Contents lists available at IOCS

Science Midwifery

journal homepage: www.midwifery.iocspublisher.org

Effect of consuming ambon banana on increasing hemoglobin levels in pregnant women

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ARTICLE INFO

Article history:

Received Nov 21, 2022
Revised Nov 28, 2022
Accepted Dec 19, 2022

Keywords:

Ambon Banana
Hemoglobin Level

ABSTRACT

The results of the 2018 Basic Health Research stated that in Indonesia 48.9% of pregnant women had anemia. The aim of the study was to determine the effect of consumption of Ambon bananas on increasing Hb levels in pregnant women. This research method uses a quantitative method with the Pre Experiments one group pretest-posttest design. The research sample consisted of 10 respondents using a purposive sampling technique. Based on the univariate results, the highest percentage before administration of Ambon bananas was pregnant women with a hemoglobin level of 9 g/dL in 5 people (50%), a hemoglobin level of 10-11 g/dL in 3 people (30%), a hemoglobin level of 10-11 g/dL dL in 3 persons (30%). level of 8 g/dL in 2 people. people (20%). After giving Ambon bananas to pregnant women who had a hemoglobin level of 12 g/dL in 3 people (30%), a hemoglobin level of 11 g/dL in 5 people (50%), a hemoglobin level of 10 g/dL in 2 people (20%) . Statistical test results obtained P Value 0.004 <0.005 where there was an effect between hemoglobin levels before and after administration of Ambon bananas with a P Value of 0.004 <0.005

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INTRODUCTION

The success of the maternal health program can be assessed through the main indicator Maternal Mortality Rate (MMR). This indicator is also able to assess the degree of public health, because of its sensitivity to improving health services, both in terms of accessibility and quality. In general, there was a decrease in maternal mortality during the 1991-2015 period from 390 per 100,000 live births. Although there is a tendency to reduce maternal mortality, this figure has not succeeded in achieving the MDGs target which must be achieved, which is 102 per 102 per 100,000 live births in 2015. The results of the 2015 Inter-Census Population Survey (SUPAS) show that the maternal mortality rate is three times the target. MDGs [1].

The five main causes of maternal mortality are bleeding, infection, eclampsia, prolonged labor, and complications of abortion. While the indirect cause of maternal death is anemia, a lot of

51% according to Household Welfare in 1995 Protein Energy Deficiency (KEP) and Calorie Energy Deficiency, as much as 4.8% according to the 2000 census [2].

Anemia can be defined as a condition with Hb levels below normal. In Indonesia, anemia is generally caused by iron deficiency. Iron deficiency anemia is one of the most common disorders during pregnancy [3].

Anemia is a condition in which the hemoglobin, hematocrit and red blood cell levels are lower than normal as a result of a deficiency of one or several essential food elements.[4]

Anemia is a condition of the body with a lower number and size of red blood cells or hemoglobin (Hb) levels, which will disrupt the distribution of oxygen by the blood throughout the body [5].

According to[6]anemia is a condition of the body that lacks hemoglobin. Normal Hb levels are 12-16% of red blood cells. The number of normal red blood cells is 5 million / minute. In patients with anemia, Hb levels are less than normal. Anemia is a condition in which red blood cells (erythrocytes) are reduced in circulating blood or hemoglobin mass so that they are unable to fulfill their function as oxygen carriers throughout the tissues [7].

Anemia in pregnant women can increase the risk of premature birth, maternal and child mortality, and infectious diseases. Iron deficiency anemia in the mother can affect the growth and development of the fetus/infant during pregnancy and afterward. The results of the 2018 Rikesdas stated that in Indonesia 48.9% of pregnant women were anemic. A total of 984.6% of anemia in pregnant women occurred in the age group 15-24 years. To prevent anemia, every pregnant woman is expected to get an iron tablet of at least 90 tablets during pregnancy[1]

Ambon banana is a type of banana that is widely consumed by Indonesian people. In addition, Ambon banana also contains specific essential amino acids, namely histidine and arginine. This nutritional content is beneficial for the formation and refinement of the brain. Each 100 gram serving of Ambon banana (1 fruit) contains 73.8 g of water, 0.5 mg of iron, 9 mg of vitamin C, 0.05 mg of B1, 0.08 mg of B2, 0.1 mg of B6 and 28 mg of phosphorus. which is good for the body [8].

Ambon bananas in this case can be an additional solution so that Hb levels in pregnant women can increase or be within normal limits. The content of iron and vitamin C which can help increase and absorption of iron in the body. The higher the content of vitamin C in food, the higher the absorption and use of iron in the body. This ingredient does not have a nauseous effect on every consumer because of the sweet taste of bananas[9]

Ripe Ambon bananas contain 116 calories, 1.60 grams of protein, 0.20 grams of fat, 25.80 mg of carbohydrates, 8.00 mg of calcium, 32.00 mg of phosphorus, 0.50 mg of iron and 72.90 grams of water. Minerals in Ambon banana can be absorbed almost entirely by the body. The vitamin content of Ambon banana is very high, especially pro vitamin A, namely beta-carotene which is 45 mg per 100 grams of dry weight. Bananas contain 72.0 mg of vitamin C, 008 mg of B1, B complex (thiamine, riboflavin, niacin), and B6 (pyridoxine 0.5 mg/100gram) [10].

Vitamin B6 plays a role in the synthesis and coenzyme for several protein metabolism reactions, especially serotonin which plays an active role as a neurotransmitter in the smooth functioning of the brain, while vitamin C plays a role in transferring iron from transferrin in plasma to liver ferritin. Vitamin C is needed in the absorption of iron, thus vitamin C plays a role in the formation of Hb, thus accelerating the healing of anemia [11].

Studies conducted[9]there was a significant difference between hemoglobin levels before and after administration of Ambon bananas to pregnant women in the control group and the intervention group with a p value = 0.000.

Based on the description above, the researcher is interested in conducting research on the Effect of Consuming Ambon Bananas on Increasing Hb Levels in Pregnant Women at BPM Yuni Wati Amelia, Amd. Pekanbaru City. The aim of the study was to determine the effect of consuming

Ambon bananas on increasing Hb levels in pregnant women at BPM Yuni Wati Amelia, Amd. Pekanbaru City

RESEARCH METHOD

This research method uses quantitative methods with pre-experiments using a one group pretest-posttest design. This study aims to determine the effect of consuming ambon bananas on increasing Hb levels in pregnant women. The sample in this study amounted to 10 respondents with a sampling technique using purposive sampling. The data analysis technique used in this study was univariate analysis and bivariate analysis where statistically the first was carried out by Normality testing to determine whether a data has a normal distribution or not with a p value = 0.05. If the data distribution is normal, the Parametric Test is used using the Dependent T Test (Paired T Test), while if the data distribution is not normal, the Non-Parametric Test is used using the Wilcoxon Test.

RESULTS AND DISCUSSIONS

Research Result
Univariate Analysis

Table 1. Frequency Distribution of Hemoglobin Levels Before Giving Ambon Bananas to Pregnant Women

Characteristics	Amount	F	Percentage
Hemglobin Levels Before Ambon Banana Intervention	12 g/dL	3	30
	11 g/dL	5	50
	10g/dL	2	20
	Total	10	100

Based on table 1, it can be seen before giving Ambon bananas to pregnant women who had a hemoglobin level of 9 g/dL in the amount of 5 people with a percentage of 50%, a hemoglobin level of 10-11 g/dL in a number of 3 people with a percentage of 30%, a hemoglobin level of 8 g/dL in the amount of 2 people with a percentage 20%.

Table 2. Frequency Distribution of Hemoglobin Levels After Administration of Ambon Bananas to Pregnant Women

Characteristics	Amount	F	Percentage
Hemglobin Levels After the Ambon Banana Intervention	12 g/dL	3	30
	11 g/dL	5	50
	10g/dL	2	20
	Total	10	100

Based on table 2, it is known that after administration of Ambon bananas, pregnant women who had a hemoglobin level of 12 g/dL totaled 3 people with a percentage of 30%, a hemoglobin level of 11 g/dL amounted to 5 people with a percentage of 50% and a hemoglobin level of 10 g/dl amounted to 2 people with a percentage of 20%.

Bivariate Analysis

Table 3. Normality Test Results for Hemoglobin Levels Before and After Administration of Ambon Bananas to Pregnant Women

Shapiro-Wilk			
	Statistics	Df	Sig.
Before	.846	10	.051

After	.833	10	.036

Based on table 3, it shows that the results of the normality test using the Shapirowilk test showed that the hemoglobin level of pregnant women before the Ambon banana therapy had a P-value of 0.051, while the maternal hemoglobin level after the Ambon banana therapy had a P-value of 0.036. This result means that the distribution of hemoglobin levels in pregnant women is not normally distributed (p-value < 0.05) and can be tested using a non-parametric statistical test, namely the Wilcoxon Signed Rank Test.

Table 4. Wilcoxon Test Results of Hemoglobin Levels Before and After Administration of Ambon Bananas to Pregnant Women

Group	Mean	SD	df	Min	Max	Z	P Value
Before	9.30	1.059	10	8	11	-2,859	0.004
After	11,10	0.738		10	12		

Based on table 4 above, it is known that the results of the calculation of the Wilcoxon Signed Rank Test, the Z value obtained is -2.859 with a P-value of 0.004 (P-value <0.05) so that the hypothesis is accepted which means that there is a significant effect between hemoglobin levels before and after being given banana of Ambon.The results of the calculation of the Wilcoxon Signed Rank Test, the Z value obtained is -2.859 with a P-value of 0.004 (P value <0.05) so that the hypothesis is accepted which means there is a significant effect between hemoglobin levels before and after being given Ambon bananas at BPM Yuni Wati Amelia Pekanbaru.

Anemia is a condition in which the hemoglobin, hematocrit and red blood cell levels are lower than normal as a result of a deficiency of one or several essential food elements [4].

According to[6]anemia is a condition of the body that lacks hemoglobin. Normal Hb levels are 12-16% of red blood cells. The number of normal red blood cells is 5 million / minute. In patients with anemia, Hb levels are less than normal.

Hemoglobin is a protein in erythrocytes that functions as a carrier of oxygen from the lungs throughout the body [8].

In some cases, the treatment of iron deficiency anemia requires iron supplements (Fe tablets). However, the consumption of iron supplements must be careful according to the recommended dosage. When taking iron supplements, sometimes nausea, stomach pain, constipation, and diarrhea may occur as side effects. Maximizing Iron absorption is important. consuming foods rich in vitamin C along with iron will increase absorption and is very important for the production of hemoglobin [9].

Ambon banana is one type of food that can be consumed because it is rich in iron and also vitamin C. Vitamin C is needed for the absorption of iron, thus vitamin C plays a role in the formation of hemoglobin, thereby accelerating the healing of anemia [11].

Eating bananas can be a solution for anemia for pregnant women who experience this. Consuming two bananas a day is enough to meet iron intake for anemic patients. Bananas are the best food because they contain vitamins needed by pregnant women. Bananas are sufficient to meet the iron intake of anemic patients. Bananas contain lots of folic acid or water-soluble vitamin B6, which is needed to make nucleic acid and hemoglobin in red blood cells. Bananas which is enriched with vitamin B6 can neutralize stomach acid and improve digestion. In addition, bananas also contain 467 mg of potassium, and pregnant women need 2000 mg of potassium every day. Leg cramps, one of the most unpleasant symptoms of pregnancy, can be relieved by increasing your potassium intake [12].

From several related studies that have been carried out, it is found that based on the studies conducted,[13]There is an influence of Ambon Banana on Increased Hemoglobin Levels in

Pregnant Women at the FS Munggaran Clinic, Garut Regency with a P Value of 0.000 <0.05. So that it can be suggested and applied as an alternative way to overcome anemia that occurs in pregnant women besides that it must be balanced with the provision of Fe tablets and diet.

Studies conducted[14]There is an Effect of Consumption of Bananas (Musa Paradisiaca var Sapientum Linn) on Anemia in First Trimester Pregnant Women with a P Value of 0.001. Studies[8]showed that there were significant differences before and after the intervention and the control group with a P value = 0.000

According to the researcher's assumption, there are several factors that can affect hemoglobin levels, namely iron adequacy and iron metabolism in the body. Therefore, in fulfilling nutrition in pregnant women for iron adequacy, sufficient iron intake is needed, this iron can be obtained from Ambon bananas (Musa Paradisiaca var Sapientum Linn) and for iron metabolism, especially for iron absorption, fruit containing vitamin C is needed. namely ambon bananas (Musa Paradisiaca var Sapientum Linn) which are very good for helping increase the absorption of iron in the body so that hemoglobin levels in pregnant women will increase.

CONCLUSION

The results of this study showed that there was an effect of consuming Ambon banana on increasing hemoglobin levels in pregnant women.

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