



The Effect of Giving Bit Juice with Prevention of Anemia in Pregnant Women in Trimester Iii at The Clinic of Dina Karya Medan in 2021

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ABSTRACT

The World Health Organization (WHO) states that anemia is a serious global public health problem that especially affects women of childbearing age and pregnant women. The prevalence of anemia in women of childbearing age is 29.9%, in pregnant women 36.5%, in non-pregnant women 29.6%. Prevalence varies widely between countries and regions. The purpose of this study was to determine the effect of giving beetroot juice with the prevention of anemia in third trimester pregnant women. The research design used One Group Pretest-Posttest Design, namely one experimental research group by doing lactation massage. The population is 35 people. The sampling technique in this study used a purposive sample, with sampling using certain criteria, and the sample in this study amounted to 12 people. Data analysis is normality test, Paired Sample T-Test test. The results showed that after the Shapiro Wilk test the results were obtained with a pretest with a value of .091 and a posttest with a value of .134, which means that the value of the results of Shapiro Wilk is normally distributed, that is > 0.05 , and there is an effect of giving beetroot juice with the prevention of anemia in mothers. third trimester pregnant with pre_post statistical results obtained Sig. (2-tailed) is $0.000 < 0.05$. So the conclusion is that there is an effect of increasing hemoglobin levels before and after being given beetroot juice to pregnant women in the third trimester. It is recommended for pregnant women in the third trimester to consume beetroot juice to prevent anemia.

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1. Introduction

Pregnancy is a reproductive process that needs special care so that it can take place properly and does not pose a risk to pregnancy, because pregnancy contains the life of both the mother

and the fetus. The risk of pregnancy is dynamic, because pregnant women who were initially normal, suddenly can become high risk. (1).

High-risk pregnancies have danger signs in pregnancy including vaginal bleeding, severe headaches, frequent palpitations, shortness of breath and fatigue. Shortness of breath and heart palpitations are common for most pregnant women. Shortness of breath and heart palpitations during pregnancy indicate several possibilities, one of which is anemia (2). Anemia is a condition in which red blood cells decrease or decrease in hemoglobin, so that the oxygen-carrying capacity for the needs of vital organs in the mother and fetus is reduced (3).

Anemia is a condition that describes the level of hemoglobin or the number of erythrocytes in the blood that is abnormal or low. Hemoglobin functions to carry oxygen (oxyhemoglobin) and is circulated throughout the body for metabolic needs. The degree of anemia in pregnant women can be classified into 4 parts, namely: No anemia: Hb 11 g%, mild anemia: Hb 9-10 g%, moderate anemia: Hb 7-8 g%, severe anemia: Hb <7 g%. Anemia of pregnancy is called "potential danger to mother and child" (potential to harm mother and child), that's why anemia requires serious attention from all parties involved in health services (4).

Based on data from the World Health Organization (WHO) Anemia is a serious global public health problem that especially affects women of childbearing age and pregnant women. The prevalence of anemia in women of childbearing age is 29.9%, 36.5% in pregnant women and 29.6% in non-pregnant women. Prevalence varies widely between countries and regions. Among women of reproductive age, prevalence is highest in Central and South Asia and sub-Saharan Africa and lowest in North America and Europe (5).

Based on data obtained from the city of Medan in 2018, it showed that out of 39,240 pregnant women, there were 780 pregnant women who experienced anemia. The incidence of anemia in Indonesia is still high because prevention and treatment have not been carried out before pregnancy. Care services in pregnancy, namely preventing complications during pregnancy and childbirth with blood tests carried out at least twice during pregnancy, namely in the first and third trimesters, antenatal care visits at least four times during pregnancy, namely once in the first trimester, once in the second trimester. and twice in the third trimester (6).

Anemia in pregnancy is very dangerous for the mother and the fetus. The impact of anemia on pregnant women is abortion, premature delivery, inhibition of fetal growth and development in the womb, susceptibility to infection, antepartum bleeding, premature rupture of membranes, during delivery can lead to His disruption, the first stage of labor can last a long time and neglected parturition occurs. In the puerperium, uterine subinvolution occurs which can cause postpartum hemorrhage, facilitate infection of the puerperium, and reduce milk production (7).

Prevention of anemia in pregnant women can be done in two ways, namely pharmacologically and non-pharmacologically, pharmacologically by giving 60 mg tablets of Fe and 50 nano grams of folic acid during pregnancy (8). The non-pharmacological method is to

consume nutritious foods such as red meat, processed cow's milk, beef/chicken liver, seafood, nuts, green leafy vegetables, and fruits. can prevent anemia (9).

The content of beetroot is folic acid contained in beets by 34%, potassium by 14.8%, dietary fiber by 13.6%, Vitamin C by 10.2%, iron by 7.4%, copper by 6, 5%, Phosphorus 6.5%, Tryptophan 1.4%, Caumarin, and antioxidants (9).

This is supported by research conducted by Dina Dewi Anggraini 2018. The effect of giving beetroot juice to increase Hb levels in pregnant women in the third trimester. Based on the results of the study of Hb levels in third trimester pregnant women after being given beetroot juice for 7 days, it was found that most (56.2%) third trimester pregnant women experienced mild anemia with an increase in Hb levels in third trimester pregnant women found that the p value 0.004. This value $< \alpha$ is 0.05, which means that with a p value of 0.004 < 0.05 , there is a significant effect of giving beetroot juice on the increase in Hb levels of pregnant women in the third trimester. Beetroot contains high levels of folic acid and iron, both of which are needed in the formation of new red blood cells and hemoglobin in the body. The iron content is high enough, which reactivates and regenerates red blood cells and supplies oxygen which is useful for the health of red blood cells. Beetroot for pregnant women with anemia is believed to not only treat but prevent anemia (10). Based on the research of Wenda Stephana, et al entitled "Effectiveness of Giving Beet Juice Against Hemoglobin Levels of Pregnant Women With Anemia in 2018". This type of research used a quasi-experimental design with a nonequivalent control group with a population of 70 pregnant women with anemia whose hemoglobin levels were measured using an easy touch digital hemoglobin level measuring device. The results of statistical tests using independent t-test showed that the average hemoglobin level of pregnant women after being given beetroot juice in the experimental group was 11.27 and the average hemoglobin level of pregnant women without beetroot juice was 9.22. The results of the analysis obtained $p (0.000) < (0.05)$, it can be concluded that the administration of beetroot juice is effective on hemoglobin levels in pregnant women with anemia (8).

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Based on the results of an initial survey conducted by researchers at the Dina Karya Clinic in July 2021, researchers conducted a HB examination on third trimester pregnant women using easy touch GcHb and the results showed that from 5 third trimester pregnant women there were 3 pregnant women who had anemia. , 2 of the pregnant women with anemia named Sari with a HB level of 10.2 g/dl, and an UCI with a HB level of 10.4 g/dl, said they felt bored if they continued to take drugs, and the mother also did not know that this was the case. can cause a deficiency of hemoglobin in pregnant women which can have an adverse impact on the mother and fetus, and the mother also rarely consumes fruit even though the fruit has many benefits for the body. like beets, beets have many benefits, especially for increasing hemoglobin levels in the body because beets contain iron and folic acid, and 1 pregnant woman who has anemia named yani with HB levels of 10.2 g/dl said that they are often lazy to eat. taking the medicine given by the midwife and also the mother did not understand how to increase hemoglobin levels other than Fe tablets. Meanwhile, 2 pregnant women, including those who do not have anemia, named Susanti Novika with a HB level of 11.6 g/dl, and Sunarti with a HB level of 11.1 g/dl, said that they had regular pregnancy check-ups, consumed Fe tablets regularly, and also frequently consumed nutritious food and fruits so that the pregnant woman has normal HB levels during pregnancy with HB levels of 11 g/dl.

2. Research Methods

The design in this study used a quasi-experimental method (Quasy Experiment) with One-Group Pretest posttest without control. The population in this study were 35 third trimester pregnant women. Sampling using purposive sampling technique so as to obtain as many as 12 pregnant women in the third trimester. Data collection in this study consisted of primary data obtained directly by starting direct interviews using Hb checks in pregnant women using a HB measuring instrument (digital) regarding the administration of beetroot juice to pregnant women with anemia, secondary data obtained from the clinical midwife at the Ministry of Health. works on pregnancy visits and tertiary data were obtained from published manuscripts such as the World Health Organization (WHO), IDHS (Indonesian Health Demographic Survey) and the North Sumatra Health Office (11). The analysis technique used is univariate data analysis and bivariate analysis with Paired T Test.

3. Result And Discussion

3.1 Research result

3.1.1 Univariate Analysis

Table 1
Frequency Distribution of Respondents Based on Respondents Characteristics of Third Trimester Pregnant Women at the Dina Karya Clinic in 2021

| No. | Characteristics of Respondents | Total | |
|-------|--------------------------------|-------|------|
| | | F | % |
| | Age | F | % |
| 1. | 20-25 | 2 | 16,6 |
| 2. | 26-30 | 5 | 41,6 |
| 3. | 31-35 | 3 | 25 |
| 4 | 36-40 | 2 | 16,6 |
| | Parity | F | % |
| 1. | 1-3 | 9 | 75 |
| 2. | 4-6 | 3 | 25 |
| | Education | | |
| 1. | Junior High School | 3 | 25 |
| 2. | Senior High School | 8 | 66,7 |
| 3 | college student | 1 | 8,3 |
| | Pekerjaan | | |
| 1. | Housewife | 11 | 91,7 |
| 2. | Enterpreuner | 1 | 8,3 |
| | Gestational Age | | |
| 1 | 28-30 | 9 | 75 |
| 2 | 31-32 | 3 | 25 |
| Total | 12 | 100 | |

Based on table 1, it can be seen based on the age of the respondents, it shows that from 12 respondents aged 20-25 as many as 2 people (16.6%), ages 26-30 as many as 5 people (41.6%), ages 31-35 as many as 3 people (25%), and aged 36-40 as many as 2 people (16.6%). Parity 1-3 as many as 9 people (75%), and parity 4-6 as many as 3 people (25%). There are 3 people with junior high school education (25%), 8 people with high school education (66,7%) and 1 person with college education (8,3%). Based on the respondent's occupation, it shows that from 12 respondents working as IRT, as many as 11 people (91.7%), working as entrepreneurs as many as 1 person (8.3%), and the gestational age of 12 respondents at 28-30 weeks gestation as many as 9 people. (75%), and 31-32 weeks as many as 3 people (25%).

Tabel 2
Frequency Distribution of Increased Hemoglobin Levels Before and After Beetroot Juice was Given to Pregnant Women in the Third Trimester at the Dina Karya Clinic in 2021

| No | Kadar Hemoglobin (gr) | f | % |
|--------------------------------|-----------------------|----|------|
| Before Giving Beet Fruit Juice | | | |
| | 11 gr | 3 | 25 |
| | 9-10 gr | 9 | 75 |
| | 7-8 gr | 0 | 0 |
| | <7 gr | 0 | 0 |
| After Giving Beet Fruit Juice | | | |
| | ≥11 gr | 11 | 91,7 |
| | 9-10 gr | 1 | 8,3 |
| | 7-8 gr | 0 | 0 |
| | <7 gr | 0 | 0 |
| Total | | 12 | 100 |

Based on table 2 shows that from 12 respondents (100%) there are 3 (25%) respondents with hemoglobin levels of 11 grams, while 9 (75%) respondents with hemoglobin levels of 9-10. Based on table 2 shows that of the 12 respondents (100%) the majority there are the number of respondents with hemoglobin levels 11 grams as many as 11 (91.7%) respondents, while the minority is found in hemoglobin levels of 9-10 grams there are 1 (8.3%) respondents.

Tabel 3
Results of the Shapiro Wilk Normality Test on the Effect of Giving Beetroot Juice with Prevention of Anemia in Third Trimester Pregnant Women at the Dina Karya Clinic in 2021

| Variabel | Shapiro- Wilk | | |
|-----------|---------------|----|------|
| | Statistic | Df | Sig |
| Pre_test | .881 | 12 | .091 |
| Post_test | .894 | 12 | .134 |

Based on table 3, it is known that the results of the data normality test with Shapiro-Wilk can be concluded by comparing the value of the probability number with a significant level of 0.05 with decision making if the significant value is less than 0.05 then the data distribution is not normal, and if the significant value is greater of 0.05 then the data distribution is normal. based on table 4.3. it can be concluded that the pretest data is normally distributed because of the Asymp value. Sig .091 is greater than 0.05, and the post test data has an Asymp value of sig .134 greater than 0.05.

Tabel 4
Distribution of Respondents Based on Increased Hemoglobin Levels Before and After Beet Juice was Given to Pregnant Women in the Third Trimester at the Dina Karya Clinic in 2021

| Perlakuan | Mean ± SD | 95% Confidence | | Sig (2-tailed) |
|------------------|------------|----------------|-------|----------------|
| | | Lower | Upper | |
| Pretest_posttest | -1.40 ±342 | -1.62 | -1.19 | .000 |

Based on table 4 shows that it is known that there is a difference in the average value of the treatment before and after the intervention in the group before treatment and after treatment. Statistical test results obtained Sig (2-tailed) = 0.000 <0.05, meaning that there is a difference before being given treatment and after being given treatment.

3.2 Discussion

Beetroot is a plant that belongs to the Amaranthaceae-Chenopodiaceae family. Which means, beets are still in the same family as turnips and other root vegetables. Generally, this fruit is only used for its roots which taste sweet for health medicine, but over time, the flesh and leaves are also consumed. Beetroot, also known as Beta Vulgaris L, is a reddish-purple tuber plant. Shaped like a potato. Usually beets are consumed by juice or processed again into a meal with a soft texture. (12)

The benefits and content of beets, the amount of folic acid contained in beets is 34%, the benefits are to grow and replace damaged cells, prevent defects in the fetus and can support brain development in the fetus. Potassium of 14.8%, the benefits of balancing the condition of fluids in the body. Dietary fiber is 13.6%, the benefits are to facilitate the digestive process and nourish the digestive organs. Vitamin C is 10.2%, the benefits are to maintain the immune system and stimulate the formation of new cells and tissues. Magnesium of 9.8%, the benefits of maintaining muscle function and nervous system. Iron by 7.4%, the benefits of helping energy metabolism and binding oxygen in the blood. 6.5% copper, its benefits help the

formation of red blood cells. 6.5% phosphorus, its benefits are to strengthen bones. Tryptophan is 1.4%, its benefits are to support children's growth and accelerate healing when sick. Caumarin, serves to prevent the emergence of tumor cells Betacyanin, serves to prevent the emergence of cancer cells. (12)

Before testing the hypothesis, the data normality test was conducted to determine whether the research data were normally distributed or not. After the Shapiro-Wilk normality test was carried out, it was found that before being given (pre_test) beetroot juice to pregnant women in the third trimester, the value of sig = .091 was obtained and the results after being given (post_test) obtained a value of sig = .134, which means that the results of the Shapiro-wilk test were distributed normal with pre_post value > 0.05. Thus it can be concluded that the pretest and posttest data or before and after beetroot juice was given to pregnant women in the third trimester in this study were normally distributed.

Hemoglobin levels before being given beetroot juice showed that from 12 respondents (100%) there were 3 (25%) respondents with a hemoglobin level of 11 grams, while at 9-10 hemoglobin levels there were 9 (75%) respondents, thus It can be concluded that the hemoglobin level of pregnant women in the third trimester is only a few pregnant women who have hemoglobin levels within normal limits in the body, which is 11 grams. According to researchers, what causes the mother's hemoglobin level to not meet the normal level of hemoglobin is the lack of hours of rest for the mother, and the lack of intake of nutritious foods such as fruits that are high in folic acid and iron, such as beets. However, after being given counseling about the benefits of beetroot juice and given to pregnant women in the third trimester to be consumed regularly for 7 days, there was an increase in hemoglobin levels in third trimester pregnant women with 12 respondents (100%) having a hemoglobin level of 11 grams as much as 11 (91.7%) respondents, while the hemoglobin level of 9-10 grams was 1 (8.3%) respondents. So it can be concluded that beetroot juice can increase hemoglobin levels in the body so that it can be consumed to prevent anemia in third trimester pregnant women

Likewise with the results of the Paired Sample test, it is known that the value of Sig. (2-tailed) is 0.000 < 0.05, which means that H_0 is rejected and H_a is accepted. So it can be concluded that there is an effect of giving beetroot juice with the prevention of anemia in third trimester pregnant women at the Dina Karya Clinic, Medan in 2021.

The results of this study are also in line with the research of Wenda Stephana, et al, entitled "The Effectiveness of Giving Beet Juice Against Hemoglobin Levels of Pregnant Women With Anemia in 2018". Beetroot has many advantages for health and medicine. The content of betacyanin in beets is useful as an anti-cancer, because these substances can destroy tumor and cancer cells. Beetroot (*Beta vulgaris*) contains 109 mg of folic acid, and 10.0 vitamin C. Anemia that occurs in pregnant women can also harm the fetus they contain. Based on this study concluded that there is a significant effect of the effectiveness of giving beetroot juice on hemoglobin levels of pregnant women with anemia with the results obtained $p(0.000) < (0.05)$, it can be concluded that administration of beetroot juice is effective on hemoglobin levels in pregnant women. pregnant women with anemia. (8)

The results of this study are also in line with the research of Linaniar, et al entitled "Analysis of the effect of beetroot consumption on increasing hemoglobin levels in third trimester pregnant women". Beets contain folic acid and iron which are needed by the body, so beets are very good for consumption for the prevention and treatment of anemia, because the cause of anemia in the body is caused by a deficiency of iron and folic acid in the body, especially during pregnancy to prevent anemia. The threat posed by anemia to the fetus is the

risk of intra-uterine death, the risk of abortion, low birth weight, the risk of congenital defects. So that the research is carried out using the type of research design is Pretest-Posttest Control Group Design. The population in this study were 50 pregnant women in the third trimester with a total sample of 24 people, namely 12 respondents for the experimental group and 12 respondents for the control group. Based on the analysis of paired t-test in the experimental group, it shows that the p value is 0.002, this means $p < 0.05$, so there is a significant difference in hemoglobin levels between pre-test and post-test hemoglobin levels by consuming beets. Based on these results, it can be concluded that the average increase in hemoglobin levels of pregnant women in the third trimester given beets in the experimental group was 11.5 mg/dl. (12)

Hurin Safira et al's research entitled "The Effectiveness Of Giving Beetroot Juice On Increasing Hemoglobin (Hb) Levels Of Adolescent Women In Islamic Boarding School" The results showed that the hemoglobin level in adolescent girls before administration of beetroot juice was 12.03 g/dl \pm 1.90, whereas after administration of beetroot juice the average was 13.60 g/dl \pm 1.67. Hemoglobin levels before and after the intervention obtained $p = 0.001$ this proves that beets are very good for consumption to increase hemoglobin levels in the body because beets contain folic acid and iron. which means that there is a significant difference between hemoglobin levels before and after the beetroot juice intervention in adolescent girls in Islamic boarding schools. (13)

According to the researcher's assumptions, anemia is closely related to hemoglobin levels, hemoglobin itself has protein that is rich in iron and folic acid. Intake of iron and folic acid can be obtained from the intake of nutritious foods such as beets. Beetroot contains a total acid content of 34%, its benefits are to grow and replace damaged cells, prevent defects in the fetus and can support brain development in the fetus in third trimester pregnant women, and there is iron in beetroot tubers. This is what contains iron and can be used to increase iron levels in the blood in cases of anemia. So in this study researchers were interested in giving beetroot juice for 7 days to pregnant women to increase hemoglobin levels, and it was proven that beetroot tubers can increase blood sugar levels. hemoglobin levels, and so that it can be used for the prevention of anemia, and preferably in the provision of beetroot juice, such as lemon can be added to cover the aroma of beetroot juice, because when researchers conducted research on beetroot juice many pregnant women did not like the aroma of fruit juice. bits.

4. Conclusion

Based on the results of research conducted by researchers, it can be concluded that there is an effect of giving beetroot juice with the prevention of anemia in third trimester pregnant women at the Dina Karya Clinic in 2021 with the results of hypothesis testing it is known that the value of Sig. (2-tailed) is 0.000 < 0.05 , which means that there is an effect of giving beetroot juice with the prevention of anemia in third trimester pregnant women.

It is recommended to clinic leaders and health workers to be useful input and information for related parties, especially for the Dina Karya Clinic about the fact that there are still many mothers who do not know the impact of lack of hemoglobin levels during pregnancy.

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