

JOURNAL OF HEALTH COMMUNITY SERVICE



Efforts to Stabilize Blood Pressure in Hypertensive Patients with Management of Hypertension Therapy Gymnastics Training

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ARTICLE INFORMATION

Received: May 6, 2022

Revised: May 23, 2022

Available online: May 2022

KEYWORDS

Hypertension; Hypertension therapy exercise; young adults.

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A B S T R A C T

Hypertension is a type of degenerative disease whose prevalence is increasing over time. The success of hypertension management is influenced by daily activities for people with hypertension to control blood pressure. The purpose of implementing this intervention is to reduce blood pressure and control the blood pressure of hypertensive patients by doing hypertension therapy exercises. The training used is a training method by collaborating with hypertension exercise movements in young adults, using a sample of 30 hypertension sufferers in RT 23 RW 05, Kedung Rejo Village, Waru District, Sidoarjo Regency. The application of hypertension therapy exercise is carried out three times a week with a duration of 30 minutes, and evaluation of the ability of hypertension therapy exercise and evaluation of blood pressure at the beginning and end of the meeting. The results of the evaluation of the ability of hypertension therapy exercise according to operational standards (SOP) with the results of blood pressure initially seven people (23.3%) with normal high criteria (130-139/85-89mmHg) to 23 people (76.7%) after being given hypertension therapy gymnastics training activities. Hypertension therapy gymnastics can lower blood pressure and be modified through young adult gymnastics movements that can be applied routinely to people with hypertension. The results of this training activity are expected to increase the self-awareness of hypertension sufferers to increase gymnastic activities as a non-pharmacological treatment so that their blood pressure remains normal and as a basis for developing further interventions.

INTRODUCTION

Hypertension is still a health problem in developed and developing countries (Kresnawan, 2011). Hypertension is a degenerative disease with a high morbidity and mortality level. High blood pressure is a decisive risk factor for kidney disease and cardiovascular diseases such as stroke and ischemic heart disease (Kumala, 2014). Hypertension still occupies the category of the ten leading causes of death in Indonesia, with a death rate of 42 thousand. According to the results of Riskesdas 2013, the prevalence of hypertension in Indonesia is quite high, namely 25.8% (Kemenkes, 2013).

Hypertension or high blood pressure is a disorder in the blood vessels that results in the supply of oxygen and nutrients, which are carried by the blood, being blocked to the body tissues that need them (Susanti et al., 2021). There are risk factors for hypertension that cannot be controlled, namely age, race, and family history and some that can be controlled, including excess body weight, lack of physical activity, smoking, excess sodium intake, potassium, calcium, low magnesium intake, alcohol consumption and stress (Kresnawan, 2011).

All people can suffer hypertension from the lower middle to the upper middle. Hypertension based on the cause is divided into two: primary hypertension with known causes and secondary hypertension whose cause cannot be ascertained. The exact cause of hypertension is not yet known. More than 90% of hypertensive patients are classified as essential hypertension, while 10% are classified as secondary hypertension. Primary hypertension often occurs at the age of 30-50 years. This is due to changes in lifestyle, consuming foods high in fat, and cholesterol, smoking and high stress. A lack of education also causes dietary non-compliance in hypertension sufferers, so patients do not understand the impact of non-compliance with diet; other causes are due to a low economic level, so food needs are adjusted to income or income (Bistara & Kartini, 2018).

One of the ways to manage hypertension is non-pharmacological. Several ways to do non-pharmacological treatment are controlling diet, reducing salt intake, increasing potassium and magnesium consumption, and doing physical activity. One way to improve your lifestyle is to do regular physical exercise. Physical exercise aims to lower blood pressure and has been shown to improve the quality of life in hypertensive patients (Irmaviani, 2019). Physical exercises suitable for the elderly include walking, cycling, swimming, doing housework and gymnastics. Physical exercise, such as regular exercise, helps prevent chronic conditions or diseases, such as high blood pressure (hypertension) (Anwari et al., 2018).

Sports such as shrimp paste is a sport, one of which aims to increase blood flow and oxygen supply to active muscles and the skeleton, especially the heart muscle. Anwari and wadyawati said that with exercise or exercise, the need for oxygen in the cells would increase for the energy formation process, increasing heart rate, so cardiac output and stroke volume increase. Thus, blood pressure will increase. After resting, the blood vessels will dilate or stretch, and blood flow will decrease for a while; about 30-120 minutes later, it will return to blood pressure before exercise. If you exercise regularly, the decrease in blood pressure will last longer, the blood vessels will last longer, and the blood vessels will be more elastic. The mechanism of lowering blood pressure after exercise is that exercise can relax blood vessels. So, by dilating blood vessels, blood pressure will decrease (Anwari et al., 2018).

Efforts are being made to deal with this problem by using hypertension therapy exercises. The gymnastic movement carried out is hypertension therapy gymnastics in general; it needs gymnastic movements adapted to the community's movement abilities. It is expected to improve residents' quality of life and increase efforts to control hypertension in middle-aged adults to improve health status and prevent hypertension.

METHOD

General Planning Overview

The activity was carried out in the Brigjen Katamso 2 area, RT 23 RW 05, Kedung Rejo Village, Waru District, Sidoarjo Regency, with 30 people participating in this activity, their age range being 36-60 years old. In the area of Brigadier General Katamso there was a posyandu activity, but during the covid-19 pandemic, these activities did not run. Activities at the posyandu include checking blood pressure and giving vitamins. The assessment data includes knowledge about hypertension, physical activity, and hypertension diet. The activity starts from meeting cadres on January 13, 2022, until February 10, 2022. Health problems often experienced by the community are hypertension, cholesterol, and gout. Many residents still do not adhere to the diet being carried out, making it difficult for residents to control their blood pressure. From these conditions, the implementation of community service regarding the antihypertensive therapy exercise management application needs to be given to residents so that this activity is expected to increase efforts to control hypertension.

Implementation

The implementation method in the community service program provides examples of hypertension therapy gymnastics (exercising antihypertensive therapy) in the form of demonstrations and independent practice. The participants of this activity were Brigadier General Katamso RT 23 RW 05 Waru Sidoarjo. The training management consisted of checking blood pressure before being given the intervention at the beginning of the meeting. Furthermore, the time contract is to provide a schedule simultaneously to participate in shrimp paste training, demonstrations with exercise guide videos and sound or speakers. Gymnastics is carried out together for 20-30 minutes with a video guide that has been made. Gymnastics is carried out three times a week and is carried out for two weeks. Anti-hypertension exercises are carried out together and carried out according to the movements contained in the given module. In the final stage, blood pressure checks after the intervention at the end of every week. This training activity is expected to improve residents' quality of life and increase efforts to control hypertension suffered by middle-aged adults to improve their health status and control hypertension.

Evaluation

Evaluation is carried out at the end of the meeting by measuring blood pressure using a sphygmomanometer and an observation sheet to write down the examination results. Then the results that have been obtained carried out the data analysis process.

RESULT AND DISCUSSION

Community service activities were carried out on January 13 to January 27, 2022. The initial activity was a field survey and continued with the preparation of service proposals. The results of community service presented in this section are as follows:

Table 1. Blood Pressure Measurement Results Pre and Post Intervention

No	Blood Pressure Classification	Pre-Intervention		Post Intervention	
		Frequency	Percentage	Frequency	Percentage
1.	Normal	0	0%	7	23.33%
2.	Normal High	5	16.67%	19	63.33%
3.	Hypertension grade 1	17	56.67%	4	13.34%
4.	Hypertension grade 2	8	26.66%	0	0%
5.	Hypertension crisis	0	0%	0	0%
	Total	30	100%	30	100%
Statistical Test Wilcoxon Signed Rank Test			Result <i>P</i> Value = 0.003		

The table above shows that most of the blood pressure of residents in the Brigjen Katamso 2 RT 23 RW 05 Kelurahan Kedung Rejo Waru District before the intervention was in the category one hypertension category as many as 17 people (56,67%), and after intervention in the high normal category totalled 19 people (63.33%). Based on the table above, using the Wilcoxon Signed Rank Test statistical test, the knowledge value *p* value = 0.003, so there is an effect of hypertension therapy exercise training on blood pressure.

Exercise can increase cardiac output, accompanied by an increase in oxygen distribution to parts of the body that need it. In contrast, vasoconstriction will occur in parts that do not require oxygen, such as the digestive tract. Increased cardiac output will affect blood pressure with a normal value ($\leq 120/\leq 80$ mmHg) (Triwibowo et al., 2016). Exercise causes major changes in the circulatory and respiratory systems, which occur simultaneously as a homeostatic response. Regular exercise can reduce systolic and diastolic pressure in people with a diagnosis of hypertension (Wallace, 2003).

Hypertension therapy exercise can help improve blood lipid profiles, reduce total cholesterol, Low-Density Lipoprotein (LDL), and triglycerides and increase high-density lipoprotein (HDL), as well as improve homeostatic systems and blood pressure (Nurmayanti & Teguh, 2020). According to Notoatmodjo (2010), the provision of education will increase knowledge in which behaviour change must be based on knowledge. A person will change his behaviour when he knows the benefits of the behaviour.

CONCLUSION

The implementation of community service activities has been running smoothly. The intervention has been carried out by providing health education by showing a video of shrimp paste exercise to the Brigadier General Katamso RT 23 RW 05 Waru Sidoarjo area related to existing health problems, namely

hypertension. Hopefully this activity can be developed in accordance with existing technological advances so that it can be useful for the wider community, for the Citizens The number of participants can be increased so that information can be conveyed as a whole and can carry out these activities regularly in order to achieve a better level of public health, especially in patients with hypertension, and for further implementation it is necessary to have mental, physical readiness, and good cooperation between personnel or teams in groups so that the program can run smoothly.

UNKNOWLEDGEMENTS

Thank you to those who have supported and contributed to this activity.

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