

THE EFFECTIVENESS OF PROVISIONING BIT FRUIT JUICE ON INCREASING HB LEVELS FOR PREGNANT WOMEN WITH ANEMIA IN H. SYAHRUDDIN CLINIC TANJUNG BALAI

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ABSTRACT

Anemia is a condition where there is a decrease in hemoglobin, hematocrit, and erythrocyte counts below normal values. Severe anemia if Hb < 8 g/dl, mild anemia if Hb > 8-11 g/dl and normal in pregnant women Hb > 11 g/dl. It is known the effect of giving beetroot juice on hemoglobin levels of pregnant women with anemia at the H. Syahrudin Clinic, Tanjung Balai. Pre-experimental action with One group pretest-posttest design. The sample is 20 people, the sampling technique used is purposive sampling. Data collection using observation sheets and data analysis used is the T-dependent test. It is known that the average value of hemoglobin levels before administration and the average value of hemoglobin levels after administration of fruit juice is 0.021. There is an effect of giving beetroot juice to increase hemoglobin levels in pregnant women with anemia p value = 0.000 < 0.005.

Pregnant women can consume beetroot juice regularly to prevent anemia and consume foods that contain vitamin C.

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1. Introduction

Anemia is a major public health problem that is often found throughout the world, especially in developing countries such as Indonesia. This disorder is a cause of chronic disability that has a major impact on health, economic and social welfare conditions. The world population who suffers from anemia is about 30% or 2.20 billion people, with most of them living in the tropics. The global prevalence of anemia is around 51% (Suryani et al, 2015).

According to the World Health Organization (WHO) in 2015 around 800 women died from complications of pregnancy and childbirth. During the birth process, it can cause bleeding and eventually cause anemia. Nearly all of these deaths occurred due to poor resource management, and most were preventable. The main causes of maternal death include bleeding, hypertension, infection, and indirect causes. The risk of a woman in a developing country dying from a related cause during her lifetime is about 23 times higher than that of a woman living in a developed country (WHO, 2015).

Almost half of the pregnant women in Indonesia experience anemia or lack of blood. According to the Indonesian Ministry of Health (2018), as many as 48.9% of pregnant women in Indonesia experience anemia. The percentage of pregnant women experiencing anemia in Indonesia has increased compared to the 2013 Riskesdas data, which is 37.1% (Kemenkes RI, 2018).

Beetroot (*Beta vulgaris* L.) or often also known as beetroot is a root-shaped plant that resembles tubers, including from the Chenopodiaceae family. Red beet is a plant that is often found in Europe and parts of Asia and America. The physical characteristics of this type of beetroot are that the tuber is round like a potato with a dark red-purple color, only 1-3 meters high, and when you cut

the fruit you will see a white-white line with a pink color (Nanda, 2014). Beetroot has the main component, namely betacyanin pigment which gives a purplish red color (Wibiwanto, 2014).

Beetroot contains 14.8% potassium, 13.6% fiber, 10.2% vitamin C, 9.8% magnesium, 1.4% tryptophan, 7.4% iron, 6.5%, phosphorus 6.5%, and coumarin (Ministry of Agriculture, 2012) The human body needs iron to increase the production of hemoglobin, the protein that carries oxygen in the blood. Iron prevents anemia, which is caused by symptoms of low hemoglobin and causes symptoms of fatigue, low mood, shortness of breath, and heartburn. (Boldsy, 2020)

This is in accordance with research conducted by Kenjale et al (2011) in America which states that consumption of beetroot (which has been juiced) will increase plasma nitrate concentrations in patients with arterial disorders. after three hours and was able to walk 18% longer before the onset of pain.

According to research by Suryandari AE, (2015) on "Comparison of the increase in Hb levels in pregnant women who were given Fe with Fe and beets in the working area of the South Purwokerto Health Center" it is known that 500 ml of beet juice for 7 days can increase hemoglobin levels between 0.6 - 0.8 g/dl.

2. Method

This type of research is a pre-experimental design research. This type of research uses a one group pre test post test design, namely research conducted on one group which is measured before being given treatment and after being given treatment.

- a. Population and Research Sample
The population in this study is a pregnant woman who suffers from anemia at the H. Syahrudin Tanjung Balai clinic. The sampling technique used is Purposive Sampling.
- b. Data collection
The type of data collected is primary data in the form of respondents' identities, along with the variables studied through questionnaires and secondary data from respondents' medical records.
- c. Processing and analysis of data
The data will be processed using SPSS version 20 software. Data analysis will be carried out using quantitative analysis to obtain research results.

3. Results and Discussion

Based on the research that has been done, it can be seen in the results below;

3.1 Univariate Analysis

- a. Characteristics of Respondents

TABLE 1
CHARACTERISTICS OF RESPONDENTS

Number.	Age	Frequency	Percentage (%)
1.	20-25 Tahun	6	20%
2.	26-30 Tahun	9	45%
3.	31-35 Tahun	5	35%
	Total	20	100%

Based on the table, it is known that the age range of the respondents is 20-35 years. Respondents aged 20-25 years were 6 respondents (25%), respondents aged 26-30 years were 9 respondents (45%), while respondents aged 31-35 years were 5 respondents (50%).

- b. Frequency Distribution of HB Levels Before Consumption of Red Beet Fruit Juice H. Syahrudin Clinic

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TABLE 2
FREQUENCY DISTRIBUTION OF HB LEVELS BEFORE CONSUMPTION OF RED BEET FRUIT JUICE
H. SYAHRUDDIN CLINIC

Number.	HB	Total	Percentage
1.	>11 mg/dl	0	-
2.	< 11mg/dl	20	100%
Total		20	100%

Based on table, shows HB levels before consuming beetroot juice. The majority of respondents had HB levels <11mg/dl as many as 20 people (100%).

- c. Frequency Distribution of HB Levels After Consumption of Red Beet Fruit Juice H. Syahrudin Clinic

TABLE 3
FREQUENCY DISTRIBUTION OF HB LEVELS AFTER CONSUMPTION OF RED BEET FRUIT JUICE H. SYAHRUDDIN CLINIC

Number.	HB	Total	Percentage
1.	>11 mg/dl	20	100%
2.	< 11mg/dl	0	-
Total		20	100%

Based on table 4.5 shows the levels of HB after consuming beetroot juice. The majority of respondents had HB levels > 11mg/dl as many as 20 people (100%).

- d. The effectiveness of beetroot juice on the increase in HB levels in pregnant women at the H. Syahrudin Clinic, Tanjung Balai

TABLE 4
THE EFFECTIVENESS OF BEETROOT JUICE ON THE INCREASE IN HB LEVELS IN PREGNANT WOMEN AT THE H. SYAHRUDDIN CLINIC, TANJUNG BALAI

Number	Age Classification	Before Consuming				After Consuming				p-value
		11mg/dl	%	>11mg/dl	%	<11mg/dl	%	>11mg/dl	%	
1	20-25 Tahun	6	25%	0	-	0	6	25%		
2	26-30 Tahun	9	25%	0	-	0	9	25%		
3	31-35 Tahun	5	50%	0	-	0	6	50%	0,0	
Total		20	100%	0	-	0	20	100%	21	

Based on table 4.6 before consuming beetroot juice, respondents aged 20-25 years were 6 respondents (25%) had HB levels <11mg/dl, respondents aged 26-30 years were 9 respondents (45%), had HB levels < 11 mg/dl, while respondents aged 31-35 years totaled 5 respondents (50%) had HB levels <11 mg/dl, and after consuming beetroot juice a total of 20 respondents (100%) with an age range of 20-35 years obtained high levels of HB >11 mg/dl. The results of the Chi-Square Test, where the P value is 0.044 <0.05. This means that the incoming hypothesis (H0) is rejected and Ha is accepted, which means that there is an effectiveness of giving beetroot juice to increase HB levels in pregnant women with anemia.

3.2 Discussion

Relationship between consumption of beetroot juice and increased HB levels in pregnant women. The results of the Chi-Square Test, where the P value is 0.021 <0.05. This means that the incoming hypothesis (H0) is rejected and Ha is accepted, which means that there is an influence between the consumption of beetroot juice and an increase in HB levels of pregnant women at the H. Syahrudin Tanjung Balai Clinic in 2021.

The results of this study are in line with the research of Artathi Eka Suryandari, Ossie Happina sari (2015), giving 500 ml of beetroot juice and Fe to pregnant women in Purwokerto has been shown to increase Hb levels higher than the administration of Fe alone, which obtained the average Hb levels of pregnant women in the experimental group before giving beetroot juice of 9.50

g/dL and 9.18 g/dL in the control group. After administration of beetroot juice there was an increase in Hb levels, wherein the experimental group the Hb level was 11.27 g/dL and in the control group 9.22 g/dL the statistical test results showed a significant increase with $P < 0.05$.

After giving 200g of beetroot juice in the form of juice with a volume of 250 ml for 7 days, it was found that there was an increase in the erythrocyte index. One of the causes of increasing erythrocyte index levels after consuming beetroot juice is due to the content of nutrients such as iron, vitamin C, amino acids (tryptophan, lysine), calcium, phosphorus, sulfur, vitamin A, vitamin B1, and betacyanin as antioxidants (Helmi et al. 2013). Beets contain antioxidants that are useful for boosting the immune system of pregnant women, controlling blood sugar levels, and preventing anemia. For babies in the womb, the benefit of beets is to prevent babies from being born with defects thanks to the fulfillment of folate and iron intake (Halo Sehat.com)

This is in accordance with research conducted by Kenjale, et al (2011) in America which states that consumption of beetroot (which has been juiced) will increase the plasma nitrate concentration in patients with arterial disorders. after three hours and was able to walk 18% longer before the onset of pain.

4. Conclusion

From the results of the study entitled The Effect of Consuming Fruit Juice on Increasing HB Levels of Pregnant Women at the H.Syaruddin Tanjung Balai Clinic in 2021. With 20 respondents, the researcher used a check list sheet containing 15 questions. Then the results are presented in the form of a frequency distribution table and data analysis using the Chi-Square test. So it can be concluded that the research results are as follows The results of the Chi-Square Test, where the P value is $0.021 < 0.05$. This means that the incoming hypothesis (H_0) is rejected and H_a is accepted which means that there is an influence between the consumption of beetroot juice on the increase in HB levels of pregnant women at the H. Syahrudin Tanjung Balai clinic in 2021.

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