

AN INTERVENTION PROGRAM TO PREVENT HYPERTENSION AMONG THE ELDERLY

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Abstract

Hypertension or high blood pressure is a condition when blood pressure is above the normal limit (130/80 mmHg or more). This condition can cause various health complications that are life-threatening if left untreated. In fact, this disorder can cause an increased risk of heart disease, stroke and even death. The aim of community service is to apply scientific theories in the health sector to overcome problems that occur in the field so that they can benefit society, actively participate in the development process health, increasing community empowerment in the health sector, increasing the community's ability academically to apply scientific theories both independently and in groups, helping to overcome problems faced by the government and society using practical scientific methods.

Following up on problems found in Meruyung Village/subdistrict, Limo District, Depok Regency, West Java. where elderly people are found to suffer from hypertension, it is necessary to provide health education about hypertension, the impact and prevention of hypertension by evaluating blood pressure examinations and providing herbal medicine with cucumber juice. Out of the 18 elderly people who took part in this activity, 97% (15 people) of the elderly had hypertension. The enthusiasm of the community supports this activity. The strategy for lowering blood pressure is to utilize the abundant natural resources in the area, this time by making cucumber juice to lower blood pressure.

Keywords: *Hypertension; Community Service, Cucumber*

INTRODUCTION

Health development aims to increase awareness, ability and willingness to live healthily for every resident in order to achieve the highest level of health. In other words, the community is expected to be able to play a role as actors in health development in maintaining, maintaining and improving the level of their own health, as well as playing an active role in realizing the health of their community, apart from that, also improving the welfare of the family and community as well as increasing public awareness of the importance of Healthy Living Behavior and Healthy (*PHBS*). To be able to achieve these health development goals, the Indonesian Ministry of Health has a vision and mission (RI Ministry of Health, 2021)

Village Community Health Development (*PKMD*) is a series of community activities carried out on the basis of mutual cooperation and self-help in order to help themselves in solving problems to meet their needs in the health sector and in other related fields in order to be able to achieve a healthy and prosperous life (Effendy, 1998)

TPMB Ermiyati, Meruyung sub-district, Limo sub-district, Depok district, West Java, is a form of health service in the field of basic health. Midwife practice is a series of health service activities provided by midwives to patients (individuals, families and communities) in accordance with their authority and abilities. Midwives who practice must have a Midwife Practice License (SIPB) so they can practice according to health advice or programs (Imamah, 2012).

The practice of independent midwife services is a health service provider, which has a significant contribution in providing services, especially in improving the welfare of mothers and children. So that people who use midwife services can get access to quality services, there needs to be a clear regulation of midwife practice services. Preparations before midwives carry out practice services such as licensing, place, room, practice equipment and administrative equipment must all be in accordance with standards (Imamah, 2012).

The problem we encountered in RW 02, Meruyung Village, Limo District. Depok,

West Java, including the following; (1) Low coverage of exclusive breastfeeding, (2) Hypertension in the elderly, (3) Emesis in pregnant women in the 1st trimester. Hypertension or high blood pressure is a condition when there is an increase in blood pressure, namely above 140 mmHg for systolic blood pressure and 90 mmHg for diastolic blood pressure (Septimar et al., 2020). There are two types of hypertension treatment, namely pharmacological and non-pharmacological treatment. Pharmacological treatment is the management of hypertension using chemical drugs whose effect is only to reduce blood pressure, while non-pharmacological treatment is the main choice for increasing blood pressure because apart from having no side effects that are harmful to health.

Normal blood pressure for adults is between 90/60 mm/Hg and 120/80 mm/Hg. Normal blood pressure in the elderly is in a slightly higher range, namely 130/80 mmHg to 140/90 mmHg. If systolic is consistently between 120-140 mmHg and diastolic is between 80-90 mmHg, then you are considered prehypertensive. If it is more than 140/90 mmHg, then the pressure is at risk of developing hypertension (Cholifah et al., 2018)

Cucumbers are said to be a healthy food for blood vessels and the heart, where the food contains potassium which works to widen blood vessels so that blood pressure decreases. The water content reaches 90% in cucumbers and the high potassium will remove salt from the body and cucumber fruit is no stranger to local people, the ingredients are easy to get and the price is relatively affordable for the community (Kurniadi & Nurrahmani, 2020)

Cucumbers have various nutritional contents, including potassium, calcium and magnesium. Various studies have proven that there is a close relationship between potassium, calcium and magnesium intake and reducing blood pressure. The lower the potassium intake, the higher the blood pressure will be. The sodium/potassium ratio is also related to blood pressure. Reducing sodium intake by 100 mmol per day and potassium consumption by up to 70 mmol per day, it is predicted that systolic blood pressure will decrease by 3.4 mmHg. Potassium intake has an effect on blood vessels, namely potassium will reduce peripheral vascular resistance which can directly widen arteries, increase water and sodium excretion from the body, suppress reninangiotensin secretion, and stimulate sodium-potassium pump activity (Ivana et al., 2021)

Research on giving cucumber juice on changes in high blood pressure in hypertension sufferers found that giving cucumber juice can reduce systolic blood

pressure after giving cucumber juice (Asadha, 2021). Apart from consuming cucumbers, physical activity such as exercise has been proven to increase endorphin levels four to five times in the blood. So, the more you do exercise, the higher your endorphin levels will be. When someone does exercise, endorphin will be released and captured by receptors in the hypothalamus and limbic system which function to regulate emotions. Increasing b-endorphin has been proven to be closely related to reducing pain, improving memory, improving appetite, sexual ability, blood pressure and breathing. Exercise can also reduce blood pressure by reducing body weight so that the heart will work less and blood pressure will decrease (Harawan & Tatisina, 2020)

We have carried out community midwifery practices in RW 02, Meruyung Village, Limo District, Depok Regency, West Java 2023 with the report title "Community Service with Tensi Carts (Anti-Hypertension Drug Exercise) for the Elderly in RW 02 Meruyung Village, Kec. Limo, Kab. Depok" This report is authentic evidence that can describe all series of activities in the field starting from the planning process to evaluating activities accompanied by other supporting documents.

Method

The implementation of community service was carried out by collecting data through questions and answers to cadres, RT heads, midwives, and patient medical record books at TPMB. The data collection that we found was; (1) Finding a baby who is not exclusively breastfed, (2) Hypertension in the elderly, (3) Pregnant women in the first trimester who experience emesis. The method we apply in determining problem priorities is Focus Group Discussion (FGD). Participants who attended this activity were: Representatives of Community Figures, RT women, Head of Cadre and 2 cadres and representatives from TPMB midwives. After discussion, it was decided that the priority problem was hypertension in the elderly.

Table 1
Determining the Size of the Problem

Problem	Big problem	Emergency	Cost	Convenience	Total value	Rank
Low coverage of exclusive breastfeeding	56	35	64	64	219	2
Hypertension in the elderly	48	72	56	64	240	1

Emesis	35	35	49	56	175	3
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The service time is from November 22 to December 1 2023. The location of the service is at TPMB Ermiyati, Meruyung RW 02 sub-district, Kec: Limo, Kab. Depok, West Java. The materials and instruments used are banners, flipchart paper, markers, leaflets, thumbtacks, styrofoam, cucumbers, drinking bottles, graters, knives, filters, TVs for elderly exercise videos, glasses, drinking water, scales, blood pressure meters and stethoscopes, snacks and meals.

Results

Based on the situation analysis from TPMB data collection activities, various problems were identified, among which the priority problems were hypertension in the elderly in the TPMB Ermiyati area and lack of knowledge and public awareness about hypertension treatment. Based on the results of discussions with midwives, cadres, RT and groups, we agreed to provide education about hypertension and provide complementary therapy to treat hypertension. So we got the innovation GEROBAK TENSI (Anti Hypertension Intervention Program) by making cucumber juice. This service activity aims to increase knowledge, as well as provide knowledge about complementarity to the community in dealing with hypertension.

This activity was attended by 18 elderly people with blood pressure 140/90 – 150/110 mmHg. In the first activity, namely counseling, participants received information about the meaning of hypertension, causes, impacts, prevention and treatment of hypertension in medical and complementary ways. During the outreach, the elderly who participated enthusiastically asked questions to the service team. The second activity is giving cucumber juice and how to make cucumber juice so that it can be done at home. In this session, participants understand how to make cucumber juice correctly and correctly.

The participants were very active in interacting with the team and there were questions about myths and facts regarding problems they knew about or experiences around the participants. Participants were also very happy because the team introduced light exercise movements that they could do at home. The decrease in blood pressure that occurs because cucumbers contain potassium which causes obstruction of the Renin Angiotensin System can also cause a decrease in aldosterone secretion, resulting in a

decrease in renal tubular reabsorption of sodium and water. As a result of the mechanism that occurs, diuresis increases which causes a reduction in blood volume, so that blood pressure decreases (Margareta, et al, 2021).

Aisyah's research (2014) states that cucumbers have various nutritional contents, including potassium and magnesium. Various studies have proven that there is a relationship between potassium, calcium and magnesium intake and lowering blood pressure. The lower the potassium intake, the higher the blood pressure will be. The sodium/potassium ratio is also related to blood pressure. Reducing sodium intake by 100 mmol per day and systolic blood potassium consumption is predicted to decrease by 3.4 mmHg. Potassium intake has an effect on blood vessels, namely potassium will reduce peripheral vascular resistance which can directly dilate arteries, increase water and sodium excretion from the body, suppress renin sodium secretion, and stimulate sodium-potassium pump activity. Furthermore, based on the results of research by Sartika (2020), the results of this research are that there is an influence between giving exercise to the elderly on reducing systolic and diastolic blood pressure in those with hypertension. There is a difference in blood pressure before and after treatment in the elderly for systolic and diastolic hypertension.

In line with Izhar's research (2017), the results of his research show that there is an influence of elderly exercise on blood pressure. There was a decrease in the average diastolic blood pressure before exercise was 86.81 mmHg to 82.89 mmHg after exercise for the elderly.



Figure 1. Blood Pressure Measurements



Figure 2. Health Educatio

CONCLUSION

This community activity has the impact of community participation in improving the health of the elderly. The innovations provided can continue to be implemented so that problems that occur can be resolved in the region. From the evaluation results, it is hoped that the elderly will know and understand the importance of knowledge about hypertension and treatment using cucumber juice herbs. The GEROBAK TENSI innovation (anti-hypertension intervention) can be used as a preventive measure to overcome the same problem in other areas.

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