

**MANFAAT SENAM HIPERTENSI AIR REBUSAN DAUN SALAM TERHADAP  
PENURUNAN TEKANAN DARAH LANSIA DI WILAYAH PKM SIRNAJAYA**Lusi Noviyanti<sup>1\*</sup>, Mutianingsih<sup>2</sup>, lin Ira Kartika<sup>3</sup><sup>1-3</sup>STIKes Bhakti Husada Cikarang

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Doi: <https://doi.org/10.33024/jkpm.v7i4.13895>**ABSTRACT**

The prevalence of hypertension in the elderly in the world according to WHO data is around 972 million people or 26.4%. People around the world suffer from hypertension, with the possibility that this figure will continue to increase by 2025 to as much as 29.2%. Of the 972 million people with hypertension. The purpose of this activity is to increase the knowledge of the elderly, families, cadres and the community about hypertension exercises and bay leaf boiled water which can be used as an alternative treatment for elderly people with hypertension. The method of implementation includes measuring blood pressure before carrying out activities, followed by counseling activities, demonstration of elderly gymnastics and demonstration of making bay leaf decoction and drinking bay leaf decoction water and finally measuring blood pressure. This community service activity was carried out on November 27, 2023, which was carried out in the work area of the Sirnajaya Health Center, Bekasi Regency, community service was carried out for 1 day. The results of community service show that the average systole before action is 116.7 mmHg, the average post test systole is 114.8 mmHg, the average pre test diastole is 81 mmHg and post test diastole is 79.9 mmHg. So the value of blood pressure both systole and diastole has decreased after doing anti-hypertensive exercises and drinking bay leaf decoction water. So it is recommended hypertension gymnastics and drinking boiled bay leaves to reduce high blood pressure as a non-pharmacological treatment.

**Keywords:** Hypertension Gymnastics, Bay Leaf Boiled Water, Elderly Blood Pressure

**1. PENDAHULUAN**

The elderly population continues to increase in almost all countries in the world. WHO estimates that by 2030, 1 in 6 people in the world will be elderly. The increasing proportion of the elderly population requires special attention and treatment in the implementation of development. Age 60 years and above is the final stage of the aging process which has an impact on three aspects, namely biological, economic and social. It is estimated that by 2050, the number of 60-year-olds in the world will double to 2.1 billion. Meanwhile, the number of elderly aged 80 years and above is estimated to reach 426 million, of which two-thirds are estimated to be in developing countries (WHO, 2022).

The percentage of the elderly population in Indonesia reached 10.7% in 2020 and is expected to continue to increase until it reaches 19.9% in 2045. Based on gender, the number of elderly women is more than the elderly men, where the elderly female population reached 52.32% while the elderly male only amounted to 47.68%. (BPS, 2021).

The relationship between age at menopause and hypertension in elderly women has a p value of 0.499 with an OR value of 1.597 (CI: 0.412-6189) after controlling for high salt intake variables. Elderly who experience menopause older than average (50 years) will have a risk of developing hypertension 1.597 times greater than those who experience menopause younger after controlling for the variable of high salt intake. (Kartika, ., & PriAndini, 2019).

Based on the 2020 West Java Provincial Health Profile, the prevalence of hypertension based on blood pressure measurement results in West Java in 2020 was 34.7%, while the 2018 Riskesdas results were 39.6%, an increase compared to the 2013 Riskesdas results, which were 29.4%. Karawang Regency is included in West Java Province with a prevalence of hypertension of 100%. (Dinkes Jawa Barat, 2020)..

To prevent hypertension from causing further complications, appropriate and effective treatment is needed. One treatment that can be done is to use non-pharmacological therapy to treat hypertension, namely by using complementary therapy. Complementary therapies in the form of natural healing therapies include herbal therapy, nutritional therapy, progressive relaxation (ROP) to relax muscles that can reduce anxiety and hypertension, meditation (practice focusing the mind to stay calm), laughter therapy, acupuncture (using small needles), acupressure, aromatherapy (using fragrances to relax oneself), Bach flower remedy therapy (using flower fragrances), reflexology (massaging at certain points), and Complementary Herbal Therapy with Salam Leaf Boiled Water which is a non-pharmacological therapy that is herbal in nature by utilizing bay leaves that have been boiled for consumption.

Bay leaf (*syzygiumpolyanthum*) is one of the plants that has many benefits. Besides being used as a cooking spice, bay leaves are also used as herbal medicine where bay leaves are able to treat various diseases, one of which is hypertension which contains essential oils (citric, euganol) which are antibacterial, vitamins and flavonoids which are anti-inflammatory so that bay leaves have the function of lowering blood pressure in people with hypertension. (Hidayat, Hasanah, & Susantin, 2017)..

Physical activity such as exercise for the elderly can encourage the heart to work optimally, where exercise can increase energy demand by cells, tissues and organs, so as to increase return flow to blood vessels and cause stroke volume which will directly increase cardiac output. After continuous exercise, the blood vessels will become more elastic and the decrease in blood pressure will last for a long time. (Diaz & Shimbo, 2013; Hayes, Ferrara, Keating, McKnight, & O'Regan, 2022).

In the research of Solihin et al in 2020, the results showed that there was an effect of giving exercise to the elderly on lowering blood pressure in hypertension. Systolic blood pressure decreased, while diastolic blood pressure did not experience significant changes. (Solihin et al, 2020).. Kristiani and Dewi's research in 2018 showed that there was an effect before and after giving elderly gymnastics on the blood pressure of

hypertensive patients after doing elderly gymnastics 3 times a week for 40 minutes. (Kristiani & Dewi, 2021).

In conducting community service, the implementer is interested in combining several actions that can reduce hypertension. It is hoped that by exercising the body condition becomes more stable, by giving bay leaf boiled water so that the side effects caused are relatively few, can be done independently by families and communities because it is relatively easier to do compared to other non-pharmacological therapies, does not require a long time for therapy, and can reduce the adverse effects of pharmacological therapy for people with hypertension. Based on observations made by researchers in the Sirnajaya Health Center working area, the percentage of diseases suffered by the elderly is hypertension. People who seek treatment at the Puskesmas only get blood pressure lowering drugs without any non-pharmacological measures that can actually be taken to help accelerate blood pressure reduction in elderly patients by minimizing side effects.

The results of research by Nursobah, et al (2023) entitled *The Effect of Hypertension Gymnastics, Giving Salam Leaf Decoction Water and Deep Breath Relaxation on Decreasing Blood Pressure in Elderly Patients with Hypertension at Karawang General Hospital*. (Nursobah, Lilyanti, & Kartika, 2023) showed that before being given the intervention of bay leaf decoction water, hypertension gymnastics and deep breath relaxation, 30 respondents were obtained who experienced hypertension. A total of 15 people in the treatment group and 15 respondents in the control group, after being given complementary therapy treatment of bay leaf decoction water experienced changes in systolic and diastolic blood pressure in the treatment group, and 15 respondents in the control group did not experience a decrease in systolic and diastolic pressure. Based on the data obtained from the results of the study, the value of systolic blood pressure in the treatment group before giving hypertension gymnastics therapy, giving bay leaf decoction water and deep breath relaxation was 150 (140-190) and after treatment was 140 (130-180) with a P value of 0.001 and the diastolic blood pressure value before the treatment group was 80.00 (90-110) and diastolic blood pressure after therapy was 80.00 (70-100) with a P value of 0.003. So it can be concluded that there are changes in blood pressure before and after being given hypertension gymnastics therapy, giving bay leaf decoction water and deep breath relaxation in the treatment group. While the research data in the control group showed the results of systolic blood pressure in the control group before being given hypertension gymnastics therapy, giving bay leaf decoction water and deep breath relaxation was 150 (140-170) and after treatment was 150 (140-170) with a P value of 0.366 and the diastolic blood pressure value before in the treatment group was 90.00 (80-110) and diastolic after therapy was 90.00 (80-110) with a P value of 0.564. So it can be concluded that there is no change in blood pressure before and after being given hypertension gymnastics therapy, giving bay leaf decoction water and deep breath relaxation in the control group.

The purpose of this activity is to increase the knowledge of the elderly, families, cadres and the community about hypertension exercises and bay leaf decoction water which can be used as an alternative treatment for elderly people with hypertension.

## 2. PROBLEM AND QUESTION FORMULATION

### a. problem

Based on observations and information from cadres, many elderly people suffer from hypertension but do not regularly take medication because they are worried that it will damage kidney function. In addition, the low level of knowledge about hypertension makes people not pay much attention to their blood pressure. Elderly people who experience hypertension seek treatment at the Health Center, they are only given blood pressure lowering drugs without any non-pharmacological actions that can actually be taken to help accelerate blood pressure reduction in elderly patients.

### b. Question formulation

Giving non-pharmacological combination therapy can help accelerate the process of lowering blood pressure in the elderly.

### c. Location Map

Community service activities are carried out in the working area of Posbindu Mawar VI Sirnajaya Health Center.

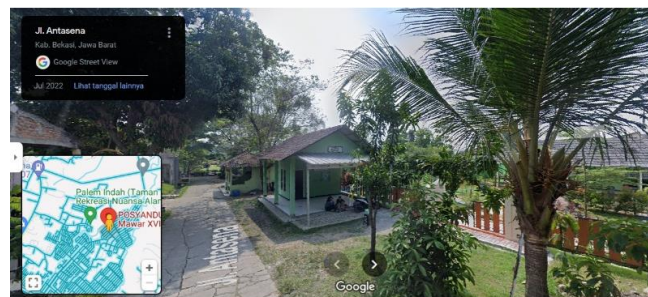


Figure 1. Lokasi PkM

## 3. LITERATURE REVIEW

According to the Regulation of the Minister of Health of the Republic of Indonesia Number 25 of 2016, an elderly person is someone who has reached the age of 60 (sixty) years and above. (Permenkes, 2019). A person who has entered old age will experience the aging process. Aging or becoming old is a human cycle process that starts from the beginning of life to the next cycle that a person experiences through the stages of life, namely children, adults and seniors (Kholifah, 2016a). During the aging process various changes occur, such as functional impairment, dependence and risk of falls. Vulnerability in the elderly is a biological condition that results in an unfavorable response from several physiological systems to maintain homeostasis. (Mañas et al., 2017). The elderly experience a period of decline, namely physical factors and psychological factors, but motivation plays an important role and affects the decline. If the elderly have low motivation in carrying out activities / eating activities, it accelerates the process of physical decline, but on the contrary, if the elderly have high motivation, the physical decline that will occur will appear longer. (Kholifah, 2016a).

Changes that occur in the elderly (Mujahidullah, 2012):

### a. Physical Changes

- 1) When a person enters old age, the condition of the cells in the body will change, such as reduced in number, larger in size so that the cell repair mechanism will be disrupted and the proportion of proteins in the brain, muscles, kidneys and blood.
- 2) The nervous system, the condition of the nervous system in the elderly will experience changes, such as loss of hearing ability in the ear, the cornea of the eye becomes cloudy, loss of accommodation power and decreased visual field, decreased response to pain and sweat glands, decreased respiratory muscles so that the ability to smell is also reduced.
- 3) The digestive system in the elderly will experience a decrease in appetite, frequent constipation, decreased saliva production and intestinal peristalsis will also decrease.
- 4) In the genitourinary system, in the elderly, the kidneys shrink so that blood flow to the kidneys decreases.
- 5) Musculoskeletal system, bones lose fluid and become more brittle, the body becomes shorter, joints become stiff and tendons shrink.
- 6) Cardiovascular system, in the elderly the heart organ will experience a decrease in pumping blood, changes in heart size, decreased heart rate, heart valves in the elderly will be thicker and stiffer due to lipid buildup. Blood pressure increases in the elderly due to loss of arterial distensibility.

b. Intellectual Change

As a result of the aging process, there is also a decrease in brain abilities such as changes in IQ, namely decreased right brain function so that the elderly will have difficulty in non-verbal communication, problem solving, concentration, memory and difficulty recognizing someone.

c. Hypertension Exercise

Hypertension exercise is exercise that aims to increase blood flow and oxygen supply to the active muscles and skeleton of the body, especially the heart muscle. (Hernawan & Rosyid, 2017). Exercise can increase the need for oxygen in the cells for the process of energy formation, resulting in an increase in heart rate, so that cardiac output and stroke volume increase. Thus blood pressure will increase. After resting, the blood vessels will dilate or stretch, and the blood flow will decrease for a while, about 30-120 minutes later it will return to the pre-exercise blood pressure. (Mahardani, 2010)..

If exercise is done regularly and continuously, the reduction in blood pressure will last longer and your blood vessels will be more elastic. The mechanism of lowering blood pressure after exercise is because exercise can relax blood vessels. So, by dilating the blood vessels, blood pressure will decrease.

d. When to do Hypertension Exercise

Hypertension exercise is a type of physical exercise that can burn calories and exercise the heart muscle. Exercise is done for 30 minutes a day and 5 days a week. This can increase energy in the elderly



## e. Gymnastics Techniques and Methods

## 1) Warm-up

General movements (involving as many muscles and joints as possible) are performed slowly and carefully. Performed in conjunction with stretching. It takes about 8-10 minutes. In the last 5 minutes the warm-up is faster. Warming up is intended to reduce injury and prepare the body's cells to participate in the increased metabolic process.

## 2) Elderly sports

## Preparation:

- a) Preparing the client (elderly)
- b) Prepare the room as comfortable as possible
- c) Perform informed consent

## Implementation

- a) Preparing the room
- b) Assign senior positions
- c) Explain to the elderly the procedures to be carried out, explain the purpose and benefits of the procedures carried out in elderly gymnastics
- d) Perform walking movements in place for 2 x 8 counts
- e) Clap hands, pat the palms of the right and left hands (2x8 counts)
- f) Finger clap, clap the fingers of the right and left hands (2x 8 counts)
- g) Lock hands, bring right and left hands together (2x8 counts)
- h) Cross your thumbs, bring your right and left thumbs together in a crossing direction
- i) Bring your little fingers together, open your palms facing up and bring your right and left little fingers together (2x8 counts)
- j) Bring your index fingers together, open your palms facing downwards, and bring your right and left index fingers together (2x8 counts)
- k) Tap your wrists, stretch both hands forward, then tap the right and left wrists alternately (2x8 counts)
- l) Tap the pulse, stretch your hands forward, then tap the pulse on the right and left wrists alternately (2x8 counts)
- m) Press your fingers, bring your palms and fingers together, and move them back and forth (2x8 counts)
- n) Open and make a fist, stretch your hands together then make a fist and open your fingers (2x8 counts)
- o) Pat the backs of your hands, stretch your hands forward then pat the backs of your right and left hands alternately (2x8 count)
- p) Pat your hands and shoulders, stretch your arms then pat your right and left hands and shoulders alternately (2 x 8 counts)
- q) Pat the waist. In a slightly bent standing position, pat your waist with both hands (2x8 counts)
- r) Pat the thighs, in a standing position, pat the right and left thighs with both hands (2x8 counts)
- s) Pat the sides of the calves, standing slightly bent, pat the right and left calves with both hands (2 x 8 count)
- t) Squat to stand, standing slightly bent over, pat both right and left calves with both hands (2x8 counts)

- u) Pat your stomach, pat your stomach with both hands alternately (2x8 count)
- v) Stand on tiptoes, stand up straight and both hands in front of your stomach, then do a tiptoe movement (2x8 counts)

f. *The effect of exercise for hypertension in the elderly in lowering blood pressure*

Apart from being a form of physical activity, this exercise is useful for improving blood flow and oxygen supply to the heart, relaxing blood vessels, dilating blood vessels, and reducing body weight.

Hypertensive gymnastics is an exercise indicated for hypertensive patients and the elderly to lose weight and manage stress (factors that increase hypertension) which is done for 30 minutes and done at least twice a week. (Hernawan & Rosyid, 2017). Another goal is to increase blood flow and oxygen supply to the active muscles and skeleton, especially the heart muscle, so as to lower blood pressure. After resting, the blood vessels will dilate or stretch, and the blood flow will decrease for a while, about 30-120 minutes later it will return to the pre-exercise blood pressure. If you exercise regularly and continuously, your blood vessels will be more elastic and the drop in blood pressure will last longer. Relaxed blood vessels will widen so that blood circulation becomes smooth, the pressure of blood volume in blood vessels decreases and optimal heart function causes blood pressure to decrease. (Wijayanti, Setiawan, & Wardani, 2020).

Based on the results of research by Bukhori & Wijaya (2022) entitled "The effect of deep breath relaxation on lowering blood pressure in elderly people with hypertension" that the provision of deep breath relaxation techniques has an effect in lowering blood pressure in hypertensive patients. (Bukhori & Wijaya, 2022)

g. *Giving Salam leaf decoction water*

1) Definition

Bay leaves have a fragrant smell so many people use them as a flavoring ingredient. Besides being used for medicine, bay leaves can also be used as herbal plants. In addition to bay leaves, other parts of the bay tree that can be utilized as medicinal plants include roots, fruit and bark, but the most widely used by the community is the bay leaf. (Novira & Febrina, 2019).

2) Therapeutic Technique of Bay Leaf Decoction

Making bay leaf boiled water is as follows (Suzana Moza & Patriona Emitra, 2022) :

a) Materials and tools required include:

- 1) 5 bay leaves
- 2) Water 200 ml (2 cups)
- 3) Stove and pot
- 4) Filter
- 5) Measuring cup
- 6) Stir

b) Implementation of making bay leaf cooking water

- 1) Wash the bay leaves thoroughly
- 2) Put 200 ml of water in a saucepan that has been boiled to a boil

- 3) After the water boils, put 5 bay leaves that have been washed clean earlier
- 4) Wait a while, until the water becomes 100 ml (1 glass)
- 5) Then strain the bay leaves that have been boiled when it is cold

d. Teknik minum

- 1) Ramuan tersebut diminum setiap pagi dan sore hari
- 2) Air rebusan daun salam diminum setelah makan
- 3) Minum 2 gelas per hari selama 1 minggu
- 4) Perhatian: saat mengonsumsi air rebusan daun salam, jangan minum alkohol.

h. Mechanism of Salam Leaf in Affecting Blood Pressure

Bay leaves contain flavonoid compounds, where flavonoids contain quercetin which has vasodilator, antiplatelet and antiproliferative effects and lowers blood pressure, resulting from oxidation and repair of organs that have been damaged by hypertension. Thus, flavonoids can be used to reduce the risk of myocardial infarction and stroke. (Yunus, 2015)..

The mineral content in bay leaves makes blood circulation smoother and lowers high blood pressure. Bay leaves also contain essential oils eugenol and methyl cavicol, as well as ethanol which plays an active role as an anti-fungal and bacterial. The chemical content of bay leaves consists of various chemical compounds, such as saponins, triterpenoids, flavonoids, tannins, essential oil alkaloids (sesquiterpenes, lactones, and phenols)(Savitri, 2016).

i. Health Improvement in the elderly

The health sector is one sector that can play a role in preventing falls in the elderly. Posbindu lansia is an integrated service post as a community self-help activity in the health sector carried out in an area with the aim of the elderly in the surrounding area getting health services provided by the puskesmas by involving the participation of the elderly, families, community leaders and community organisations. Posbindu activities provide services that prioritise promotive and preventive services without neglecting curative and rehabilitative efforts, with the aim of improving the health of the elderly with a happy and empowered old age.(Kholifah, 2016a).

However, in reality the role of the health sector in efforts to prevent and overcome hypertension problems in the elderly carried out by the health centre only conducts pharmacological treatment, even though it can use non-pharmacological methods. Based on observations, it was found that the knowledge and desire of the elderly and nurses to improve the health of the elderly in handling hypertension is still low.

j. Knowledge

According to the Big Indonesian Dictionary (KBBI), knowledge can be defined as everything that is known, intelligence, and everything that is known with regard to something, the aspects of knowledge in Bloom's taxonomy are as follows:

- 1) Knowledge. Knowing is defined only as remembering (memory). A person is required to know or recognize facts without being able to use them.



- 2) Comprehension. Understanding an object is not just knowing, not just being able to say its name, but you must be able to interpret the known object correctly.
- 3) Application. Application is defined as when someone who understands an object can use and apply the known principles to other situations.
- 4) Analysis. Analysis is a person's ability to decompose and separate, then look for the relationship between the components contained in an object.
- 5) Synthesis. Synthesis shows a person's ability to summarize or place in a logical relationship the components of knowledge he has. Synthesis is the ability to develop new formulations from existing formulations.
- 6) Assessment (evaluation). Evaluation is related to a person's ability to make an assessment of a particular object based on criteria or norms that apply in society. (Notoatmodjo, 2010).

Factors that influence knowledge are :

1. Education, a person's educational background affects the learning process, the higher a person's normative education, the easier it is for someone to receive information, but not absolutely the knowledge received is obtained from formal education, but many things can increase a person's knowledge both through non-formal education and informal education. So that a person will experience an increase in knowledge along with that person obtaining information, so the more information received, the easier it will be for someone to increase their knowledge.
2. Sources of information, information obtained from both formal and non-formal education can provide short-term knowledge, resulting in changes and increases in knowledge. Means of communication such as television, radio, newspapers, magazines, counseling, and others that have a major influence on the formation of public opinions and beliefs.
3. Age: Age affects a person's ability to understand and thinking patterns. With increasing age, a person's mindset and understanding will develop, so that the knowledge gained will increase. (Notoatmodjo, 2010).

#### 4. METHODS

Elderly people in their families who suffer from hypertension and go to the Puskesmas for treatment are only given blood pressure lowering drugs without any non-pharmacological measures that can actually be taken to help accelerate blood pressure reduction in elderly patients.

Sukaragam village is included in the new Serang sub-district area. Sirnajaya Health Center working area. Based on data from BPS Bekasi Regency, the population of Sukaragam Village in 2018 was 49,316 men; 48,275 women and a total of 97,592 people. This community service activity was carried out on 27 November 2023, which was carried out in the work area of the Sirnajaya Health Center, Bekasi Regency, starting with exploring the location and coordinating with the Head of the Health Center and the Elderly program holder, to conduct a situation analysis and problem identification, then an agreement was reached to conduct socialization and implementation. Community service was carried out for 1 day regarding the benefits of hypertension exercises, the use of bay leaf

boiled water in lowering blood pressure in elderly people with hypertension in Sukaragam Village, Posyandu Mawar VI in the Sirnajaya Puskesmas working area, with 21 participants, with the following description of activities:

- a. The activity began with measuring blood pressure using a spigno manometer manually and pre-testing.
- b. Followed by health education about hypertension exercises and the benefits of bay leaf boiled water.
- c. After that, do hypertension exercises. After 10 minutes, blood pressure was measured
- d. They were given a bay leaf decoction drink after 10 minutes blood pressure was measured
- e. At the end of the activity, a post test was conducted and the average blood pressure measurement results from each activity were analyzed..

## 5. COMMUNITY SERVICE RESULTS AND DISCUSSION

### a. Results

The following are the results of community service activities:

**Table 1**  
**Characteristics Of Respondents Based On Age, Pre Test Value, Post Test Value, Bp Systole And Diastole In Posbindu Mawar Vi Village Sukaragam Subdistrict Serang Baru In 2023**

VARIABLES	MEAN	MODE	SD	MIN	MAX
<b>Ages</b>	48.05	43	14.47	29	85
<b>Pre Test Value</b>	10.57	10	1.47	9	14
<b>Post Test Value</b>	11.86	11	1.62	9	14
<b>Pra Tes Systol</b>	116.7	120	16.23	90	150
<b>Sistol Pasca Tes</b>	114.8	120	12.49	90	140
<b>Pre Test Diastol</b>	80.95	80	9.44	60	100
<b>Post-Test Diastol</b>	79.52	80	3.84	70	90

Based on the table above, the average age is 48.05 years, the minimum age is 29 years and the maximum value is 85 years. The average value of the pre-test was 10.57, the minimum value was 9 and the maximum value was 14. The average value of the post-test was 11.86, the minimum value was 9 and the maximum value was 14, there was an increase in the average value of knowledge of the respondents.

Systolic blood pressure before exercise and before consuming bay leaf decoction averaged 116.7 mmHg, minimum 90 mmHg, and maximum 150 mmHg. Systolic blood pressure after exercise and after consuming bay leaf decoction averaged 114.8 mmHg, a minimum of 90 mmHg, and a maximum of 140 mmHg. Diastolic blood pressure before exercise and before consuming bay leaf decoction averaged 80.95 mmHg, a minimum of 60 mmHg, and a maximum of 100 mmHg. Diastolic blood pressure after exercise and before consuming bay leaf decoction averaged 79.52 mmHg, minimum 70 mmHg, and maximum 90 mmHg. So blood pressure values, both systole and diastole, decreased after doing anti-hypertension exercises and drinking bay leaf decoction water.

**Table 2**  
**T-Test Results Of Differences In Knowledge Before And After Counseling For Respondents Of Posyandu Mawar Vi In Sukaragam Village 2023**

Variable	N	P Value
Post-Test Score < Pre Test Value	3	0.007
Post-Test Score > Pre Test Value	14	
Post-Test Score = Pre Test Value	4	
<b>Total Score</b>	<b>21</b>	

Based on the table above, there are 3 respondents with post scores < pre scores, 14 respondents with post scores > pre scores and 4 respondents who still have no change in pre and post counseling scores. The statistical test results show that there is a difference in the average knowledge after counseling on hypertension care for people with hypertension with a p value of 0.007 (<0.05).

Photos of Community Service activities:



**Figure 2**  
**Preparation for community service activities**

The image above shows the preparation for making boiled bay leaves according to the required size.



**Figure 3**  
**Blood Pressure Check Before Activity**

The picture above shows the activity of measuring blood pressure before exercise and drinking bay leaf decoction water.



Figure 4

The picture illustrates the elderly gymnastics activities carried out by all participants.

#### b. Discussion

Community service activities were carried out at Posyandu Mawar VI, Sukaragam Village, Serang Baru District, which is in the fostered area of the Sirnajaya Health Center, Bekasi Regency, on November 27, 2023. The results of these activities have been presented in the previous chapter, so this chapter will discuss the results of community service activities.

Based on the results of community service, the average age data is 48.05 years, the minimum age is 29 years and the maximum value is 85 years. Age affects a person's ability to understand and think. With increasing age, a person's mindset and capacity to capture will develop so that the knowledge gained will increase. The older one gets, the more one's understanding and mindset will develop. The age factor affects aspects of a person's knowledge. Age plays a role in determining a person's maturity, but it is not the only determining factor because maturity is determined by how a person's learning process changes itself for the better, based on the knowledge, experience, or skills it has. (Notoatmodjo, 2010).

The results of community service were obtained. The average pre-test score was 10.57, minimum score 9 and maximum score 14. The average post-test score was 11.86, minimum score 9 and maximum score 14, there was an increase in the average score of respondents' knowledge. . One way to increase knowledge is with a source of information. Information obtained from both formal and non-formal education can provide short-term knowledge (direct impact), resulting in changes and improvements in knowledge. Technological advances provide a variety of mass media that can influence people's knowledge of new information. Means of communication such as television, radio,

newspapers, magazines, counseling, and so on have a great influence in shaping people's opinions and beliefs. One source of information is counseling activities which are a form of effort to increase community knowledge.

The results of community service show that systolic blood pressure data before exercise and before boiling bay leaves averaged 116.7 mmHg, a minimum of 90 mmHg, and a maximum of 150 mmHg. Systolic blood pressure after exercise and after boiling bay leaves averaged 114.8 mmHg, a minimum of 90 mmHg, and a maximum of 140 mmHg. Diastolic blood pressure before exercise and before consuming bay leaf decoction averaged 80.95 mmHg, a minimum of 60 mmHg, and a maximum of 100 mmHg. Diastolic blood pressure after exercise and before consuming bay leaf decoction averaged 79.52 mmHg, minimum 70 mmHg, and maximum 90 mmHg. So blood pressure values, both systole and diastole, decreased after doing anti-hypertension exercises and drinking bay leaf decoction water.

According to Pramana et al (2016) The cause of hypertension in the elderly is a change in the elasticity of the aortic wall which decreases, in addition the heart valves thicken and become stiff so that the ability of the heart to pump blood decreases by 1% every year after the age of 20 years, as a result the ability of the heart to pump blood decreases, causing contractions and decreasing volume. Loss of blood vessel elasticity, this occurs due to the lack of effectiveness of peripheral blood vessels for oxygenation. And resulting in peripheral vascular resistance (Pramana, 2016).

As it is known that bay leaves contain flavonoid compounds, which flavonoids contain quercetin, which has an effect as a vasodilator, antiplatelet, and antiproliferative and lowers blood pressure, the result of oxidation and repair of organs that have been damaged as a result of hypertension, The mineral content in bay leaves makes blood circulation smoother and reduces high blood pressure bay leaves also contain eugenol and methyl cavicol essential oils, as well as ethanol which plays an active role as an anti-fungal and bacterial.

Bay leaves contain flavonoid compounds, where flavonoids contain quercetin which has vasodilator, antiplatelet and antiproliferative effects and lowers blood pressure, resulting from oxidation and repair of organs that have been damaged by hypertension. Thus, flavonoids can be used to reduce the risk of myocardial infarction and stroke. (Yunus, 2015).

Hypertensive gymnastics is an exercise that aims to increase blood flow and oxygen supply to the active muscles and skeleton of the body, especially the heart muscle. (Hernawan & Rosyid, 2017). . Hypertensive gymnastics is an exercise that aims to increase blood flow and oxygen supply to active muscles and skeleton, especially the heart muscle.

According to Mahardani (2010) With exercise, the need for oxygen in the cells will increase for the process of energy formation, resulting in an increase in heart rate, so that cardiac output and stroke volume increase. Thus blood pressure will increase. After resting, the blood vessels will dilate or stretch, and the blood flow will decrease for a while, about 30-120 minutes later it will return to the pre-exercise blood pressure. (Mahardani, 2010).



Exercising regularly and continuously has the effect of lowering blood pressure, which will last longer and blood vessels become more elastic. The mechanism of lowering blood pressure after exercise is that exercise relaxes the blood vessels. So, by dilating the blood vessels, blood pressure will decrease. Apart from being a form of physical activity, this exercise is beneficial for improving blood flow and oxygen supply to the heart, relaxing blood vessels, dilating blood vessels, and reducing body weight.

Hypertensive gymnastics is an exercise indicated for hypertensive patients and the elderly to lose weight and manage stress (one of the factors that increase hypertension) which is done for 30 minutes and performed at least twice a week. Another goal is to increase blood flow and oxygen supply to the active muscles and skeleton, especially the heart muscle, so as to lower blood pressure. After resting, blood vessels will dilate or stretch, and blood flow will temporarily decrease, about 30-120 minutes later it will return to pre-exercise blood pressure. Relaxed blood vessels will dilate so that blood circulation becomes smooth, the pressure of blood volume in blood vessels decreases and optimal heart function causes blood pressure to decrease. (Wijayanti et al., 2020).

## 6. CONCLUSIONS

Aging is associated with a decrease in physical and cognitive function in the human body, which is one of the factors that influence the occurrence of various diseases (Thomas et al., 2019). Some of the problems experienced by the elderly include physical problems including physical conditions that begin to weaken which often occur in the elderly, namely inflammation in the joints that interfere with doing heavy physical activity, decreased sense of vision, decreased sense of hearing, and decreased endurance making it easier for the elderly to be attacked by disease. (Kholifah, 2016b).

The implementation of community service activities carried out at Posbindu Mawar in the PKM Sirnajaya working area in Bekasi district ran smoothly and very well in accordance with the expected achievements/targets. This is evidenced by the activeness and enthusiasm of the community in the delivery of material (question and answer), and the results of the material and demonstrations carried out have been mastered by the community. This activity is one way to provide understanding, education, persuasion and promotion to the community in order to maintain health, especially on the problem of hypertension, utilizing medicinal plants around the house / environment for health.

### Suggestion

Socialization of hypertension management and demonstration of hypertension gymnastics movements can be applied to sports activities that can provide good benefits for the body of people with hypertension. And it is hoped that activities like this can become routine activities by involving the Puskesmas that covers the village.

Non-pharmacological interventions that have been taught are expected to be applied in the daily lives of the community, not only posbindu mawar tp PKM Sirnajaya working area.



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