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PROCESSING OF CHURCH PUMP JUICE TO REDUCE HYPERTENSION IN THE ELDERLY IN THE WORK AREA OF SITA MANGGARAI PUSKESMAS EAST

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Abstract

Lecturer community service program with the theme. Processing of Siamese Pumpkin Juice to Reduce Hypertension in the Elderly in the Work Area of the Sita Health Center, East Manggrai Regency. Hypertension is persistent blood pressure where the systolic pressure is 140 mmHg and the diastolic pressure is 90 mmHg, based on two or more measurements and checked every 5 minutes. Chayote is a subtropical plant and belongs to the cucurbitaceus species which is often used as food. The benefits of potassium, alkaloids, and flavonoids in chayote can reduce blood pressure. The purpose of the Lecturer's community service activities is to use chayote to be processed into juice that is beneficial for health, especially to reduce high blood pressure/hypertension in the elderly in the work area of the Sita Health Center. the number of elderly at the Sita Health Center is 120 people and 90 people have hypertension and 6 of them have a stroke due to hypertension, because of the above problems the nursing study program lecturer team held community service activities by processing pumpkin syam into juice to reduce hypertension in the elderly because pumpkin juice Siamese affects reducing blood pressure in hypertensive patients. Patients with hypertension are expected to apply more ways to overcome hypertension by consuming herbal medicines such as chayote because it has many benefits and the price is cheap, and it is also easy to obtain.

Keywords: Hypertension, Chayote, Elderly.

INTRODUCTION

Hypertension is persistent blood pressure where the systolic pressure is 140 mmHg and the diastolic pressure is 90 mmHg, based on two or more measurements and checked every 5 minutes. Treatment of hypertension consists of non-pharmacological and pharmacological therapies. Non-pharmacological therapy is a complement to pharmacological therapy to get a better treatment effect and as a medium to delay the pharmacological approach with mild hypertension (Nurjanaah, 2015). Herbal therapy has various advantages for those who consume it, including more affordable prices, easy to obtain, does not cause side effects, and increased endurance because it contains many vitamins that are useful for health. Consuming herbs has been done by our ancestors in ancient times. After the development of science,

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conducted research on herbs that can cure various diseases. It was proven that herbs contain substances that can cure disease (Nurjanaah, 2015).

Treatment of high blood pressure is herbal, what is needed are fruits, vegetables, leaves, and roots that contain potassium (potassium), calcium, and other important substances. People with high blood pressure are generally deficient in potassium (potassium), and calcium. Therefore, consuming fruits that contain calcium, potassium, and potassium is the right way to reduce high blood pressure, one of which is chayote (Nurjanaah, 2015).

The benefits of potassium in chayote can reduce renin secretion which causes a decrease in angiotensin II so that vasoconstriction of blood vessels decreases and aldosterone decreases so that sodium and water reabsorption into the blood is reduced. Potassium also has a Na-K pumping effect, namely, potassium is pumped from the extracellular fluid into cells, and sodium is pumped out so that potassium can lower blood pressure. Chayote fruit contains saponins, tannins as well as alkaloids and the leaves of chayote contain saponins, polyphenols, and flavonoids (Nurhalimah, 2018)

The prevalence of hypertension in Indonesia obtained through measurements at the age of 18 years is 25.8%. There are 8 provinces where cases of hypertension patients exceed the national average, namely, Bangka Belitung ranks the highest (30.9%), followed by South Kalimantan (30.8%), East Kalimantan (29.6%), and West Java (29.4 %). The prevalence of hypertension in Indonesia obtained through a questionnaire diagnosed by health workers is 9.4%, and those diagnosed by health workers or currently taking medication are 9.5%. Respondents who have normal blood pressure but are taking hypertension medication are 0.7%. So the prevalence of hypertension in Indonesia is 26.5% (Tryanto, 2014). Based on data from RISKESDAS in 2018, the prevalence of hypertension in East Nusa Tenggara province was 4.6% and was below the national figure of 9.4%. The prevalence of hypertension is based on the 17 diseases in Manggarai Regency from 2017 to 2018 that hypertension is at the first level, with the number of people with hypertension in 2017 being 15,239 people.

Sita Health Center is one of the health centers in East Manggarai Regency, East Nusa Tenggara Province. The livelihoods of the community in this puskesmas area include farming, gardening, trading, and raising livestock. several plants thrive in this village, namely coffee, cloves, and some vegetables such as pumpkin, beans, tomatoes, eggplant, and others. While the livestock includes cows, buffalo, goats, chickens, pigs, and so on.

Based on the results of our survey, the total population in this village reached 2838 people with a total of 120 elderly people. Among the elderly, 90 people had hypertension and 6 others had strokes due to hypertension. There are 5 elderly people whose hypertension can be controlled with pharmacological therapy.

The potential possessed by several villages in this puskesmas is to have many useful vegetables, one of which is chayote. Chayote is a subtropical plant and belongs to the cucurbitaceus species which is often used as food. The benefits of potassium, alkaloids, and flavonoids in chayote can lower blood pressure. The village in the working area of this puskesmas also has large enough land to manage chayote products. In addition, transportation facilities are also good, lighting is also good with details using asphalt roads and is reached by PLN.

The problem faced by several villages in the working area of the Sita Health Center is

that there are many elderly who experience hypertension or high blood pressure, then the people do not understand and have not been able to manage chayote to be used as a health product that functions to reduce high blood pressure.

Regarding natural resources (SDA), several villages in the confiscated health center area are classified as having adequate natural resources, this can be seen from the agricultural products and community plantations which continue to increase every year. While related to human resources (HR), the community in the area of this health center is still not able to manage their crops or plantation products. This can be seen clearly from the way they manage their agricultural products is still monotonous, ie 90% of the people there are only able to sell their agricultural products. In addition, residents there admit that there are still unemployed residents. People also do not understand the importance of chayote for health in people with hypertension, so chayote is often wasted or even given to livestock, such as pigs. Because of the problems mentioned above, the team of lecturers of the nursing study program at the Catholic University of Santu Paul Ruteng carried out community service by processing syam pumpkin juice to reduce hypertension in the elderly in the work area of the Sita Health Center. The main problem at the Sita Health Center is that there are still many people with hypertension, especially the elderly. One of the main causes of hypertension in the elderly is irregular eating patterns. In addition to this, the lack of public knowledge about the benefits of vegetables that are around them. One of them is a chayote. In several villages in the working area of the Sita Health Center, many chayotes are planted by the villagers and are only used as vegetables. Though chayote has many benefits and nutritional content and is easy to reach or obtain.

The elderly in the work area of the Seizure Health Center were not considered in handling their health problems, especially the hypertension problem they experienced. This is proven by the large number of elderly who have hypertension, namely 90 people out of 120 total elderly in the working area of the Puskesmas.

IMPLEMENTATION METHOD

In planning the processing of chayote juice, it begins with conducting counseling about hypertension and hypertension prevention for the elderly, followed by processing chayote juice in the village where the health center works. The elderly must understand the benefits of chayote to prevent and treat hypertension.

Hypertension can be defined as persistent blood pressure where the systolic blood pressure is 140 mmHg and the diastolic pressure is 90 mmHg. Hypertension is a major cause of heart failure, stroke, and kidney failure. Hypertension is also called the "silent killer" because people with hypertension often do not show symptoms (Brunner and Suddarth, 2013). Hypertension is abnormally high blood pressure and is measured on at least three different occasions. Normal blood pressure varies with age, so any diagnosis of hypertension must be age-specific. However, in general, a person is considered to have hypertension if his blood pressure is higher than 140 mmHg systolic or 90 mmHg diastolic (Corwin, 2000).

Blood pressure is the amount of force exerted by the blood on the inside of the arteries when blood is pumped throughout the circulatory system. Blood pressure is never constant. Blood pressure can change drastically in seconds and adapt to the demands of the time (Herbert Benson, et al. 2012). Hypertension or better known as high blood pressure is a

chronic disease caused by excessive and almost constant blood pressure in the arteries. Pressure is created by the force of the heart when it pumps blood. Hypertension is associated with increased systemic arterial blood pressure both diastolic and systolic or both continuously (Sutanto, 2010).

According to Dalimartha, (2008) hypertension or better known as high blood pressure is a condition in which a person experiences an increase in blood pressure above normal which increases morbidity (morbidity) and mortality (mortality). The disease, better known as high blood pressure, is a major risk factor for the development of heart disease and stroke. Hypertension is also referred to as "the silent disease" because there are no signs or symptoms that can be seen from the outside. The development of hypertension proceeds slowly but is potentially very dangerous. The only way to detect hypertension is to examine it in depth. The speed of the heart rate and the emergence of a sense of excessive tension is not enough to claim someone has hypertension. To conclude the cause of hypertension is still difficult to do until now. Even experts think that hypertension is more accurately referred to as a "heterogenous group of diseases" than "single diseases" because of the complexity of the factors that cause it. Uncontrolled hypertension can cause the body's organs to become damaged. The damage can attack the functions of the brain, kidneys, and eyes, and can even result in paralysis of the organs of motion. However, the most common damage caused by this disease is kidney failure and stroke (Dalimartha, 2008).

Based on some of the definitions above, it can be concluded that hypertension or high blood pressure is a condition in which blood pressure has a chronic increase of more than 140/90 mmHg which occurs due to excessive and almost constant pressure on the arteries so that morbidity and mortality rates are high. (mortality) has increased because of it.

Based on the etiology (Tanto, 2014), hypertension is classified into:

1) Essential hypertension (80-90% incidence) hypertension of unknown cause.
2) Secondary hypertension is due to an underlying disease or disorder, such as renal artery stenosis, renal parenchymal disease, pheochromocytoma, hyperaldosteronism, and so on (Tanto, 2014).

Table 1 Classification of Hypertension according to WHO (source: Aspiani, 2016)

No.	Criteria	Blood pressure	
		Systolic	Diastolic
1.	Optimal	<120	<80
2.	Normal	<130	<85
3.	Grade I: mild hypertension	140-159	90-99
4.	Grade II: moderate hypertension	160-179	100-109
5.	Grade III: severe hypertension	≥180	≥110
6.	Isolated systolic hypertension	≥140	<90

Table 2 Classification of Hypertension (JNCVII).

Blood pressure classification	mmHg measurement results	
	Systolic	Diastolic
Normal	< 120	<80
Prehypertension	120-139	Atau 80-89
Hypertension grade 1	140-159	Atau 90-99
Hypertension grade 2	>160	Atau >100

The cause of hypertension, about 90% of the causes of hypertension are not known with certainty which is called primary or essential hypertension, while 7% are caused by kidney disorders or renal hypertension and 3% are caused by hormonal disorders or hormonal hypertension, and other causes (Muttaqin, 2012).

According to Smeltzer and Bare (2001), the causes of hypertension are divided into 2, namely:

1) Essential or primary hypertension

The exact cause of primary hypertension is still unknown. Approximately 90% of patients with hypertension are classified as essential hypertension while 10% are classified as secondary hypertension. Primary hypertension is a hypertensive condition in which a secondary cause of hypertension is not found. The causes of primary hypertension are:

a) Genetik dan ras
b) Faktor stress
c) Intake alcohol
d) Merokok
e) Lingkungan
f) Demographic
g) Gaya hidup

2) Secondary hypertension

Secondary hypertension is hypertension whose cause can be identified, including kidney vascular disorders, thyroid gland disorders (hyperthyroidism), and adrenal gland disease (hyperaldosteronism). The largest group of people with hypertension is essential hypertension, so the investigation and treatment are mostly aimed at essential patients.

The risk factors for hypertension are divided into 2, namely:

1) Risk factors that cannot be changed (Lemone & Burke, 2008).

a) Family history

Hypertension results from many genes and factors in a person in a family who suffers from hypertension. Genetic factors make the family suffer from hypertension related to increased amounts of intracellular sodium and sodium. Clients with both parents suffering from hypertension have a greater risk of occurring at a younger age.

b) Age

Primary hypertension appears between the ages of 30-50 years. The incidence increases at the age of 50-60 years than at the age of 60 years. In epidemiological studies, the prognosis is worse if the client suffers from hypertension at a young age.

c) Gender

In general, the incidence of hypertension is higher in men than women until the age of 55 years. Between the ages of 55-74 years, the risk is almost the same, after the age of 74 years women are at greater risk.

d) Ethnic

The mortality rate in adult hypertension is lowest in white women, namely 4.7%, white men, 6.3%, black men, 22.5%, and black women, 29.3%. The reason for the increase in blacks is unclear but this increase is supported by signs of lower renin levels, higher vasopressin sensitivity, higher salt intake, and higher environmental stress.

2) Factors that can be changed (Lemone & Burke, 2008).

a) Stress

Environmental factors or events, personality types, or physical phenomena can cause stress. Stress increases peripheral vascular resistance and cardiac output and stimulates the activity of the sympathetic nervous system, hence hypertension can occur. In primary hypertension, the role of stress is not clear, but if it is frequent and sustained, it can cause hypertrophy of vascular smooth muscle or affect central coordination pathways in the brain.

b) Obesity

Obesity, especially in the upper body where there is an increase in the amount of fat in the waist and abdomen, can be associated with the development of hypertension. Someone who is overweight in the buttocks, hips, and thighs has a lower risk of developing secondary hypertension.

c) Nutrients

Consuming high sodium can be an important factor in the occurrence of primary hypertension. A high-salt diet may stimulate the release of a natriuretic hormone, which may indirectly increase blood pressure. The sodium load also stimulates vasopressor mechanisms in the central nervous system. Studies also show that a diet low in calcium, potassium, and magnesium contributes to hypertension.

d) Substance abuse

Smoking, heavy alcohol consumption, and the use of illegal drugs is a factors in the occurrence of hypertension. Nicotine and drugs such as cocaine can cause blood pressure to increase immediately and become dependent it can lead to hypertension later in life. The incidence of hypertension is higher in clients who drink more than 30 ccs of ethanol every day. The impact of caffeine is controversial, caffeine raises blood pressure acutely but does not produce a lasting effect.

The mechanisms that control the constriction and relaxation of blood vessels are located in the vasomotor center, in the medulla in the brain. From this vasomotor center originate the sympathetic nerves, which continue down the spinal cord and exit the spinal cord column to the sympathetic ganglia in the thorax and abdomen. Impulses resulting from stimulation of the vasomotor center pass through the sympathetic nerves to the sympathetic ganglia. So

preganglionic neurons release acetylcholine, which will stimulate postganglionic nerve fibers into blood vessels, due to the release of norepinephrine causing blood vessel constriction. Various factors such as anxiety and fear can affect the response of blood vessels to vasoconstrictor stimuli. Individuals with hypertension are very sensitive to norepinephrine, although it is not clear why this occurs.

Chayote was first discovered by Patrick Browne in Jamaica in 1756. This type of plant is widely grown in the Philippines, Malaysia, and Indonesia. Chayote is not a foreign vegetable for most Indonesians. Siamese pumpkin is known by several names, such as pumpkin jipang (Central Java), Maniaah (East Java), and waluh siam (West Java). In the international world, this vegetable is called Chayote (Dyah, 2010). Chayote is a subtropical plant and belongs to the cucurbitaceus species which is often used as food. The chayote is shown in the picture.

Figure 1. Chayote

The chayote plant classification system is
Kingdom : *Plantae*(plants)
Sub Kingdom : *Tracheobionta*(vascular plants)
Super Divisi : *Spermatophyta*(producing seeds)
Division : *Magnoliophyta*(flowering plants)
Class : *Magnosiopsida*(two pieces / dicots)
Sub Class : *Dilleniidae*
Order : *Violales*
Family : *Cucurbitaceae*(pumpkin tribe)
Genus : *Sechium*
Type : *Sechium edule*
(Dyah, 2010).

In the field of medicine, chayote is efficacious as a diuretic, antipyretic, anti-inflammatory, and reduces high blood pressure (Djaelani, 2015). With reduced levels of salt that is absorbing or retaining water, this will ease the work of the heart in pumping blood so that blood pressure will decrease. In addition, it was reported that chayote is a cholesterol-lowering vegetable, prevents hypertension, is good as a source of nutrition for pregnant and lactating women, good for gout sufferers, diabetes and canker sores, as well as maintains kidney health, and this vegetable is easy to get and cheap in the market (Jayani, 2016).

1. Morfologi labu siam

The chayote morphology in more detail is as follows: Habitus

Habitus chayote is a creeping shrub and annuals. After flowering and fruiting, this plant will die. The inflorescences change one (monoecious) with male flowers and hermaphrodite flowers. This plant can propagate up to 3-5 meters.

a. stem

Chayote has a soft stem, grooved, many branches, and a spiral-shaped tool to twist. The surface of the stem is generally smooth or slightly rough, green, and the surface is hairy. Chayote plant stems are round and twisted.

b. Leaf

Chayote has a single heart-shaped leaf, incised edges, with a tapered tip, pointed base, and rough surface, 4-25 cm long and 3-20 cm wide.

c. Flower

The flower of the chayote plant has compound flowers that come out of the leaf axils, with five-titled petals, a grooved crown, five stamens, orange anthers, and one yellow pistil.

d. Fruit

The color of dried chayote seeds is black, white, or brownish white. The fruit hangs on the stalk with a curved surface of the whitish green. Chayote fruit is green when young with yellowish white arrays, as it ripens, the color of the outside of the fruit changes from pale green to white. In the cultivation of chayote plants, the number of fruits must be limited to produce larger fruit sizes.

e. Root

The roots of the chayote plant are brownish-white. The roots are fibrous, many-branched, round to slightly square, and weak trunked. The roots of the chayote plant are spreading, but shallow. (Prahsta, 2009)

2. Benefits of chayote

The water content in chayote has a diuretic effect which helps to smooth urination. Lowering blood pressure, through the wasted urine due to the diuretic properties of chayote, the salt content in the blood also decreases. Reduced salt levels will absorb or retain water which will ease the work of the heart in pumping blood so that blood pressure will decrease. The content of alkaloids functions as a vasodilator, therefore chayote reduces high blood pressure (Yuliana, 2016).

The fruit of this plant is good for curing canker sores, internal heat, and reducing fever in children because it contains a lot of water, for uric acid disorders, diabetes mellitus is also suitable for consuming steamed chayote. The starch content is filling so that people with diabetes mellitus no longer consume staple foods in excess. Chayote has a fairly good fiber content, which is 1.7 grams per 100 grams. Consumption of fiber in sufficient quantities is very good for overcoming constipation and is safe for sensitive stomach or intestinal inflammation. Dietary fiber can reduce the risk of cancer caused by an imperfect digestive system (Yuliana, 2016).

3. The content contained in chayote

There are several compounds contained in chayote (Nurhalimah, 2018), namely:

1) Potassium

The benefits of potassium in chayote can reduce renin secretion which causes a decrease in angiotensin II so that vasoconstriction of blood vessels decreases and aldosterone decreases so that sodium and water reabsorption into the blood is reduced. Potassium also has a Na-K pumping effect, namely, potassium is pumped from the extracellular fluid into cells, and sodium is pumped out so that potassium can lower blood pressure (Nurhalimah, 2018).

2) Alkaloids

Alkaloids are diuretics, which help the kidneys remove excess fluid and salt from the body so that reduced fluid in the blood will lower blood pressure (Sudibyo, 2014 Nurhalimah, 2018).

3) Saponins

Saponins are glycosides that will produce sugars (glycones) and sapogenins (aglycones) after hydrolysis. Saponins will bind to various 3β-hydroxysteroid compounds and form a saponin-cholesterol complex molecule that disrupts organization in cells. This complex bond causes a decrease in cholesterol in the tissues and the blood, as well as a decrease in cholesterol absorption and an increase in cholesterol excretion through feces (Sudibyo, 2014 Nurhalimah, 2018).

4) Niacin

Niacin is a monocarboxylic acid derivative of pyrimidine. The way niacin works through its role in lowering plasma cholesterol levels is by inhibiting the flow of free fatty acids from adipose tissue which reduces the formation of lipoproteins that carry cholesterol. The final result obtained is a decrease in a cholesterol-transporting protein and is accompanied by a decrease in total cholesterol levels in the blood (Nurhalimah, 2018).

5) Flavonoids

The content of flavonoids is associated with a protective effect on endothelial function and inhibits platelet aggregation, thereby reducing the risk of coronary heart disease and cardiovascular disease. Flavonoids have a hypotensive effect by inhibiting ACE activity, as well as being a diuretic. In addition, flavonoids can increase urination and excretion of electrolytes, which function like potassium, i.e. absorbing fluid electrolyte ions such as sodium that are in the intracellular blood towards the extracellular entering the kidney tubules (Sijabat, 2017).

6) Pectin

Chayote contains pectin which functions to prevent the absorption of fat and cholesterol because fiber stimulates the secretion of bile sap which makes fat into an emulsion and is excreted with feces (stool) so that it can reduce cholesterol levels. Chayote fruit also contains high enough vitamin components such as the vitamin B complex called vitamin B3, which serves to reduce the production of VLDL (very low-density lipoprotein) in the liver so that the production of LDL cholesterol (low-density lipoprotein) and triglycerides can decrease so that it can reduce the incidence cholesterol in patients with hypertension (Jayani, 2016).

1. Elderly Identification and Blood Pressure Measurement

Collecting data related to the number of elderly and measuring blood pressure for the elderly at the Posyandu Lansia post. Blood pressure measurement, Arterial blood pressure can

be measured either directly (invasively) or indirectly (non-invasively). Before taking blood pressure measurements, instruct the client to avoid caffeine and smoke for 30 minutes. Assess the best position to prepare equipment in good condition which includes a sphygmomanometer, bag and cuff, stethoscope, and observation sheet. The procedure for measuring blood pressure is as follows (Potter & Perry, 2005):

a. Help the client to take a sitting or sleeping position, making sure the room is warm and quiet.
b. Explain the procedure to the client and help the client rest at least 5 minutes before the measurement. Then the examiner washes his hands.
c. Position arm weights or at heart level (support if necessary) with palms facing up.
d. Roll up the sleeve of the upper arm, palpate the brachial artery and place the cuff 2.5 cm above the brachial artery.
e. With the cuff still deflated, place it evenly over the circumference of the upper arm. Ensure that the manometer is positioned vertically at eye level, the examiner should not be more than 1 meter.
f. Palpate the radial or brachial pulse with the fingertips of one hand.
g. While inflating the cuff rapidly until the pressure is 30 mm Hg above the point where the pulse is not palpable. Gently deflate the cuff and note where the pulse points appear. Deflate the cuff and wait 30 seconds.
h. Place the stethoscope earpieces to your ears and make sure the sound is clear.
i. Locate the brachial artery and place the bell or chestpiece diaphragm on it, closing the pressure balloon valve clockwise until it is tight.
j. Inflate the cuff 30 mm Hg above the palpable systolic pressure, slowly release and allow the mercury to fall at a rate of 2 to 3 mm Hg per second.
k. Note the point on the manometer when the first clear sound is heard (as the systolic pressure).
l. Continue to deflate the cuff, noting the point where the muffled or dampened sound occurs. Continue to deflate the cuff, noting the point on the manometer to the nearest 2 mmHg where the sound disappears (as the diastolic pressure).
m. Deflate the cuff quickly and completely, removing the cuff from the arm unless there is a plan to repeat.
n. Assist the client to return to a comfortable position and close the upper arm.
o. Tell the client the results of the inspection.
p. Hand washes checker.
q. Record the blood pressure, date, time, area, and position of the measurement on the observation sheet.

2. Preparation of Diktat or Guidelines for Processing Pumpkin Juice

The preparation of a diktat or manual for processing chayote juice can be done through the processing of chayote juice, including:

a. Peel the chayote then split and remove the seeds, then wash and drain.
b. Cut the chayote into cubes.
c. Put the diced pumpkin into a blender, add palm sugar and cinnamon to taste, then blend until smooth and well mixed.
d. Separate the water and dregs using a strainer.

e. Transfer the filtered chayote water to the container provided.
f. Pour into the glass that will be given to the elderly.
g. Then drink 3 times a day (especially when the elderly have hypertension)

3. Counseling on Hypertension

Counseling on hypertension in the elderly is carried out through socialization of activities in collaboration with the Puskesmas

4. Delivery of Materials on Chayote Juice Processing

Materials for processing chayote juice are given or sent to the target community and village parties.

5. The practice of processing chayote juice at the Posyandu for the elderly as a target

The practice of processing chayote juice was carried out for several months at the posyandu for the elderly with an allocation of 6 hours a day.

6. Evaluation of Activity Implementation

Evaluation of pumpkin juice processing activities to reduce hypertension are:

a. Conduct interviews and tell the daily activities of the elderly.
b. Practicing how to process chayote juice.
c. Hypertension in some elderly can be controlled after knowing how to prevent hypertension.

The public can know about the processing of chayote juice to reduce hypertension, especially for the elderly during and after activities.

RESULTS AND DISCUSSION

The activity of processing chayote juice was carried out, after the pre-test activity of measuring blood pressure for the elderly in the Sita Health Center area.

Figure 1 pressure measurement pre-test

Pre-test activities for measuring blood pressure for the elderly to find out whether the elderly have high blood pressure or not, if high blood pressure is detected or above 120/80 mmHg, the elderly are recommended not to consume salt, excessive oily food, and be given juice. chayote to lower blood pressure to normal.

Figure 2 chayote juice processing

Chayote juice processing, chayote taken is a fresh pumpkin, cleaned the skin, peeled and cut into small pieces then put into a blender, add 2 tablespoons of brown sugar, and 200 ml of mineral water. Cinnamon bark is cut into small pieces and put into a blender, after the blender is poured into a glass and given to the elderly with high blood pressure. giving chayote juice is done every day and drank in the morning and evening.

Figure 3 the implementation of the post-test for measuring the blood pressure of the elderly

The post-test was carried out one week after consuming chayote juice, to determine the development of elderly blood pressure after giving chayote juice. The results of the post-test on the blood pressure of the elderly experienced a decrease in blood pressure to normal, namely 120/80 mmHg.

CONCLUSION

The elderly who experience high blood pressure in the work area of the confiscated health center is 90 people, after given chayote juice for 1 month the elderly's blood pressure decreases and is normal, giving chayote juice to the elderly is highly recommended for the elderly with high blood pressure, because it is expected to families who have elderly are expected to plant chayote in the garden or behind the house, families must understand how to process chayote juice well and pay attention to the cleanliness of the processing site.

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