



Controlling Hypertension in the Elderly Through Routine Blood Pressure Checks and Hypertension Exercises

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ABSTRACT

Uncontrolled hypertension is potentially increase morbidity and mortality rates. One of the recommended physical activities to control hypertension in the elderly is exercise. This activity can help restore position and flexibility to the nervous system and blood pressure, maximize blood flow to the brain and other benefits. The aim of this community service is to help increase awareness of the elderly regarding controlling hypertension, and routinely carry out blood pressure checks and actively carry out elderly exercise. The methods used are health education, doing hypertension exercises and checking blood pressure. Community service activities were carried out on Saturday, December 15 at 07.00-10.00 WIB. Of the 39 elderly people who attended, 4 elderly people were found to have blood pressure above normal (>140-90 mmHg). It can be said that the prevalence of hypertension is only 14%, because other elderly people have it controlled through regular blood pressure checks. Overall, the activity ran smoothly and the enthusiasm of the elderly was also very good. This kind of activity is still needed by the elderly with material that adapts to the problems experienced by the elderly in Tiru Kidul village. Health education related to efforts to control blood based on the prevention and control program for non-communicable diseases (P2PTM) from the Indonesian Ministry of Health. Meanwhile, activity therapy in the form of hypertension exercises was adopted from several studies which have been proven effective in controlling and lowering blood pressure in the elderly.

INTRODUCTION

Hypertension is a health problem that is often found in the elderly and requires appropriate treatment such as carrying out physical exercise in the elderly and the role of the family to help the elderly overcome this problem (Harsismanto et al., 2020; Bungsu et al., 2019). Hypertension is one of the risk factors that causes disease, it is said to be hypertension if the results of systolic blood pressure measurements are > 140 mmHg and diastolic > 90 mmHg (Linda, 2018). The incidence of hypertension in the world is estimated at 1 billion people and almost 7.1 million die every year (13%) (Ministry of Health of the Republic of Indonesia, 2019). Based on Riskesdas data, the incidence of hypertension shows an increase from 25.8% to 34.1%. The estimated number of hypertension cases in Indonesia is 63,309,620 people, while the death rate due to hypertension is 427,218 (Riskesdas, 2018).

Uncontrolled hypertension can increase morbidity and mortality rates because hypertension is a risk factor for various more serious health problems such as cardiovascular disease, stroke and kidney failure. Some actions that can be taken to control blood pressure in hypertensive patients are changing lifestyle by reducing salt consumption, reducing alcohol consumption, controlling body weight, reducing cigarette consumption and doing physical activity (Septianingrum, 2020).

One of the recommended physical activities to control hypertension in the elderly is exercise. This activity can help restore position and flexibility to the nervous system and blood pressure, maximize blood flow to the brain and other benefits. Exercise can reduce vasoconstriction and pressure on blood vessels, besides this activity can also increase the function of vasodilation which can reduce peripheral vascular resistance. If the elasticity of the blood vessels increases, this can make it easier for the blood vessels to relax quickly in accordance with the blood pump from the heart (Septianingrum, 2020).

Gymnastics stimulates the release of endorphins. This hormone can act as a natural anesthetic produced by the brain, creating comfort and lowering high blood pressure. When someone exercises, they release b-endorphins which are controlled by receptors in the brain that regulate emotions. It has been proven that increasing b-endorphins is closely related to pain relief, improved memory, increased appetite, sexual performance, blood pressure and breathing (Atmaja&Fithriana, 2017).

A decrease in blood pressure occurs because blood vessels widen and relax (Padila, 2012). Exercise also stimulates the release of endorphins. This hormone can function as a natural sedative produced by the brain which creates a feeling of comfort and increases endorphin levels in the body to reduce high blood pressure (Yantina&Saputri, 2019).

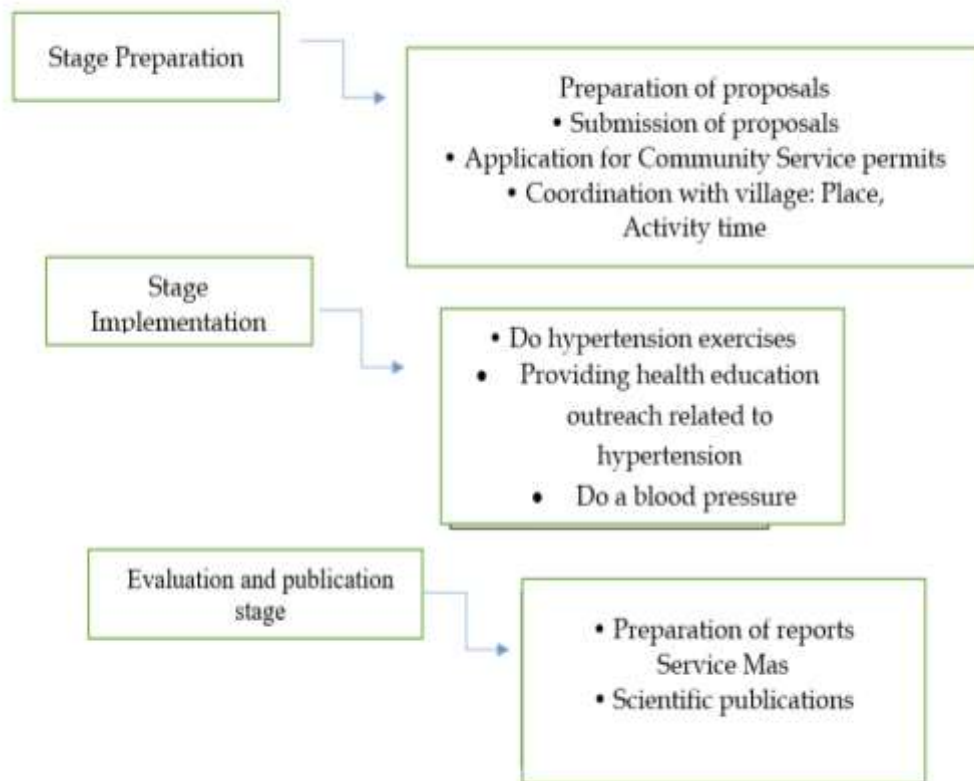
Several studies show that exercise, especially hypertension exercise, has an effect on changes in blood pressure, such as in a study conducted by Hernawan & Rosyid, (2017), where as many as 39% of elderly people experienced pre-hypertension after being given hypertension exercise. 56% of elderly people had blood pressure measurements within the normal range. Anwari et al (2018), also proved that hypertension exercise affects the blood pressure of the elderly ($p < 0.001$). The results of research on elderly people in Yogyakarta showed that hypertension exercise given for 30 minutes twice a week was able to reduce systolic (22 mmHg) and diastolic (3.4 mmHg) blood pressure (Tina et al., 2021). Based on this problem, we are interested in carrying out community service regarding "Controlling Hypertension in the Elderly through Routine Blood Pressure Checks and Hypertension Exercises in the Tiru Kidul Village area."

IMPLEMENTATION AND METHODS

The method of implementing this service is carried out in the form of counseling, carrying out routine activities such as hypertension exercises and blood pressure checks carried out at the Tiru Kidul village hall with the theme "Controlling Hypertension in the Elderly through Routine Blood Pressure Checks and Hypertension Exercises in the Tiru Kidul Village area, Kediri"

The stages of service activity planning are generally divided into four activity stages, namely planning and preparation, implementation, evaluation, and reporting and publication. At the planning and preparation stage, meet with the relevant village authorities for permission to carry out service, then prepare materials and coordinate the team. Implementation of activities includes: 1. Implementation of hypertension exercises. 2. Carry out routine blood pressure checks on participants. 3. Provide counseling to the elderly regarding health education related to efforts to control blood pressure.

Next, at the evaluation stage, the data taken will be looked at regarding the results of regular routine checks and previous results. The final stage is reporting and publication activities. The output of this community service is obtaining blood pressure data for the elderly in Tiru Kidul, carrying out hypertension exercises and receiving health education related to efforts to control blood pressure. Apart from that, the outputs and achievement targets are also obtained from scientific publications on community service from the results of community service carried out.



Picture 1. Conceptual Framework

RESULTS AND DISCUSSION

Community service activities in December 2023, starting with hypertension exercises. With Simongan 2020 YouTube media, starting from walking in place, then clapping, clapping fingers and intertwining fingers, hand let out I, thumbs crossed, little finger and index finger together, hand let out I, tap wrist, make a fist and make a fist, pat your waist and calves, pat your stomach alternately, stand on your toes, and clench your hands into fists then move them up and down (Neng R., et al 2020).

Several studies have been conducted to examine the effectiveness of hypertension exercises to reduce blood pressure and control blood pressure in the elderly, especially in Indonesia. Research conducted by Hernawan and Rosyid in 2017 showed that providing elderly exercise had an effect on reducing blood pressure in elderly people with hypertension. In line with this, other research also proves that hypertension exercise is effective in reducing systolic blood pressure (Basuki, 2021).



Picture 2. Implementation of Hypertension Exercises with the Elderly

Next, carry out health education outreach regarding how to control blood pressure and counseling to increase the elderly's understanding of hypertension. The material provided is understanding, etiology, signs and symptoms, pathophysiology, management, diagnostic examinations, and complications of hypertension. And don't forget that the service team always motivates participants to always control blood pressure in several ways, through lifestyle, diet, sleep patterns and everything related to the causes of increased blood pressure. For health education about hypertension must be given for increasing level of knowledge, by direct promotion or using some informatics modes (Rasyida, 2014).

During health education about hypertension exercise, participants expressed a lack of motivation to do exercise because there was no routine program for hypertension exercise from Posbindu. Motivation can be stimulated for the elderly to take part in hypertension exercise because it has many benefits and is useful for maintaining health (Masithoh, 2014).

The final activity is regular blood pressure measurement. The results of the blood pressure measurement activity are written on the sheets of paper provided, as well as taking attendance with the assistance of the service team. Of the 39 elderly people who attended, there were 4 elderly people who had blood pressure above normal ($>140-90$ mmHg). It can be said that the prevalence of hypertension is only 14%, because other elderly people have it controlled by routinely checking their blood pressure periodically, doing physical activity and so on.

The results of blood pressure measurements by comparing before doing Hypertension exercises with after doing Hypertension exercises, the average blood pressure of respondents fell by 10mmHg systolic blood pressure and 5mmHg diastolic blood pressure (Hermawan, 2017). This happens because hypertension exercise can reduce anxiety and stress so that blood vessels experience vasodilation. In addition, melatonin secretion can increase the fulfillment of the quantity and quality of sleep needs so that blood pressure remains normal when you wake up (Yani, 2019).



Picture 3. Implementation of Blood Pressure Checks

CONCLUSIONS AND RECOMMENDATIONS

Overall, the activity ran smoothly and the enthusiasm of the elderly was also very good. In the hypertension exercise activity, the elderly seemed enthusiastic about participating in the hypertension exercise very well, assisted by the service team, although sometimes the elderly seemed to forget some movements, but with the media provided, the elderly were able to see and remember the movements they were supposed to do. Apart from that, the elderly who took part in this activity looked active and enthusiastic in following the team's directions. Elderly people can explain and imitate hypertension exercise movements well.

At the time of delivering the material, the elderly already understood enough about hypertension. This can be seen from the answers to the evaluation questions given by the moderator to the elderly. The questions asked are very critical. The results of blood pressure examinations from 39 elderly people who attended, there were 4 elderly people who had blood pressure above normal ($>140/90$ mmHg). It can be said that the prevalence of people with hypertension is only 14%, because other elderly people have controlled it by regularly checking their blood pressure, doing physical activity and so on. This kind of activity is still needed by the elderly with material that adapts to the problems experienced by the elderly in Tiru. South.

Suggestions that can be made in this activity are grouping the elderly when carrying out counseling so that in the future implementation time can be maximized. It is hoped that this activity can be carried out continuously so that the knowledge and skills to maintain health and prevent disease can continue.

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