

## THE EFFECTIVENESS OF MUSIC THERAPY ON REDUCING ANXIETY LEVELS IN MATERNITY MOTHERS AT UPT PUSKESMAS CIOMAS IN 2023

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### ABSTRACT

Anemia is one of the indirect causes of death of pregnant women. The prevalence of anemia of pregnant women in developing countries is between 35-75%. One of the causes of the high prevalence of anemia in pregnant women is the need for iron and must consume iron. However, this method is often disliked because it causes nausea and vomiting caused by the smell of iron. Therefore, a healthy and safe breakthrough is needed through non-pharmacological therapy, one of which is by consuming beets. The aimed of this research to analyze the effectiveness of beet consumption in overcoming anemia in 2nd trimester pregnancy in Lebak village in 2023. Research design was *quasy experimental one group pre-post test*. Researchers will give beet juice with beet juice as much as 100 grams consumed in the form of fruit juice / juice up to a volume of 250 ml / day for 14 days. The study was conducted in April 2023 on 30 second trimester pregnant women. Measurements were carried out using the sahli method. The statistical analysis used is an *independent t test*. Giving beet juice can increase hemoglobin levels of pregnant women so that there is a change in the diagnosis of pregnant women from moderate anemia to mild anemia. The results of the analysis showed this relationship was significant (*p value*  $0.005 < 0.05$ ).

Keywords: anemia; beetroot; beta vulgaris l; haemoglobin

### INTRODUCTION

Anemia in pregnancy is defined as the condition of hemoglobin levels of pregnant women that are less than 11.0 grams / dl (Georgieff, 2020). Anemia is one of the indirect causes of death of pregnant women. According to (Mahjabeen, 2021) the prevalence of anemia of pregnant women in the world ranges from an average of 14%, in industrialized countries 56%, and in developing countries between 35-75%. Globally, 52% of pregnant women in developing countries are anemic. This figure is greater when compared to the anemia rate in pregnant women in industrialized countries of 20%. Countries with the highest prevalence of anemia in pregnant women are India (88%), followed by Africa (50%), while Indonesia is ranked 58th with a prevalence of anemia in pregnant women of 44.3% (Risnawati, 2021; Setyianingsih, 2020).

Based on data on the prevalence of anemia in Indonesia has increased from 37.1% in 2013 to 48.9% in 2018 with the proportion of anemia in the age group of 15 to 24 years and 25 to 34 years. One of the causes of the high prevalence of anemia in pregnant women is the increased need for iron due to changes in physiology and metabolism in the mother, inadequate intake (especially iron, folic acid and vitamin B12), absorption disorders, infections (malaria and worms), repeated pregnancy, *thalassemia and sickle cell disease, social, economic, cultural and educational conditions of the mother* (Zahyrah, 2020). Pregnant women should consume Fe tablets at least 1 tablet daily up to 90 tablets. However, this method is often disliked because it causes nausea and vomiting caused by the smell of iron. Therefore, a healthy and safe breakthrough is needed through non-pharmacological therapy, one of which is by consuming beets (Setyianingsih, 2020).

Beetroot contains vitamin B2 which plays an important role in increasing the activity of red blood cell formation and along with other types of B vitamins, riboflavin compounds react to spur the conversion process of carbohydrates obtained by the body and produce energy as part of the energy metabolism process. Giving beet extract 200 ml once a day is very beneficial against the addition of erythrocytes in people with anemia (Maulina, 2018). Beetroot also contains vitamins and minerals that have many benefits. Beetroot is able to stimulate building, cleansing and strengthening the circulatory system and red blood cells so that blood can carry body substances and can prevent the lack of red blood cells in the body. On the European continent, beet tubers are well known and used for the treatment of leukemia (Harahap and Liesmayani, 2020).

Based on preliminary studies from observations in the working area of Lebak village, Serang Regency, there is still no research related to the effectiveness of beet consumption levels in overcoming anemia in the 2nd trimester of pregnancy, so the effect is still unknown in overcoming anemia in the 2nd trimester. This makes researchers interested in conducting research related to the effectiveness of beet consumption levels in overcoming anemia in the 2nd trimester of pregnancy in Lebak village in 2023.

## METHOD

The design of this study is a quasi-experiment or quasy experiment one group pre-post test. Researchers will give beet juice with beet juice as much as 100 grams consumed in the form of fruit juice / juice up to a volume of 250 ml / day for 14 days . The study was conducted in April 2023 on 30 second trimester pregnant women. Measurements are made first using the sahli method. Follow up is done during repeat visits for third trimester pregnant women or by appointment for pregnant women who have a schedule of once every 1 month. Univariate analysis will be presented in the form of a frequency distribution table. Bivariate analysis was performed by chi square method using SPSS. Ethical feasibility has been issued under number 1590/S1/S1. KEB/STIKES-AN/IV/2023.

## RESULTS AND DISCUSSION

Table 1.

Results of the analysis of the relationship between beet juice in Lebak Village in 2023						
Anemia before beets are given	Anemia after being given beets				Total	
	Mild anemia (9-10)		Moderate anemia (7-8)		f	%
	f	%	f	%		
Mild anemia (9-10)	9	30.0	3	10.0	12	40.0
Moderate anemia (7-8)	8	26.7	10	33.3	18	60.0

Table 1 based on the results of the frequency distribution table above, there was an increase in the average hemoglobin level of maternal blood and a fairly high increase from the maximum hemoglobin level of pregnant women who had been given beets, namely from 9.7 to 11.4.

Table 2

	Test data normality			
	Kolmogorov- Smirnov		Saphiro-Wilk	
	Df	Sig	Df	Sig
Haemoglobin levels of pregnant women	60	<0.001	60	<0.001

Table 2 based on the table of data normality test results, it can be seen that the significance value is smaller than 0.05, so it can be interpreted that the data is not normally distributed.

Table 3.  
 The results of the analysis of the effectiveness of giving beet juice against the increase in Hb levels

	Mean	Std Deviation	Minimum	Maximum	P value	95% CI
Hb levels before beets are given	8.2	0.95	7.0	9.7		-1.42 –
Hb levels after beets	9.0	5.18	7.0	11.4	0.005	-0.27

Table 3 based on the results of *independent t test analysis*, it can be concluded that giving beet juice can increase hemoglobin levels of pregnant women and is statistically significant (*p value*  $0.005 < 0.05$ ). The results of this study are in line with research conducted (Utaminingsyas, 2017) that there is a difference in the increase in Hb levels after pregnant women are given 500 ml beet juice for seven consecutive days. Although different compositions in 1 drink, the provision of beet juice in this study has the same amount, because it is given 14 days with a one-time portion of 250 ml to avoid saturation and nausea when drinking too much beet juice. Previous research has also explained the antianemia effects in beets that work by stimulating the circulatory system and helping to build red blood cells because they contain folic acid and B12. *Beta vulgaris L* or beets is an important key in cellular metabolism and is needed in the development of erythrocytes and is able to clean and strengthen blood cells in order to carry nutrients throughout the body so that the number of red blood cells will not decrease (Saula, 2020; Princess, 2016).

One of the causes of increased levels of Hb, hematocrit, and erythrocytes after consuming beets is the content of folic acid, iron, vitamin C, vitamin B12, vitamin E, pyridoxine, protein, and copper play an important role in the bone marrow (Putri, 2020). Folic acid and vitamin B12 are key players in cellular metabolism and are also needed in the normal development of erythrocytes in the bone marrow. Beetroot contains vitamin C 2 - 4 times more than citrus fruits (Ikawati, 2018). Vitamin C plays a role to help the absorption of iron in the intestine. Vitamin C or ascorbic acid has easily oxidizing properties. Total Hb levels are positively related to plasma vitamin C levels. The results proved that vitamin C is able to increase the production of erythrocyte cells by mobilizing iron stores in tissues in the form of hemosiderin (iron stores in tissues, especially in the liver). Vitamin C also helps release Fe from transferrin in plasma in order to combine into tissue ferritin (Zuhraini, 2021). The protein content in beets consisting of amino acids along with vitamin C will help the process of reducing ferric ( $Fe^{3+}$ ) to ferrous ( $Fe^{2+}$ ) so that they are easily absorbed (Sari, 2022). The pigment content in beets is an antioxidant compound that affects the resistance of erythrocyte walls, erythrocyte membranes are one of the cell membranes that are vulnerable to free radical attacks (Ikawati, 2018). If free radicals attack the erythrocyte membrane, the fluidity of the cell membrane will be disrupted which can cause lysis and even cell death so that changes will occur in the number of erythrocytes and hemoglobin levels. This results in a decrease in the number of erythrocytes (Rifni, 2023). Therefore, by eating beets that contain flavonoids can affect the increase in the number of erythrocytes and hemoglobin.

## CONCLUSION

Giving beet juice can increase hemoglobin levels of pregnant women so that there is a change in the diagnosis of pregnant women from moderate anemia to mild anemia.

## REFERENCES

- Georgieff, M. K., 2020. Iron deficiency in pregnancy. *American journal of obstetrics and gynecology*, 223(4), pp. 516-524.
- Harahap, F. S. D., & Liesmayani, E. E. (2020). Analysis of the effect of beet consumption on increased hemoglobin levels in III trimester pregnant women. *Health Care: Journal of Health*, 9(1), 1-8.
- Ikawati, K., 2018. Effect Of Beets (Beta Vulgaris) On Erythrocyte Index In Adolescent Girls With Anemia. *Journal of Nursing and Public Health*, 6(2), pp. 60-66..
- Mahjabeen, N. N. S. Z. A. & S. S., 2021. The Prevalence of Premature Rupture of Membranes (PROM) in Anemic and Non-anemic Pregnant Women at a Tertiary Level Hospital. *European Journal of Medical and Health Sciences*, 3(4), pp. 25-27.
- Maulina, N. (2018). Comparison Of The Effectiveness Of Honey With Beetroot Extract (Beta Vulgaris) On Increased Hemoglobin (Hb) Levels In Male White Mice (Mus Musculus L) Double Ditsch Webster Strain. *Anatomica Medical Journal/ Amj*, 1(3), 167-178.
- Putri, H. A. A. D. & P. F. D., 2020. Analysis of the Effect of Beetroot Juice (Beta Vulgaris) on Increased Hemoglobin Levels in Patients with Anemia. *Journal of Nursing and Health*, 5(1), pp. 1-8.
- Putri, M. C., 2016. Antianemia effect of beets (Beta vulgaris L.). *Journal of the Majority*, 5(4), pp. 96-100.
- Rifni, I., 2023. Beetroot Ice Cream As An Alternative To Improving Hematological Status In Anemic Postpartum Mothers Who Received Fe Tablet Supplementation (Study in Semarang City). *Journal of Omicron ADPERTISI*, 2(1), pp. 45-52.
- Risnawati, I. I. I. & S. S., 2021. The effectiveness of beet juice on hemoglobin levels of pregnant women with anemia at the Tayu I Health Center. *Indonesia Journal of Midwifery*, 5(1), pp. 36-41.
- Sari, H. S. E. S. G. G. I. I. U. & A. P., 2022. Counseling On The Use Of Beet Juice To Increase Adolescent Hb Levels. *Putri Hijau Community Service Journal*, 3(1), pp. 60-64.
- Saula, L. S. H. V. L. H. K. A. L. C. F. P. G. K. & A. S. D., 2020. Beetroot (Beta vulgaris l.) as an antianemia. *HSG Journal*, 5(2), pp. 14-16.
- Setyianingsih, S. W. W. & K. W., 2020. The effectiveness of beet and lemon juice in increasing Hb levels in pregnant women. *Journal of Midwifery Malahayati*, 6(1), pp. 71-76.
- Utamingtyas, F., 2017. Benefits of beets (beta vulgaris) to increase haemoglobin (Hb) levels of pregnant women. *Ar-Rum Salatiga Health Scientific Journal*, 2(2), pp. 41-45.
- Zahyrah, S. D. S. & W. I., 2020. Effectiveness of Beta Vulgaris L (BIT) Juice To Increase Haemoglobin Levels In Pregnant Women Anemia at Primary Health Care Kotaraja. *Journal of Midwifery Science: Basic and Applied Research*, 2(2), pp. 48-53.
- Zuhraini, R. A. A. K. D. & S. S., 2021. The effect of giving beet juice with increased Hb in adolescent girls. *Midwifery Journal*, 1(3), pp. 144-149.