,0 mg/dl	17	34
Female (High) >6,0 mg/dl	17	34

Table 3 participant health education evaluation results

Variable	*Pre Test*	*Post Test*
Education	52.5	74.12

namely the definition, risk factors, and treatment of hypertension. The total post test score of the participants showed an increase from the pre-test.

4. DISCUSSION

Most participants were ≥ 60 years old and female. Advanced age is one of the risk factors for cardiovascular disease. This is supported by several results that show there is a relationship between age and the occurrence of cardiovascular disease (Wahyuni et al., 2019; Melyani et al., 2023). In old age, changes occur in the heart and blood vessels, and in general there is an increase in the stiffness of large arteries, called arteriosclerosis. In addition, there are changes in the heart's electrical system that can result in slower and irregular arrhythmias. Heart valves may become thicker and stiffer, which can reduce

Figure 1. The Committee Conducted Tests for Blood Sugar, Total Cholesterol, and Uric Acid

Figure 2. Participants Get Education About Hypertension by a Speaker

Figure 3. Participants Take The Test

blood flow and result in leakage (National Institutes of Health, 2018).

The results show that most of the IMT participants are in the overweight category. Being overweight can lead to compromised heart health. This is supported by several studies that show an association between excess weight and the incidence of coronary heart disease and heart failure (Syahryan Gibran & Nurulhuda, 2023; Nursalim & Yuniadi, 2011) . This is one of the factors for the occurrence of cardiovascular disease caused by lack of physical movement (Parlindungan Pane et al., 2022). Overweight people trigger the formation of fat stores in the body, thus stimulating an increase in triglyceride, LDL, HDL, and cholesterol values (Indrayanti et al., 2019).

In addition, most participants had hypertension. High blood pressure is a leading cause of heart disease and stroke because it damages the lining of the arteries, making them more susceptible to plaque buildup, which narrows the arteries leading to the heart and brain (US Centers for Chronic Disease Prevention, 2024). The results showed that hypertension was associated with the incidence of coronary heart disease where respondents who suffered from hypertension were more at risk of 2.667 times suffering from coronary heart disease than those who did not suffer from hypertension (Novriyanti et al., 2014).

Other results showed that most participants had good total cholesterol values and were within normal limits. This may identify participants as being at risk of having high total cholesterol values. High total cholesterol values have a risk of cardiovascular disease (Jeong et al., 2018). If in excess, cholesterol can accumulate in the walls of blood vessels and cause a condition called atherosclerosis, which is the narrowing and hardening of blood vessels, which is a precursor to coronary heart disease and stroke (Kemenkes, 2022). In addition, the results showed that high cholesterol levels are associated with high blood pressure in patients with coronary heart disease (Qatrunnada et al., 2024).

Evaluation result shows an increase in participants' knowledge after being given education about hypertension. This is supported by the results of a study that showed an increase in knowledge of cardiovascular risk factors in the elderly (Desty et al., 2024). Increased knowledge can affect the attitude of the elderly in maintaining a lifestyle, including diet (Maulida et al., 2023). Good knowledge can also

influence behavior and lifestyle in controlling hypertension (Nuraini, 2015). We believe that the increase in participants' knowledge is one of the foundations for maintaining a healthy lifestyle, especially in controlling blood pressure, because high blood pressure is one of the dominant factors causing cardiovascular disease.

5. CONCLUSION

Cardiovascular disease is a non-communicable disease caused by impaired heart and blood vessel function. The results of the community service activities showed that most participants were ≥ 60 years old and female. The measurement results showed that most participants had obese BMI, increased abdominal circumference, high systole pressure (hypertension). Meanwhile, the examination results showed that most of them had normal blood sugar, high uric acid, while the normal and borderline total cholesterol values had the same number. The evaluation test showed an increase in knowledge from before and after the material was given. The existence of education about hypertension and health checks that include measuring blood pressure, weight, abdominal circumference, blood sugar, uric acid, and total cholesterol can provide benefits for participants in controlling diet and lifestyle. For this reason, coordination between cadres and the local puskesmas is needed to facilitate residents with programs that can provide solutions to residents' health problems, such as conducting elderly exercises. There is no a potential conflict of interest.

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