

The Effect of Giving Ambon Banana (*Musa Paradisiaca Var Sapientum Linn*) on Blood Pressure among Pregnant Mothers with Hypertension

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Abstract:

The incidence of hypertension in pregnant women constitutes 33.07% of pregnancy complications which is one of the factors causing maternal death. Pakuhaji Regional Hospital found that the incidence of hypertension was around 40%. One good diet method is to reduce salt intake and increase potassium intake. Giving Ambon bananas is high in potassium which can lower blood pressure. This study aimed to determine the effect of giving Ambon banana (*musa paradisiaca var sapientum linn*) on blood pressure in pregnant women with hypertension at Pakuhaji Regional Hospital in 2023. Pre-experimental research with a one group pretest and post test design. The sample in this study consisted of 35 respondents using a purposive sampling technique. Data were analyzed using a paired sample t-test which was previously tested for normality. The results of univariate analysis before giving Ambon bananas averaged systole 159.54 mmHg and diastole 102.89 mmHg, after giving Ambon bananas it decreased with an average systole of 141.57 mmHg and diastole 86.80 mmHg. The results of bivariate analysis with paired sample t-test giving Ambon bananas a value of 0.000. There is an effect of giving Ambon bananas (*Musa paradisiaca var sapientum Linn*) on blood pressure in pregnant women with hypertension. It is hoped that pregnant women can increase the knowledge of pregnant women with hypertension that apart from using medicines from doctors, they can also use Ambon bananas.

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INTRODUCTION

Pregnancy is the condition of a woman who carries a fetus for approximately nine months or 40 weeks due to the conception of spermatozoa and ovum with continuous nidation (Kurniyawan et al., 2023). It is very important to pay attention to the health of pregnant women throughout pregnancy because unexpected complications can occur so supervision is needed (Yuniwati et al., 2023). About 830 women die every day from preventable causes related to pregnancy and childbirth. They die from complications during pregnancy and after delivery. According to data from the Ministry of Health, in 2020 as many as 4,627 women died due to pregnancy, an increase of 10.25% from 4,197 people in the previous year. Other factors causing maternal death in 2017 included bleeding (28.29%), hypertension (23%), and circulatory system disorders (4.94%) (Kemenkes RI, 2020).

Hypertension in pregnancy is hypertension that occurs during a mother's pregnancy where the systolic and diastolic blood pressure is $\geq 140/90$ mmHg. Several risk factors that cause hypertension in pregnancy are primigravida, primipaternity, hyperplacentalosis (eg hydatidiform

mole, multiple pregnancies, diabetes mellitus, hydrops fetalis, large babies), age, family history of hypertension (pre-eclampsia/eclampsia), kidney disease. and pre-existing hypertension and obesity (Rahmawati et al., 2022). Hypertension in pregnancy is classified into 4 types: chronic hypertension, gestational hypertension, preeclampsia and eclampsia, and chronic hypertension with superimposed preeclampsia (superimposed preeclampsia) (Novelia et al., 2023). According to Sutriyanto (2019), pregnancy hypertension accounts for 5-15% of pregnancy complications nationally and is one of the three highest causes of maternal morbidity and mortality.

Hypertension can be controlled with medication and non-medication. Pharmacological treatment includes the use of antihypertensive drugs. In contrast, non-pharmacological treatment includes treatment without drugs, such as changing one's lifestyle to a healthier one and avoiding factors that increase their health risks. Diet management, emotional support, and aromatherapy are some non-pharmacological methods. Non-pharmacological treatment for treating hypertension is by utilizing the potassium content in fruit and vegetables (Desira et al., 2019).

Ambon banana is a type of banana that has a high potassium content. There are 435 mg of potassium in 100 grams of Ambon banana (Luthbis & Ratnasari, 2020). Rosdianah and Sadullah (2021) conducted research showing that bananas are effective in reducing diastolic blood pressure in pregnant women. Ambon bananas as a supplement help lower blood pressure, both systolic and diastolic, for people with hypertension (Ramadhan et al., 2021). This study aimed to determine the effect of giving Ambon banana (*musa paradisiaca var sapientum linn*) on blood pressure in pregnant women with hypertension at Pakuhaji Regional Hospital in 2023.

METHOD

This research uses quantitative methods and a pre-experimental research design with a one group pretest and post test design approach. In this study, in the initial stage, researchers will examine blood pressure in pregnant women with hypertension before consuming Ambon bananas (pretest). Then respondents will consume Ambon bananas for 7 days twice a day. In the final stage, researchers reviewed blood pressure in pregnant women with hypertension after consuming Ambon bananas (post test).

The population taken in this study were all pregnant women in the second and third trimesters who experienced hypertension at the Obstetrics Polyclinic at Pakuhaji Regional Hospital from October to December 2023, totaling 55 mothers. The number of samples obtained from using the Slovin formula was 35 pregnant women with hypertension.

The sampling method in this study used a purposive sampling technique with inclusion criteria, namely pregnant women in the second and third trimesters, systolic blood pressure between ≥ 140 mmHg and diastolic ≥ 90 mmHg and willing to be a respondent and sign informed consent. The research instruments used were a digital blood pressure measuring device to measure the blood pressure of pregnant women, an observation sheet to monitor pretest and posttest blood pressure, and a digital food scale to weigh Ambon bananas. The location of the research was Pakuhaji Regional Hospital, Tangerang Regency. The research was conducted in October-December 2023. Data analysis was carried out first by carrying out a normality test by calculating the ratio of skewness and kurtosis. Correlation test using Paired t test.

Data Collection Procedures explains the stages that will be carried out in conducting research starting from preparation, data collection to data analysis. The researcher explains the course of the research among others: Prepare material and supporting theoretical concepts; conduct a preliminary study at Pakuhaji Regional Hospital; consult with supervisor 1 and supervisor 2; arrange permits for data collection by requesting a cover letter from the Faculty of

Health Sciences for Pakuhaji Regional Hospital, and receiving a reply from Pakuhaji Regional Hospital; collecting data which is preceded by selecting samples or respondents; collect data from samples; process research data by editing and coding.

RESULT

Univariate Analysis

Table 1. Univariate Analysis

Blood Pressure	Mean	Difference	SD	Min	Max
Systole					
Pretest	159.54	25.68	5.868	148	170
Posttest	141.57		12.248	115	160
Diastole					
Pretest	102.89	16.09	4.658	96	112
Posttest	86\80		3.462	79	92

Based on table 1, it is known that the blood pressure in pregnant women with hypertension before giving Ambon banana (*musa paradisiaca var sapientum linn*) systole was an average of 159.54 mmHg std. deviation 5.868 mmHg, minimum 148 mmHg and maximum 170 mmHg, and average diastole 102.89 mmHg std. deviation 4.658 mmHg, maximum 112 mmHg and minimum 96 mmHg.

Bivariate Analysis

Table 2. Effect of Giving Ambon Bananas (*Musa Paradisiaca Var Sapientum Linn*) on Blood Pressure in Pregnant Women with Hypertension at Pakuhaji Regional Hospital in 2023

Blood Pressure	Mean		Difference Mean	SD	p-value
	Before	After			
Sistole	159.54	141.57	17.97	9.998	0.000
Diastole	102.89	86.80	16.09	5.533	0.000

Based on Table 2, the results of the paired sample t-test show that the significance value is $0.000 < 0.05$, so it can be concluded that H_0 is rejected and H_a is accepted, thus it can be concluded that there is an effect of giving Ambon banana (*musa paradisiaca var sapientum linn*) on blood pressure. blood in pregnant women with hypertension at Pakuhaji Regional Hospital in 2023.

DISCUSSION

Based on the research results, it can be seen that the blood pressure in pregnant women with hypertension before giving Ambon banana fruit (*musa paradisiaca var sapientum linn*) had an average systole of 159.54 mmHg and an average of 102.89 mmHg in diastole. Blood pressure in pregnant women with hypertension after giving Ambon banana fruit (*Musa paradisiaca var sapientum Linn*) had an average systole of 141.57 mmHg and an average of 86.80 mmHg in diastole. Hypertension in pregnancy is hypertension that is not accompanied by proteinuria after twenty weeks of pregnancy (Alatas, 2019).

Ambon banana is a type of banana that has a high potassium content. There are 435 mg of potassium in 100 grams of Ambon bananas (Luthbis & Ratnasari, 2020). Research conducted by

Porouw & Yulianingsih, (2019), pregnant women in the working area of the Telaga Biru Health Center who consumed Ambon bananas for 7 days at a dose of 200 grams twice a day could lower their blood pressure by up to 10 mmHg- 20 mmHg in one week. Researchers assume that the increase in blood pressure in pregnant women is caused by the mother's bad habits, such as consuming excess salt, which causes the blood volume in the body to increase, which causes the heart to pump more strongly, causing high blood pressure. Researchers assume that in pregnant women, after consuming 200 grams of Ambon bananas per day, consumed twice for 7 days, the mother's blood pressure decreases, this is because Ambon bananas contain high levels of potassium, namely 435 mg of potassium in 100 grams of Ambon bananas. So, it can stabilize the mother's blood pressure. Potassium functions to maintain water balance in the body, keep the walls of large blood vessels elastic and optimize their function. Potassium is also able to pump extracellular fluid into cells and sodium is pumped out, so potassium can lower blood pressure.

Based on the research results, it was found that there was an effect of giving Ambon banana (*musa paradisiaca var sapientum linn*) on blood pressure in pregnant women with hypertension at Pakuhaji Regional Hospital in 2023. Researchers assume that the effect of giving Ambon bananas on the blood pressure of pregnant women with hypertension is due to the presence of high potassium which works like anti-hypertension drugs in the human body. The presence of high potassium means it has diuretic properties by reducing sodium levels in the blood which is excreted through urine.

There are several limitations that cannot be met and are shortcomings in this research. These various shortcomings are found in the contents of this research: The researcher is a beginner or is conducting research for the first time so he cannot apply the theory thoroughly with the results obtained being limited to the researcher's abilities; Researchers only looked at the effect of giving Ambon bananas on blood pressure in pregnant women without looking at other factors that cause an increase in blood pressure in pregnant women, to clarify they only used interviews without conducting in-depth research; Due to limited time and costs, the number of samples was limited so that the total was only 35 respondents with 1 week of 200 grams a day with administration twice a day every morning and evening and making the observation time only one week and assisted by local cadres and family members to assess the mother's condition; There is no comparison (control) group in this study.

CONCLUSION

The conclusion of this research is It is known that the average blood pressure in pregnant women with hypertension before giving Ambon banana (*musa paradisiaca var sapientum linn*) at Pakuhaji Regional Hospital in 2023 averaged systole 159.54 mmHg and diastole 102.89 mmHg; It is known that the average blood pressure in pregnant women with hypertension after being given Ambon banana (*musa paradisiaca var sapientum linn*) at Pakuhaji Regional Hospital in 2023 has decreased with an average systole of 141.57 mmHg and diastole of 86.80 mmHg; There is an effect of giving Ambon banana (*musa paradisiaca var sapientum linn*) on blood pressure in pregnant women with hypertension at Pakuhaji Regional Hospital in 2023 with a p value of 0.000.

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CONFLICT OF INTEREST

There is no conflict of interest in conducting this study.

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