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Research Article

Comparison of Giving Beet and Date on Haemoglobin Among Pregnant Women with Anemia

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Abstract

Aims : The purpose of this study is to evaluate the efficacy of administering beets and dates to pregnant women who have moderate anemia in terms of boosting their hemoglobin levels.

Method : This research design employs a quasi-experimental study approach, which includes a pre-test and a post-test, as well as research instruments that make use of observation width and hydrogen bond level measuring equipment. It is the paired t-test that is utilized as the statistical test.

Results : In the beetroot group, the results obtained were a mean pre test of 10.09 and a mean post test of 12.2 so it can be concluded that the mean difference is 1.3 (10.09- 12.2) and P value = 0.329 ($P > \alpha$) so It can be concluded that the comparison of increasing hemoglobin levels in the beetroot group is more effective than the dates group for pregnant women in the third trimester at BPM Siti Hamidah

Conclusion : Giving beetroot juice is more beneficial in boosting the HB levels of pregnant women with mild anemia, according to BPM Siti Hamidah.

Keywords:

Anemia, Beetroot, Dates, Hemoglobin, Pregnant Woman

INTRODUCTION

The condition of pregnancy is one that is extremely susceptible to a wide range of stressors, which can lead to alterations in the way that the body's physiological and metabolic processes operate. There is also an increase in the requirement for energy and oxygen during pregnancy. The placenta also has a large number of mitochondria, which speeds up the oxidative metabolic process in order to produce energy. This, in turn, has an effect on the continuation of the pregnancy process (1). In pregnancy, the metabolic process triggers physiological changes that obscure the diagnosis and assessment of a number of hematological disorders (2). An increase in the utilization of oxygen from the mother's body, the placenta, and the development of the fetus is one of the most significant changes that

occurs during pregnancy. Anemia occurs when the quantity of red blood cells (erythrocytes) or the oxygen transporter hemoglobin (Hb) in the blood does not meet the physiological requirements of the pregnant woman's body (3).

Anemia is a reduction in hemoglobin levels below normal values (4). It is a national problem that reflects the socio-economic wellbeing of society and has a significant impact on human resources. Anemia in pregnancy is a condition that affects a lot of people. "Potential Danger To Mother And Child" (also known as "potentially harmful to mother and child") is the term used to describe anemia that occurs in the mother. Therefore, in the future, all those who are involved in the provision of health services

will need to pay careful attention to the issue of anemia (5).

The prevalence of anemia in pregnancy in the world is around 10% -20% and in Indonesia it shows a fairly high value, namely 63% (6). Anemia in pregnancy is a lack of hemoglobin (Hb) levels of less than 11% in pregnant women. One of the causes of complications in pregnancy is a lack of iron, which causes death during pregnancy and post-pregnancy. There are 20% of deaths in developing countries, the main cause is a lack of red blood cells. Anemia has a huge impact on pregnancy, childbirth, postpartum and babies. The effects of anemia on pregnancy that can occur include premature labor, antepartum hemorrhage, PROM, abortion, etc. Anemia can also affect labor, including placental retention and postpartum hemorrhage due to uterine atony. During the postpartum period, anemia can result in uterine subinvolution, anemia during the puerperium. In the fetus, mothers with anemia will reduce the body's metabolic ability, thereby disrupting the growth and development of the fetus in the womb and disorders can occur in the form of abortion, LBW, intrauterine death, congenital defects (7). There are several types of efforts to overcome anemia in pregnant women, including pharmacological and non-pharmacological (Professional Health Profile of Answerarat, 2019). The pharmacological method can be to consume a minimum of 90 Fe tablets during pregnancy at a dose of 60 mg. Meanwhile, non-pharmacological methods can be done by administering herbal or plant medicines, such as nuts, red spinach, beta vulgaris L (beetroot), and dates (8).

Beetroot is a non-pharmacological therapy that offers several significant health benefits. Among all the benefits of beets, beets are one of the fruits that contain quite high levels of iron compared to other fruits such as dragon fruit and melon. The iron content in beets is 7.4% (9). Iron is important for maintaining and forming healthy red blood cells so that it can ensure the circulation of oxygen and iron needed by pregnant women. It has been

suggested by naturopaths that this fruit be consumed in order to cleanse the intestines. There is a high concentration of copper and folic acid in beetroot, both of which are beneficial for assisting in the development of the brain of the infant and conquering the issue of anemia (10).

Dates, in addition to beets, are among the fruits that have the ability to raise hemoglobin levels. Dates are a good source of energy since they contain a high concentration of carbs. Glucose, fructose, and sucrose are the elements that make up a portion of the sugar content. The data provided by the Hajj Health Ministry explains that the iron level in dates is also fairly high, namely 0.90 mg/100 gr of dates, which is equivalent to 11% of the recommended daily allowance. Iron is one of the components in the blood that helps to carry oxygen in the blood, which helps to maintain balance. the presence of iron in the body, which in turn lowers the likelihood of bleeding in pregnant people (11). In research conducted by Liananiar 2020, it was found that there was a significant difference in hemoglobin levels between pre-test hemoglobin levels and post-test hemoglobin levels by consuming beets. These results can be concluded that there was an increase in the average hemoglobin level of pregnant women in the third trimester who were given beets in the experimental group, which was 11.5 mg/dL (12).

METHODS

The purpose of this study was to investigate the relationship between the independent variables and the dependent variable. The research was conducted in the form of a quantitative study that utilized an analytical descriptive design. The research strategy utilized in this study is known as a cross-sectional method, which is a type of research design that involves making observations or measurements at the same time (at one time) between the independent variables and the dependent variable.

All women who were pregnant at the time of the study were considered part of the population. During the time that data is being collected, pregnant women who reside permanently at the study location will be included. Up to sixteen individuals from November to December 2023. When conducting this study, researchers used a specific set of procedures to select a subset of the population to represent the whole. A total of 256 respondents were selected from the current population and randomly assigned to one of two groups: group I, which utilized the Brain Storming approach, and group II, which relied on the Buzz group method (14).

RESULTS

Table 1. Distribution of Respondent Characteristics

Variable		Beet		Date	
		F (n=16)	%	F (n=16)	%
Age	18-24	7	43,75	8	50
	25-28	5	31,25	4	25
	29-33	4	25	4	25
Education	Junior high school	13	81.25	10	62,5
	College or university	3	18.75	6	37.5
Working status	Household	13	81.25	9	56,25
	Private sector	2	12,5	7	43,75
	Teachers	1	6,25	0	0

Based on table 1 above, it can be concluded that the majority of respondents in the beetroot group were 18-24 years old, 7 respondents (43.75%) and in the date palm group, 8 respondents (50%) were aged between 18-24 years. The educational level of the beetroot group was mostly MA/SMA/SMK education as many as 13 respondents (81.25%) and the date palm group as many as 10 respondents (62.5%). For the work category in the beetroot group, the majority worked as housewives (housewives) as many as 13 respondents (81.25%) and in the dates group the majority worked as housewives as many as 9 (56.25%).

Table 2. Mean Hemoglobin Levels for Groups of Beetroot and Dates

	N	Minimum	Maximum	Mean	Std. Deviation
Pre-Test beet	16	10,0	12,0	10,881	,5811
Post-Test beet	16	10,5	12,3	11,188	,5340
Pre-Test date	16	10,0	13,3	11,181	,9425
Post-Test date	16	10,5	14,0	11,694	1,076

Based on table 5.2, it was found that the average pre-test hemoglobin level in the beetroot group was 10.0 gr/dL and in the post-test it was 12.0 gr/dL. Meanwhile, the average hemoglobin level in the pre-test of the date group was 10.0 gr/dL and in the post-test was 14.0 gr/dL.

Table 3. Pre-test and post-test hemoglobin levels in the beet and date groups

Group	Variable	N	Mean ± std.Deviasi	P value	P Mean	Std. Error
Beet	Pre test	16	10.0 ± 0.5811	0,32	3.32	0.2356
	Post test	16	12.3 ± 0.5340			
Date	Pre test	16	10.0 ± 0.9425	0.24	0.04	0.00854
	Post test	16	14.0 ± 1,0767			

The paired t-test findings for the beetroot group and the date palm group are displayed in the table. It can be inferred from the comparison results that third trimester pregnant women's hemoglobin levels increase, as the beetroot group had an average pre-test value of 10.00 and an average post-test value of 12.3. The mean difference value was 2.03 (10.0 - 12.3) and P value = 0.249 ($P > \alpha$). The results for the beetroot group showed an average pre-test score of 10.09 and an average post-test score of 12.2, resulting in a mean difference of 1.3 (10.09 - 12.2) and a p-value of 0.329 ($P > \alpha$).

DISCUSSION

The large need for iron in third trimester pregnant women requires mothers to help absorb the iron they consume. Because there are foods and drinks that can interfere with the absorption of iron. This is in accordance with Erwin (13) that 76.9% of pregnant women who consume iron inhibitor foods experience anemia. The comparison of increasing hemoglobin levels in the beetroot group was more effective than the date palm group for pregnant women in the third trimester at BPM Siti Hamidah. In accordance with the research results of Anggraini, Purnomo and Trijantontp (14) that 100 grams of beetroot contains 1.1 mg of iron, therefore Giving beetroot juice to pregnant women who experience mild anemia can help restore the mother's low hemoglobin levels. Ripe dates are rich in calcium and iron. The iron content in dates is 1.5 mg per 100 grams of dates. Dates contain high amounts of iron which can function to increase hemoglobin levels in red blood cells (15). In order to enhance this, it is strongly recommended that you drink vitamin C, which will assist in the absorption of iron, so allowing for the reduction or eventual elimination of anemia. By stimulating the circulatory system and assisting in the formation of red blood cells, beets are effective. This is due to the fact that the folic acid and B12 content of beets are essential components of cellular metabolism and are required for the correct development of

erythrocytes. For the purpose of ensuring that the number of red blood cells does not diminish, beetroot has the ability to cleanse and strengthen the blood, thereby allowing the blood to transport nutrients throughout the body (16). 100 grams of beetroot contains 1.1 mg of iron, therefore giving beetroot juice to pregnant women who experience mild anemia can help restore the mother's low hemoglobin levels (17).

Anemia can be treated with dates. The calcium and iron content of ripe dates is quite high. Dates have a total iron concentration of 1.5 milligrams per one hundred grams of dates. The high quantities of iron that are found in dates have the potential to raise the quantity of hemoglobin that is found in red blood cells (18). We were able to determine the P value by analyzing the results of the paired sample t test that was performed on the beetroot and date palm fruit groups. Based on the results of the beetroot group (0.329) and the date group (0.249), it is possible to draw the conclusion that the beetroot group is more effective than the date group. The iron content of beets, which contains very high quantities of folic acid and iron, is a factor that contributes to this phenomenon. Folic acid and iron are known to reactivate and rebuild blood cells. red and provides oxygen, both of which are beneficial to the health of cell (19).

CONCLUSIONS

In the beetroot group, the hemoglobin levels of respondents before and after the experiment were found to have a P value of 0.329, with an average pre test result of 10.00 and a post test result of 12.3. On the other hand, in the date palm group, a P value of 0.249 was found to be acquired with an average pre test result. it is possible to draw the conclusion that the comparison between providing beets and dates is more successful in boosting the HB of pregnant women with mild anemia in the third trimester at BPM Siti Hamidah. This conclusion can be reached since the date group had a score of 10.0 and the post test scores were 14.0.

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