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## THE EFFECT OF GIVING VEGETABLE (*SACCHARUM EDULE*) ON DECREASING BLOOD PRESSURE IN ELDERLY WITH HYPERTENSION AT TOBELO HALMAHERA HEALTH CENTER NORTH OF 2021

Sarah G. Mapanawang,<sup>1</sup> Sefnat Djinimangale,<sup>2</sup> Selvie Ticoalu,<sup>3</sup> Nurfaija Isaac<sup>4</sup>

<sup>1</sup>DIII- Midwifery Study Program, Makariwo Halmahera College of Health Sciences (STIKMAH) – Tobelo

<sup>2</sup>Medika Mandiri Foundation – Tobelo

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#### \*Correspondence to Author:

**Sarah G. Mapanawang** Lecturer  
Midwifery Study Program  
Makariwo Halmahera College of  
Health Sciences

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### ABSTRACT

**Background:** According to the World Health Organization (WHO), currently there are 600 million people with hypertension worldwide, and 3 million of them die every year. WHO noted that there are one billion people in the world who suffer from hypertension, two-thirds of whom are in developing countries with low-medium income. Knowing the effect of giving vegetable wax (*Saccharum edule*) on reducing blood pressure in the elderly with hypertension. **Research Method:** This type of research uses. One group pretest design and observations were made through pretest first, then given treatment, then given a posttest so that it can find out the changes that occur before and after giving treatment **Research Results:** for this research, a normality test was carried out and the pragmatic statistical test was used (paired-sample t-test), namely the testing procedure on a dependent group, with the significance level of the T-test results being  $P < 0.05$ . hypertension before administration of vegetable wax was 136.25 mmHg and blood pressure after administration of vegetable wax was 127.50 mmHg. The results obtained from data processing with the Paired to T-Test test showed that the systolic p-Value was 0.00 0.05 and the diastolic p-Value was 0.00 0.05. **Conclusion:** There is a significant effect of giving vegetable wax on reducing blood pressure with hypertension given once a day for 1 week in

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## PRELIMINARY

Hypertension is a condition of increasing a person's blood pressure above normal which can lead to an increase in morbidity (mobility) and death (mortality).<sup>1</sup>

Hypertension in the elderly is one of the triggering factors associated with cardiovascular disease and other neurological diseases. Hypertension is a person's blood pressure where the systolic blood pressure is above 140 mmHg and the diastolic pressure is above 90 mmHg.<sup>2</sup>

Factors that cause hypertension are age, gender, and family history or genetics (risk factors that cannot be changed). Smoking habits, obesity, lack of physical activity, stress, and use of estrogen, and one of them that can cause hypertension is the pattern of salt consumption.<sup>3</sup>

Wax vegetable plants (*Saccharum edule*) are included in horticulture plants, which are used on the leaves and stems. This plant has prominent characteristics, namely: in general, the leaves are green so they are useful for health and have high nutritional value, are not durable because they are easily damaged, so most of what is needed are fresh and this leaf vegetable is very sensitive to pest and disease.<sup>4</sup>

Vegetable wax has a balanced nutritional content because it contains 4.3 g protein, 25 mg calcium, 2 mg iron, 35 mg vitamin C, and 92.4% water.<sup>5</sup> According to research conducted by Refa Teja Muti. Non-pharmacological therapy can be used with grated turmeric which affects reducing hypertension. Grated turmeric contains chemicals such as curcumin, essential oils, antioxidants, minerals, phosphorus, and high potassium, and contains a lot of vitamin C. Curcumin has the ability as an antioxidant. Potassium is an important component of cell and body fluids that help control heart rate and blood pressure.<sup>2</sup>

World Health Organization (WHO) and the International Society of Hypertension (ISH), currently there are 600 million people with hypertension worldwide, and 3 million of them die every year. WHO noted that there are one billion people in the world who suffer from hypertension, two-thirds of whom are in developing countries with low-medium income.

The prevalence of hypertension will continue to increase sharply, it is predicted that by 2025, around 29% of adults worldwide suffer from hypertension.<sup>6</sup> The Basic Health Research (Riskesdas) conducted by the Ministry of Health in 2018 resulted in an increase in the incidence of hypertension compared to the results in 2013. The prevalence of hypertension based on the results of the 2018 Riskesdas was 34.1%. This figure is higher than in 2013 which touched a prevalence rate of 25.8%. These results are the incidence of hypertension based on the results of blood pressure measurements in Indonesian people aged 18 years and over.

Data on the elderly with hypertension at the Tobelo Public Health Center Regency North Halmahera in January – July totaled 146 elderly. Data on the elderly with hypertension at the age of 60 years and over amounted to 71 elderly. While the elderly with hypertension at the age of 70 years and over amounted to 75 elderly.<sup>8</sup>

## METHOD

This research is Experimental research with a *Quasi-Experimental Design With Pre-Post tests*. This study aims to analyze the effect of giving vegetable wax (*Saccharum edule*) on reducing blood pressure in the elderly with hypertension. The intervention group in this study were patients who would undergo an intervention procedure by giving wax vegetables. (*Saccharum edule*)

This research was conducted at the Gosoma Public Health Center, Tobelo District, North Halmahera Regency. This research was conducted in August-September 2021.

The total population in this study was taken from the number of people with hypertension at the Tobelo Health Center who routinely checked in 2021 as many as 146 people.

The number of samples used in a study this as many as 8 people and according to I criteria inclusion. Inclusion criteria are general requirements that must be met by the subject to be included in the study. Inclusion criteria in this study are:

- Elderly suffering from hypertension
- Seniors from 55-65 years old
- Elderly in the working area of Tobelo Health Center
- Elderly who are willing to be respondents.

Execution Criteria Is a criterion where the research subject cannot represent the sample because it does not meet the requirements as a research sample.

- Elderly who do not suffer from hypertension
- Seniors who are not aged from 55-65 years
- The elderly who are not in the working area of the Tobelo Health Center
- Elderly who are not willing to be respondents.

## RESULTS

**Table 1. Frequency Distribution of Respondents by Gender.**

Gender	N	%
Male	1	12.5
female	7	87.5
Total	8	100

Source primary data 2021

Based on table 1 above, explains that from 8 respondents (100%) the majority of respondents in this study were mostly women, namely 7 people (87.5%) and at least 1 person (12.5%) for men.

**Table 2. Frequency Distribution of Respondents by Age.**

Age	N	%
Male	5	62.5
Female	3	37.5
Total	8	100

2021 Primary Data Source

Based on table 2 above, explains that from 8 respondents (100%) the majority of respondents in this study were mostly in the 50-57 year age range, namely 5 people (62.5%) and at least 58-65 years old, namely 3 people (37.5%).

**Table 3. Frequency Distribution of Respondents by Education.**

Education	N	%
SD	4	50.0
SMP	2	25.0
SMA	2	25.0
Total	8	100

2021 Primary Data Source

Meanwhile, education in this study is related to the last education or diploma owned by the respondent. Based on table 3 above, it is explained that of the 8 respondents (100%) it was found that the majority of respondents had elementary education level, namely 4 people (50.0%), junior high school level was 2 people (25.0%) and high school level was 2 people (25.0%).

**Table 4. Frequency Distribution of Respondents by Occupation.**

Job	N	%
Hurry	1	12.0
Entrepreneur	3	37.0
IRT	4	50.0
Total	8	100

*Source primary data 2021*

As for the work of the respondents from table 4 above, it is explained that 8 respondents (100%) found that the majority of respondents were housewives, namely 4 people (50.0%), entrepreneurs as many as 3 people (37.5%) and work as laborers, namely 1 people (12.0%).

**Table 5. Distribution of Respondents Based on Pretest Systolic Blood Pressure.**

Variable N Mean Standard Deviation p*
Systolic 8 136,25 5,175 ,000

*Source primary data 2021*

From table 5 above, the mean value of systolic blood pressure before giving vegetable wax is 136.25 mmHg and the standard deviation is 5.175 and P\* 0.00.

**Table 6. Distribution of Respondents Based on Pretest Diastolic Blood Pressure.**

Variable N Mean Standard deviation p*
Diastolic 8 93.75 5,175 ,000

*Source primary data 2021*

From table 6 above, the mean value of diastolic blood pressure before giving vegetable wax is 93.75 mmHg and the standard deviation is 5.175 and P\* 0.00.

**Table 7. Distribution of Respondents Based on Posttest Systolic Blood Pressure.**

Variable N Mean Standard deviation p*
Diastolic 8 127.50 7,440,000

*Source primary data 2021*

From table 7 above, the mean value of systolic blood pressure after administration of vegetable wax is 127.50 mmHg and the standard deviation is 7.440 and P\* 0.00.

**Table 8. Distribution of Respondents Based on Posttest Diastolic Blood Pressure.**

Variable N Mean Standard deviation p*
Diastolic 8 87.50 7,440,000

*Source primary data 2021*

From table 8. above, the mean value of diastolic blood pressure after administration of vegetable wax is 87.50 mmHg and the standard deviation is 7.440 and P\* 0.00

**Table 9. Distribution of Systolic and Diastolic Blood Pressure Before and After Vegetable Wax (*Saccharum Edule*) was given.**

Variable Mean Bench t Sig.deffrence
Systolic 125.50 4,629 25,968,000

*Source primary data 2021*

From table 9 above, the mean value of systolic blood pressure before and after administration of vegetable wax is 127.50 mmHg with P-Value = 0.000 <0.05, meaning that there is an influence between the systolic blood pressure of hypertensive

patients before and after being given vegetable wax.

**Table 10. Distribution of Systolic and Diastolic Blood Pressure Before and After Vegetable Wax (*Saccharum Edule*) was given.**

Variable	Mean	Bench	t	Sig. difference
Diastolic	86,25	3,536	3,000	,000

Source Primary data 2021

From table 10 above, the mean diastolic blood pressure before and after administration of vegetable wax is 86.25 mmHg with a P-Value =  $0.00 < 0.05$ , which means that there is an influence between the diastolic blood pressure of hypertensive patients before and after being given vegetable wax.

## DISCUSSION

This research was carried out by intervening in the elderly with hypertension by giving vegetable wax to 8 elderly people, according to the inclusion criteria. This study aims to determine the effect of giving vegetable wax on lowering blood pressure in the elderly. After processing and analyzing the data, the discussion is as follows:

In this study, the wax vegetable was used. Before giving the wax vegetable, it was given to the respondent, first, the wax vegetable was bought by the market, then the skin was peeled and baked and given to the elderly with hypertension to eat.

For this study, a normality test was performed and the *paired samples t-test* was used, namely the testing procedure for the same group (dependent) with the significance level of the t-test results being  $p < 0.005$ .

In this study, it was found that the characteristics of respondents consisted of

groups of gender, age, occupation, and education, where in table 1, it can be seen that the female sex group was 7 people (87.5%), of 8 respondents 100% on average Ordinary housewives 50.0% of respondents aged and educated in elementary, junior high and high school after giving vegetable candles there is a decrease in blood pressure, with low education, someone will tend to get good information from other people.

On the other hand, a low level of education will hinder a person's development and attitude towards the newly introduced values. Differences in systolic and diastolic blood pressure before and after administration of vegetable wax in the elderly experimental group based on the results of the analysis showed the average value of blood pressure in the elderly experimental group before being given 136.25 mmHg and the average blood pressure value after giving vegetable wax was 127.50 mmHg.

The results obtained from data processing with *the Paired to T-Test test* obtained a systolic p-value of  $0.00 < 0.05$  and a diastolic p-value of  $0.00 < 0.05$  so it can be concluded that there is an effect of giving vegetable wax to lowering blood pressure in the elderly. This study is in line with research conducted on reducing blood pressure in the elderly. This research is in line with research conducted by

**Refa Teja Muti et al.** states that there is an effect of consuming grated turmeric with a decrease in hypertension in the elderly. Obtained from the results of analytical research using the T-test test in the intervention group, the results were 0.001 ( $p \leq 0.05$ ) for systolic blood pressure and 0.00 ( $p \leq 0.05$ ) for diastolic blood pressure.

The results can be described that blood pressure after being given grated turmeric in the intervention group obtained an average blood pressure of 152.32 mmHg in systolic blood pressure and 98.46 mmHg in diastolic blood pressure. Because grated turmeric contains several chemicals and ingredients that lower blood pressure, including curricula, essential oils, anti-oxidants, minerals, phosphorus, and potassium which are high and contain lots of vitamin C. Antioxidants and fiber in curcumin *helps low-density lipoprotein (LDL)* in the blood. <sup>2</sup>

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