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Program for the Empowerment of Elderly Cadres in Hypertension Management through Physical Activity in the Work Area of the Rancamayar Health Center

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ABSTRACT

According to the World Health Organization (WHO), approximately 1.13 billion people worldwide have hypertension. Hypertensive patients have numerous complications that can result in disability or death. To avoid hypertension, the community needs to be educated on how to live a healthy lifestyle. Cadres from Elderly Integrated Health Centers have the potential to actively promote and prevent hypertension, heart, and blood vessel disease in the community. It is necessary to involve the elderly Integrated Health Centre cadres in improving the level of public health. The Elderly Cadre Empowerment Program in Hypertension Management through Physical Activity seeks to improve the knowledge and skills of the elderly Integrated Health Centre administrators in promoting healthy lifestyles and preventing Hypertension, Heart, and Blood Vessel Disease. This community service activity is conducted through training that includes lectures, two-way discussions, and a 20-minute brisk walking session, followed by assignments in the field. Participants included 23 elderly Integrated Health Centre cadres and Rancamanyar residents. Activities completed three times in one month. This series of assistance includes providing assistance such as hypertension education and brisk walking, fast walking demonstrations, and participating in a 20-minute brisk walk with the community. The achievement of increasing participants' knowledge of hypertension and brisk walking can be said to be good based on the evaluation, and the community can do a 20-minute brisk walk according to the procedure.

Keywords: Elderly, Empowerment ,Fast Walking, Hypertension

INTRODUCTION

One of the non-communicable diseases (NCD) that continues to predominate in Bandung Regency is hypertension. This is the motivation behind the Rancamanyar Health Center's decision to launch the Germas (Healthy Living Community Movement) Program. The Germas program includes eating a well-balanced diet, exercising, washing your hands, not smoking, practicing good environmental hygiene, wearing masks, visiting health care facilities if you have a fever and cough, and praying. Although the Rancamanyar Public Health Center has provided education on the importance of exercise for people with hypertension, the Rancamanyar residents have not fully comprehended hypertension control through physical activity. The community's willingness to participate in sports to lower blood pressure remains low. According to interviews, there are still people who are hesitant to participate in sports because they need equipment, they don't have much time and are busy, and it is difficult to lower blood pressure.

With a prevalence of 57.87 percent, hypertension continues to occupy the largest proportion of the total NCD. According to the World Health Organization (WHO), hypertension affects approximately 1.13 billion people worldwide. That equates to one in every three people on the planet being diagnosed with hypertension, with only 36.8 percent taking medication. Every year, hypertension claims the lives of 8 million people, 1.5 million of whom are from Southeast Asian countries. Hypertension affects 42 percent of the world's population (WHO, 2018). The prevalence of hypertension in Indonesia was 34.1 percent when people were measured at the age of 18. In Indonesia, the prevalence of hypertension in the elderly is 45.9 percent for those aged 55-64, 57.6 percent for those aged 65-74, and 63.8 percent for those aged > 75 years (Mandini, 2018; Noviaty, Sukmawati, Kusumawaty, 2021).

Changes in blood pressure in the elderly are the result of changes in the peripheral vascular system. Lack of activity can cause a buildup of cholesterol, particularly low density lipoprotein (LDL), in artery walls. Lipoprotein entry into the inner layer of blood vessel walls increases with high blood pressure and increased permeability of blood vessel walls; damage to blood vessel walls is the beginning of an atherosclerosis process. Regular exercise improves the metabolism of body cells that use oxygen efficiently in heart muscle metabolism, resulting in a decrease in hypertension (Cheng 2019).

A lack of physical activity increases the risk of suffering from hypertension. This is due to the increased risk of being overweight. Individuals who are not active in sports have a higher heart rate resulting in the heart muscle to work harder with each contraction. It's becoming more difficult, and the more frequently the heart muscle pumps, the more pressure builds up in the arteries (Cheng 2019).

Blood pressure is affected by physical activity. According to the results of Hanson and Jones (2015) research, walking exercise has an effect on blood pressure in the elderly with hypertension. This occurs because systolic and diastolic blood pressure decreases after walking. Walking at a brisk pace on a regular basis will help to lower blood pressure. Routine activities, according to (Muhammad et al. 2020), can lower blood pressure in the elderly by assisting in the maintenance of blood vessel elasticity. Furthermore, regular physical activity instructs the body on how to properly distribute blood to the muscles while walking. As a result, the workload on the heart decreases. These modifications help to reduce heart rate and blood pressure during physical activity.

Walking is an excellent form of exercise for lowering blood pressure. Walking can also help to lower your risk of heart disease. To fit and function normally without stopping to pump blood, the heart muscle requires more blood from the coronary arteries. Walking for exercise increases blood flow to the heart. The amount of oxygen in the heart muscle is sufficient, and the heart muscle can be maintained. Not only that, the flexibility of the arteries is increased when doing activities on foot. Finally, blood pressure tends to be lower, and the adhesion between blood cells that can cause blood clots and vessel blockage decreases (Putriastuti & Librianti, 2020).

The main problems of the community in the Rancamanyar area are the high prevalence of hypertension, the lack of activity, particularly during the pandemic, which requires the community to mobilize, and the lack of alternative problem-solving strategies related to reducing or controlling blood pressure in the Rancamanyar elderly.

The various problems mentioned above, along with the lack of optimal physical activity performed by the elderly with hypertension, are feared to have an impact on hypertension complications. Walking can help control blood pressure in hypertensive patients by preventing hypertension and controlling blood pressure. As a result, efforts that can contribute to the prevention of disease worsening in hypertensive patients through physical activity are required to aid in blood pressure control efforts.

IMPLEMENTATION METHOD

This community service activity was carried out at the Rancamanyar Field which is the working area of the Rancamanyar Health Center, Bandung Regency. This community service activity was carried out on July 31, 2021 to September 4, 2021. The participants or targets of community service activities were the elderly Integrated Health Centre cadres and the community in Rancamanyar, especially the elderly. This community service uses the method of socializing the provision of material through videos, leaflets and a 20-minute brisk walk demonstration. The indicators for the success of this community service activity are the understanding of knowledge about hypertension and the sustainability of the 20-minute brisk walk which is routinely carried out by the community. This community service activity is an effort to prevent hypertension and control hypertension through increasing physical activity. The tools used in this activity are *infocus,* leaflet paper, laptops and blood pressure measuring devices.

This community service activity was carried out from July 31st to September 4th 2021 at the Rancamanyar Field, which serves as the working area for the Rancamanyar Health Center in Bandung Regency. The elderly Integrated Health Centre cadres and the Rancamanyar community, particularly the elderly, were the participants or targets of community service activities. This community service socializes the distribution of materials through videos, leaflets, and a 20-minute brisk walk demonstration. The understanding of hypertension knowledge and the sustainability of the community's 20-minute brisk walk are the indicators for the success of this community service activity. This community service activity was aimed to prevent and control hypertension by increasing physical activity. This activity made use of infocus, leaflet paper, laptop computers, and blood pressure measuring devices.

RESULTS

This community service activity went out smoothly according to plan. As many as 23 cadres and members of the community participated in this activity, which included community service and a 20-minute brisk walking exercise. This activity took place in the Rancamanyar field. There will be a total of two meeting sessions. The purpose of Meeting 1 was to provide information about hypertension and how to overcome it. The session the following week consisted of a 20-minute brisk walk demonstration to cadres and the community. Activities were carried out while adhering to health protocols, such as avoiding crowds and wearing masks. The activity began with students checking their blood pressure, and then moved on to the distribution of information about hypertension and how to overcome it. The 20-minute brisk walk took place in early September 2021.

The resource person provided an evaluation in the form of a post-test through questions during the extension before and after the material was given as a way of evaluating the participants' understanding of the material. The questions posed can be answered by both cadres and the community. Furthermore, psychomotor evaluation of physical activity brisk walking was carried out by monitoring the community's sustainability of this physical activity. Cadres and the elderly participated in this brisk walking physical activity every Saturday before participating in elderly gymnastics.

DISCUSSION

Community service activities, which are the responsibility of lecturers in chess dharma education, are the main obligations of lecturers aside from teaching. One of the topics covered in community service this time is providing health education and counseling by lecturers through community service. Starting with the rising global incidence of hypertension, which has an impact on West Java, particularly Bandung, this is an intriguing theme for this activity.

An analysis of the problem revealed that the prevalence of hypertension in Rancamanyar is still quite high in the community. While the community's physical activity remains low, this has an unfavorable impact on hypertension management.

Nurses, as health workers, play a role in changing the behavior of the illness suffered in order to avoid or reduce the risk of the illness. Nurses help clients recognize health and nursing care procedures that they need to do to restore or maintain their health in their role as educators (educators). This necessitates an effort to reduce and prevent hypertension through hypertension management.

In addition to pharmacological therapy, non-pharmacological therapies, such as lifestyle modification, are recommended to reduce hypertension. Guidelines for hypertension management recommend lifestyle changes, particularly when combined with diet and exercise. Non-pharmacological strategies aimed at changing lifestyle should be implemented in hypertensive and pre-hypertensive patients. Supervised exercise, the DASH diet, and weight loss, when combined with pharmacological therapy, are effective treatments for normalizing blood pressure. This statement is based on the understanding that exercise is an important step in the prevention and primary care treatment of hypertension (Muhammad et al., 2020). The exercise blood pressure response seeks to ensure adequate blood flow to active muscles. Blood

pressure is affected by cardiac output influenced by myocardial contractility, heart rate, blood volume, and peripheral vascular resistance. Changes occurred at the cardiovascular level during training development, including increases in systolic blood pressure, diastolic blood pressure, and mean arterial pressure.

Walking has an effect on lowering blood pressure (Gartika, Nur Al Idrus, and Wilandika 2021) . As stated by (Benetos, Petrovic, and Strandberg 2019), walking on a regular basis and in the proper manner can help lower blood pressure that there is a change (decrease) in blood pressure of 0-10 mmHg. This could be due to a variety of factors, one of which is age, particularly in the elderly (Budiyono 2001) (Alvarez-de Lara and Martn-Malo 2014). Walking in the morning has numerous advantages, including improved blood circulation, muscle strength and stamina, and vitamin D absorption. Blood pressure will rise as blood circulation improves. (Kamelia & Ariyani 2021) According to (Cheng 2019), exercising regularly in the morning will provide the body with positive energy for the rest of the day.

Morning exercise is ideal because, in addition to the capacity for fresh air, it helps increase human concentration when performing various activities. Regular walking can lower blood pressure by 4-8 mmHg because it improves blood circulation, which lowers blood pressure (Hanson and Jones 2015). This is consistent with the assertion (Putriastuti 2016) that increasing leg muscle strength while walking is beneficial for increasing oxygen demand to the heart and brain. Adequate oxygen demand is an important requirement for people with hypertension in order to maintain stable blood pressure. The blood flowing between the muscle tissue becomes smoother as the active muscles move on a regular basis. The blood transports the oxygen and glucose required for muscle contraction. Such mechanisms are critical for blood pressure regulation.

Walking exercises can increase the elasticity of blood vessels and the heart's ability to work normally, as well as reduce levels of fat in the blood that settle on the walls of blood vessels, causing arteriosclerosis. Walking exercises can also improve blood capillaries, hemoglobin concentration, oxygen differences in arteries and veins, and blood flow in muscles. (2019, Rezky et al.)

Regular walking reduces sympathetic activity, increases vagal tone leading to a reduction in peripheral resistance, and reduces norepinephrine levels by about 30%. This reduction can lower blood pressure (Mandini et al. 2018) . This walking effect can also result in the release of vasodilating substances such as endorphins, reduced insulin resistance and effects on kidney function through reduced plasma-renin levels (Mandini et al. 2018) .

Walking causes the hormone epinephrine to be activated, causing the heart muscle to contract more strongly. Epinephrine binds to two receptors, and activation of two receptors causes vasodilation. Increased body temperature also causes increased dilation or vasodilation of blood vessels during exercise (Muhammad et al. 2020).

The educational outreach program's goal is to increase individual or community knowledge in the health sector by disseminating knowledge about how to maintain and manage hypertension with a healthy lifestyle through physical activity. In addition to education on hypertension management, exercise training on hypertension is provided, which consists of 20 minutes of walking. The provision of 20-minute walking skills training serves to increase cognitive abilities regarding hypertension, as well as to encourage the community to engage in light physical activity that has an effect on lowering blood pressure.

This community service program aims to improve the knowledge and skills of Integrated Health Centre cadres and the Rancamanyar community in order for them to play an active role in preventing hypertension in their community. This program will also train elderly Integrated Health Centre cadres to educate the community about hypertension.

CONCLUSIONS AND SUGGESTIONS

The community service program in Rancamanyar was running well, and it consisted of three activities that were directly assigned to cadres and the community. The obstacle in this community service was the inaccuracy of planning and implementation as a result of the

government's policy of locking the Rancamanyar area and not allowing crowding activities, so that at the fast walking demonstration stage, it was carried out while the government's lockdown policy was being completed. This community service program was well received by Integrated Health Centre cadres and the community. Increased knowledge about hypertension and the sustainability of physical activity brisk walking was performed on a regular basis in the gymnastics program, which was done routinely by cadres and the community.

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APPENDIX

Figure 1. Giving Material through Video and Direct Presentation by Resource Persons

Figure 2. 20 Minute Fast Walking Training for Elderly Integrated Health Centre Cadres