



The Effect Of Date Fruit Consumption On Hemoglobin Levels In Pregnant Women In Trimester III

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ABSTRACT

Pregnancy is a period that is eagerly awaited because this period greatly determines the quality of human resources and the future of the fetus in the womb will greatly determine the development of the child in the future.

Purpose: This study aims to determine the effect of consumption of dates on hemoglobin levels in trimester III pregnant women at Kolaka Public Health Center, Kolaka Regency, Southeast Sulawesi Province in 2020.

This study used a quasi experimental research design. The study population was all pregnant women in the third trimester who experienced anemia in October-December 2020, as many as 22 people at the Kolaka Health Center.

Results: There was an effect of hemoglobin levels before and after giving dates in the treatment group ($p = 0.000$). There was an effect of hemoglobin levels after giving dates between the treatment group and the control group ($p = 0.001$). There is an effect of hemoglobin before and after giving dates in a group of pregnant women who are given dates and Fe tablets at the Kolaka Health Center, Kolaka Regency, Southeast Sulawesi in 2020. Increase the provision of health education about nutrition, especially anemia to pregnant women in the working area of Puskesmas Kolaka and carry out routine Hb level checks in the first and third trimester of pregnancy.

Keywords: Pregnant Women, Anemia, Dates, Hemoglobin Levels

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INTRODUCTION

Pregnancy is a very awaited period because this period greatly determines the quality of human resources and the future of the fetus in the womb will determine the growth and development of children in the future. One of the factors that affect the health of the mother and fetus is the nutrition obtained during pregnancy¹

Anemia in pregnancy cannot be separated from the physiological changes that occur during pregnancy, the age of the fetus, and the condition of the previous pregnant woman. During pregnancy, the body will experience significant changes, the amount of blood in the body increases by about 20-30%, thus requiring an increased supply of iron and vitamins to make hemoglobin (Hb). When pregnant, the mother's body will make more blood to share with her baby. The body needs up to 30% more blood than before pregnancy²

Anemia in pregnant women is a condition of the mother with hemoglobin (Hb) levels in the blood <11.0 g% as a result of the inability of the red blood cell-forming tissue (Erythropoetin) in its production to maintain Hb concentrations at normal levels. Normally, pregnant women have Hb levels of at least 11 g%³

Based on the 2013 National Health Demographic Survey (IDHS) data, the anemia rate in pregnant women is 40.1%, this condition shows that anemia is quite high in Indonesia. If it is estimated that from 2007 - 2013 the prevalence of anemia is still 40%, there will be 18 thousand maternal deaths per year due to bleeding after childbirth. The Maternal Mortality Rate (MMR) in Indonesia is very high at 30 per 100,000 live births, the high number is caused, among other things, by the poor health and nutrition of the mother during pregnancy.⁴

The government has carried out an anemia control program in pregnant women by giving 90 tablets of Fe with a dose of 60 mg to pregnant women during pregnancy with the aim of reducing anemia rate of pregnant women, but the incidence of anemia is still high (Badan Health Research and Development Ministry of Health RI, 2016). Pregnant women who have received 90 Fe tablets in Southeast Sulawesi Province in in 2019 of 92.64%,⁵

There are various ways to overcome and prevent anemia problems that occur in pregnant women, namely: by pharmacological and non-pharmacological methods. Pharmacological treatment For the treatment of nutritional deficiency anemia is the provision of supplementation iron tablets or iron tablets orally given 60 mg/day, whereas non-pharmacological methods can consume protein-rich ingredients that can obtained from animals and plants. Various fruits such as dates, beets, dragon fruit, pineapple, bananas, pomegranates are rich in minerals, both iron and iron which are needed to form red blood cells and hemoglobin.⁶

Dates contain Fe, B12 and folic acid, which is a hemoglobin-forming factor. The content of protein, carbohydrates and fat in dates supports hemoglobin synthesis process. substance level The iron in dates is also quite high, namely 0.90 mg per 100 grams of dates (11% RDA), where iron is one of the

components in blood to carry oxygen in the blood Because It is necessary to give dates in order to increase Hb levels to pregnant women⁷

Based on the preliminary study conducted, according to the Kolaka Health Center report from the month From January to May 2019, 60 people suffer from anemia (34.3%) . In January to June 2020 the suffering from anemia as many as 45 people.

Based on background description the researchers feel it is important to do Research on the Effect of Consumption Dates on Hemoglobin Levels in Pregnant Women at the Kolaka Health Center, Kolaka Regency, Southeast Sulawesi in 2020.

METHOD

This study used a quasi-experimental research design with a pretest posttest control group design where there were two groups of subjects as treatment and control groups who were randomly selected and both received pretest and posttest. This design was used to compare the results of measuring hemoglobin levels of pregnant women before and after treatment and to compare the two groups.

The population in this study are all third trimester pregnant women who experience anemia in Kolaka Health Center in October-December 2020 as many as 22 people. The sampling technique used is sampling The research used purposive sampling technique. The number of samples obtained is 22 respondents with the distribution of the treatment group as many as 11 respondents and the control group 11 respondents.

Checking Hb levels in pregnant women, if Hb is less than normal, namely 8-10.9 g / dl then used as research samples. Respondent done Giving ajwa dates once a day for 7 days in the morning as much as 7 items/day and coordinate with the respondent to provide documentation when consuming dates and then measuring hb levels after the 8th day of research.

The instrument used in the study was an observation sheet used to measure hemoglobin levels, respondent's number, name, age, Hb level examination tool and hemoglobin level observation sheet.

Univariate analysis is to determine the average value of hemoglobin levels pre-test and post-test. Bivariate analysis was carried out to determine the effect of dates with hemoglobin levels in third trimester pregnant women with anemia using the test **Paired T-test**.

RESULTS

Hemoglobin Levels Before and After Giving Dates in the Treatment Group

Hemoglobin levels	Average value	Std. Dev	p
Prior Hemoglobin Level	9.718	0.8542	0.000
Hemoglobin Level After	10,991	0.6041	
Difference	1,273	0.2501	

Hemoglobin Levels Before and After in the Control Group			
Hemoglobin levels	Average value	Std. Dev	p
Prior Hemoglobin Level	9,882	0.5964	0.640
Hemoglobin Level After	9,900	0.5848	
Difference	0.002	0.0116	

Differences in the difference in hemoglobin levels in pregnant women who receive iron tablets and dates and pregnant women who receive iron tablets

Variable	Average value	Std. Dev	p
Treatment Group	1,273	0.5081	0.000
Control Group	0.082	0.0751	

From the table above, pregnant women with anemia who received Fe tablets and added dates showed that the average hemoglobin level of pregnant women before being given dates and Fe tablets was 9.718 gr/dl, while after being given dates, it became 10.991 gr/dl. This indicates an increase in hemoglobin levels of 1.273 g/dl.

Based on the paired t-test test for hemoglobin levels before and after giving dates and Fe tablets to anemic pregnant women, p value = 0.000, which means there is a difference in the results of hemoglobin levels before and after giving dates to pregnant women who received Fe tablets and Dates Fruit. effect of giving Fe tablets and dates on hemoglobin levels.

DISCUSSION

Average Hemoglobin Levels Before and After Giving Dates to Pregnant Women who received Fe tablets and Dates

Based on the research results obtained an increase in hemoglobin levels of 1,273 g/dl in anemic pregnant women before and after being given Fe tablets and dates.

Dates which are rich in iron can increase hemoglobin levels in the blood. In addition to iron, the content of protein, carbohydrates, and fat in dates can help the process of hemoglobin synthesis. Consuming dates for 7 days as much as 100 grams or approximately 5-7 pieces on a regular basis will help increase hemoglobin levels in the blood. Enhancement Hb levels are possible because of nutrition adequate coupled with consumption Dates 25 grams / day for 10 days as well as consumption of Fe tablets.⁸

Dates which are rich in iron can increase hemoglobin levels in the blood. In addition to iron, the content of protein, carbohydrates, and fat in dates can help the process of hemoglobin synthesis. Carbohydrates are broken down into monosaccharides and then into glucose. Glucose as the main fuel

for metabolism will undergo glycolysis (breakdown) into 2 pyruvate and produce energy in the form of ATP and each of the pyruvate is oxidized to succinyl CoA⁹

Treatment of date palm juice has a lot of influence on increasing hemoglobin levels after being given 3 tablespoons a day, it is recommended before eating at a dose of 15 cc for one week. It can be said that the administration of date palm juice has an effect on increasing hemoglobin levels in third trimester pregnant women.¹⁰

Dates that are rich in iron can increase hemoglobin levels. The content of protein, carbohydrates, and fat in date juice as well as the content of glucose, Ca, Fe, Zn, Cu, P, and Niacin with palmyra which is rich in Vitamin A supports the synthesis of hemoglobin. mineral substances such as iron which are essential for the formation of hemoglobin. Iron which is immediately needed for the production of red blood cells is absorbed into the blood to be distributed to the bone marrow and will be used to form hemoglobin for new red blood cells which will bind oxygen for the needs of cell metabolism, especially to the liver so that the liver can carry out its functions properly including producing hormones. thrombopoietin¹¹

According to the researcher's assumptions, consuming dates and Fe tablets during pregnancy can increase hemoglobin levels in pregnant women, especially pregnant women who experience anemia because dates contain iron which can increase hemoglobin levels in the blood, so if you add dates and consume tablets regularly during pregnancy It can reduce the risk of anemia in pregnancy.

Effect of Fe Tablets and Dates with Hemoglobin Levels in Pregnant Women Given Fe Tablets and Dates

Based on the results of the study, it was found that there were differences in the results of hemoglobin levels before and after giving dates to pregnant women, meaning that there was an effect of giving Fe tablets and dates on hemoglobin levels. The increase in hemoglobin levels occurs due to: nutritional content in dates. In this research the increase in hemoglobin levels was more in the treatment group.

Dates are rich in iron which increases levels of hemoglobin. In addition, dates also contain protein, fiber, glucose, vitamins, biotin, niacin, and folic acid. Dates also contain minerals such as calcium, sodium and potassium. Protein content in Dates are around 1.8-2%, glucose levels are around 50-57%, and levels of 2-4% fiber¹²

Previous research has shown that giving date palm juice effect on hemoglobin levels in rats with anemia. These results indicate that the date palm juice which is rich in Iron can increase hemoglobin levels.⁷

According to USDA (United States *Department and Agriculture*) National Nutrient Database for standard reference, Dates have several components important that can increase levels of hemoglobin for those who consume it. Dates weighing 100 grams contains 2.81 grams of protein, 7.1 grams fiber, calcium 35 mg, carbohydrates 88.78 grams, vitamin C 0.4 mg and iron 1.02 mg. iron is a component of

hemoglobin in red blood cells which determines the carrying capacity of oxygen blood and helps overcome anemia¹³.

Research conducted on the measurement of hemoglobin levels before and after After giving dates, the average level of the average hemoglobin before giving dates was 13.45 gr/dl with a standard deviation of 1.32 gr/dl while the average level of hemoglobin after giving dates is 14.69 g/dl with standard deviation (0.89). This shows that there is increase in hemoglobin levels before and after treatment.¹⁴

Enhancement Hb levels are possible because of nutrition adequate coupled with consumption Dates 25 grams / day for 10 days as well as consumption of Fe tablets has been proven to increase Hb levels in pregnant women as many as 60% of respondents¹⁰

The results of research in the experimental group or others given dates statistically have an effect on the rate hemoglobin in pregnant women. While on the control group got the results the effect of giving iron tablets on hemoglobin levels in control group. Supplementation iron can improve iron status pregnant woman's body. Based on research that has carried out, it was found that there the effect of the difference in hemoglobin levels from both groups. Therefore, Dates can be used as one of the alternative choice in fulfilling iron requirements during pregnancy.¹⁵

Giving Dates affect hemoglobin levels. These results indicate that dates that are rich in iron can increase hemoglobin levels. The content of protein, carbohydrates, and fat in date juice as well as the content of glucose, Ca, Fe, Zn, Cu, P, and Niacin with palmyra which is rich in Vitamin A supports the synthesis of hemoglobin. mineral substances such as iron which are essential for the formation of hemoglobin.¹⁴

According to the researcher's assumptions, based on research that has carried out, it was found that there the effect of the difference in hemoglobin levels from both groups. Therefore, Dates can be used as one of the alternative choice in fulfilling the need for iron during pregnancy to be an additional consumption of Fe tablets which are routinely consumed by pregnant women.

CONCLUSIONS AND SUGGESTION

Based on the results of research on the effect of consumption of dates on hemoglobin levels in third trimester pregnant women at the Kolaka Health Center, Kolaka Regency, Southeast Sulawesi, it can be concluded that The average hemoglobin level before giving dates in the treatment group was 9,718 gr/dl and after giving dates 10,991 gr/dl. The value of $p = 0.000$ means that there is an influence between dates on hemoglobin levels in third trimester pregnant women with anemia.

Increase counseling activities about the importance of consuming Fe tablets during pregnancy regularly and can be added with dates and provide health education about nutrition, especially anemia to pregnant women in the working area of the Kolaka Health Center and carry out regular Hb levels checks in the first trimester and third trimester of pregnancy. It is hoped that other researchers will

conduct research by developing other variables that have not been studied in this study and with a larger number of samples.

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