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COMPARISON OF THE EFFECT OF GIVING FE TABLETS WITH RED DRAGON FRUIT AND WITHOUT RED DRAGON FRUIT ON HEMOGLOBIN LEVELS IN PREGNANT WOMEN

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Abstract

Comparison The Effect of Giving Fe Tablets With Red Dragon Fruit and Without Red Dragon Fruit on Hemoglobin Levels in Pregnant Women in the Caile Health Center Work Area. Consumption of red dragon fruit is an alternative to accelerate iron absorption because it contains vitamin C. Where iron is a raw material for red blood cells, while vitamin C helps optimize iron absorption through the digestive tract . Data obtained from the Bulukumba Regency Health Office, namely 602 pregnant women. The number of pregnant women who experienced anemia in 2023 was 72 people and anemia sufferers in January to March 2024 were 36 people. The purpose of the study was to determine the Comparison of the Effect of Giving Fe Tablets With Red Dragon Fruit and Without Red Dragon Fruit on Hemoglobin Levels in Pregnant Women in the Caile Health Center Work Area. The research design used was Quasy - Experimental with a research approach. non equivalent control group pre test and post test design . The sample size is 34 people. The sampling technique is purposive sampling technique. The study was conducted from May to July 2024 at the Caile Health Center, Ujung Bulu District. The results of the study obtained were the average Hb levels of pregnant women before the intervention were 9.94 gr / dl then the average Hb levels of pregnant women after consuming Fe tablets with red dragon fruit increased to 10.87 gr / dl. While the average Hb levels in the control group were 9.88 gr / dl then the average Hb levels after consuming Fe tablets were 10.10 gr / dl. With a paired T test, a p value of 0.000 was obtained , so it was concluded that there was a significant difference in the average between the intervention group and the control group . So it can be concluded that there is a significant difference in Hb levels between before and after treatment, both in the intervention group and in the control group.

Keywords: *Red Dragon Fruit, Hb, Anemia*

1. INTRODUCTION

Anemia in pregnancy can be interpreted as pregnant women who experience iron deficiency in the blood. In addition, anemia in pregnancy can also be said as a condition of the mother with hemoglobin (Hb) levels <11gr/dl in the first and third trimesters while in the second trimester the hemoglobin level is <10.5 gr/dl (Dwi Ertiana, 2018). Most pregnant women will experience some level of anemia because iron is needed to produce red blood cells in the fetus. Anemia can occur during pregnancy due to a lack of folic acid. During pregnancy, anemia can be prevented and treated by using iron and folic acid supplements (Winarsih, 2018).

Anemia occurs due to various causes, such as iron deficiency, folate deficiency, vitamin B12 and protein. Directly, anemia is mainly caused by insufficient production/quality of red blood cells and blood loss either acutely or chronically (Wiwit Dwi N, 2019). The impact of anemia on pregnant women during pregnancy can cause abortion, premature labor, fetal growth and development disorders in the womb, easy infection, threat of cordis decompensation Hb <6 gr/dl, premature rupture of membranes, and antepartum hemorrhage (Simbolon, Jumiyati and Rahmadi, 2018). Efforts that need to be made to increase hemoglobin levels and reduce the incidence of anemia, namely the need to consume Fe tablets regularly and consume foods with balanced nutrition and foods high in iron and vitamin C, especially green vegetables and fruits such as dragon fruit. Dragon fruit can be consumed directly or through dragon fruit processing such as juice (Proverawati, 2017).

2. METHODOLOGY

This study is a quasi-experimental study with a non-equivalent control-group pretest-posttest design approach. In this study, the treatment group and control group were selected non-randomly. Before and after treatment, measurements or observations were made on both groups. The researcher divided the respondents, totaling 3-4 people, into two groups, namely 17 pregnant women with the provision of red dragon fruit as much as 1 00 grams every day with Fe tablets, and 17 pregnant women were given Fe tablets only. After that, it was carried out Initial Hb measurement and observation for 14 days and then repeated Hb measurement to determine the final results of the study.This research has gone through the ethical permit processing process and has obtained a permit certificate with No: 001490/KEP Stikes Panrita Husada Bulukumba/2024

3. RESULTS

This research was conducted in the Caile Health Center Working Area, Bulukumba Regency, regarding the comparison of the effects of giving Fe tablets with red dragon fruit on hemoglobin levels in pregnant women with a sample size of 34 respondents.

3.1 Respondent Characteristics

Table 5.1: *Distribution of Respondent Characteristics Based on Age, Parity, and Education At the Caile Health Center, Bulukumba Regency*

Average Hemoglobin Level	Mean	Minimum	Maximum
Before Intervention	9.94	8.10	10.90
After Intervention	10.87	9.40	11.30
Difference	0.93	0.30	1.80

Based on table 5.1 shows the results that the characteristics of respondents in the intervention group based on the age of respondents, most respondents are in the age range (> 20-35 years) as many as 16 people (94.1%) respondents, based on parity, most respondents are primigravida as many as 9 people (52.9%). And based on education, most are at the high school / vocational school level as many as 11 people (64.7%). While the characteristics of respondents in the control group based on the age of respondents are in the age range (> 20-35 years) as many as 17 people (100.0%) respondents, based on parity, most respondents are primigravida as many as 9 people (52.9%). And based on education, most are at the high school / vocational school level as many as 15 people (88.2%).

3.2 Univariate Variables

Hemoglobin Levels of Respondents Before and After in the Intervention Group

Table 5.2 *Average Hemoglobin Levels in the Intervention Group at Caile Health Center, Bulukumba Regency*

Characteristics	Intervention		Control	
	F	**%**	**F**	**%**
Age				
Age Range (>20-35 years)	16	94.1	17	100.0
Age range (<20 and >35 years)	1	5.9	0	0
Parity				
Primigravida	9	94.1	9	94.1
Multigravida	8	5.9	8	5.9
Education				
SD	1	5.9	0	0
Junior High school (SMP)	1	5.9	1	5.9
High School/Vocational School (SMA/SMK)	11	64.7	15	88.2
D3	1	5.9	0	0
S1	3	17.6	1	5.9
Amount	17	100.0	17	100.0

Based on table 5.2 above, it can be seen that there are changes before and after the intervention. It can be seen from the change in the average hemoglobin level before the intervention, the mean value was 9.94 gr/dl, the minimum value was 8.10 gr/dl and the maximum value was 10.90 gr/dl. The change in the average hemoglobin level after

the intervention was given was a mean value of 10.87 gr/dl, a minimum value of 9.40 gr/dl and a maximum value of 11.30 gr/dl. While the results of the difference in the mean value were 0.93 gr/dl, a minimum value of 0.30 gr/dl and a maximum value of 1.80 gr/dl.

Table 5.3 *Distribution of Anemia Levels in the Intervention Group at Caile Health Center*

Anemia Level	**Hb *Pre Test***		**Hb *Post Test***	
	N	**%**	**N**	**%**
No Anemia	0	0	6	35.3
Mild Anemia	15	88.2	11	64.7
Moderate Anemia	2	11.8	0	0
Severe Anemia	0	0	0	0
Amount	17	100.0	17	100.0

Based on table 5.3, it shows that of the 17 respondents in the intervention group, most of the respondents before the intervention were 0 people (0%) with normal anemia/not anemia, mild anemia 15 people (88.2%), moderate anemia 2 people (11.8) and severe anemia 0 people (0%). And after the intervention, respondents with normal anemia/not anemia were 6 people (35.3), mild anemia 11 people (64.7%), moderate anemia and severe anemia were 0 people (0%).

3.3 Hemoglobin *Levels of Respondents Before and After in the Control Group*

Table 5.4 *Average Hemoglobin Levels in the Control Group at the Caile Health Center, Bulukumba Regency*

Average Hemoglobin Level	**Mean**	**Minimum**	**Maximum**
Before Control	9, 88	7.30	10.90
After Control	10, 00	7.50	11, 00
Difference	0, 21	0.00	0.40

Based on table 5.4 above, it can be seen that there were changes before and after consuming Fe Tablets in the control group. It can be seen from the change in the average hemoglobin level before control with a mean value of 9.88 gr/dl, a minimum value of 7.30 gr/dl and a maximum value of 10.90 gr/dl. The change in the average hemoglobin level after control was a mean value of 10.10 gr/dl, a minimum value of 7.50gr/dl and a maximum value of 11.00 gr/dl. While the results of the difference in the mean value of 0.21gr/dl, a minimum value of 0.00 gr/dl and a maximum value of 0.40 gr/dl

Table 5.5 *Frequency Distribution of Respondents' Hb in the control group At Caile Health Center*

Hemoglobin	Hb *Pre Test*		Hb *Post Test*	
	N	**%**	**N**	**%**
No Anemia	0	0	1	5.9
Mild Anemia	15	88.2	15	88.2
Moderate Anemia	2	11.8	1	5.9
Severe Anemia	0	0	0	0
Amount	17	100.0	17	100.0

Based on table 5.5 shows that from 17 respondents in the control group, as many as 0 people (0%) respondents with normal anemia/not anemia, mild anemia 15 people (88.2%), moderate anemia 2 people (11.8) and severe anemia 0 people (0%). And after being given intervention, respondents with normal anemia/not anemia were 1 person (5.9%), mild anemia 15 people (88.2%), moderate anemia 1 person (5.9) and severe anemia 0 people (0%).

3.4 Bivariate Variables

Table 5.4 *Analysis of Giving Red Dragon Fruit and Fe Tablets to Increase Hemoglobin Levels in Pregnant Women with Anemia at Caile Health Center, Bulukumba Regency*

		Paired Differences					T	df	Sig. (2-tailed
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval Of The Difference				
					Lower	Upper			
Rerata Kadar Hemoglobin	Kadar Hb Pre intervensi Kadar Hb post intervensi	.93529	.43866	.10639	1.16083	.70975	8.791	16	.000
	Kadar Hb pre kontrol Kadar Hb post kontrol	.21176	.09275	.02250	.25945	.16408	9.414	16	.000

Table 5.4 shows that the hemoglobin levels in the intervention group before and after consuming Fe tablets with red dragon fruit obtained Sig. results (2-tailed) with a value of p = 0.000 <0.05, while hemoglobin levels in the control group before and after consuming Fe tablets obtained Sig. results (2-tailed) with a value of p = 0.000 <0.05.

4. DISCUSSION

The results of this study showed that hemoglobin levels in the intervention group before and after consuming Fe tablets with red dragon fruit obtained Sig. results (2-tailed) with a value of p = 0.000 <0.05, while the hemoglobin levels in the control group before and after consuming Fe tablets obtained Sig. results (2-tailed) with a value of p = 0.000 <0.05. So it can be concluded that there is The effect of giving Fe tablets with and without red dragon fruit on increasing hemoglobin levels in pregnant women in the Caile Health Center work area . Pregnant women need a lot of additional food including protein, vitamin C and iron compared to ordinary women. If pregnant women are malnourished, especially iron and folic acid, iron deficiency anemia can occur because during pregnancy the need for nutrients increases and there are also changes in the blood and bone marrow. In addition, the need for nutrients during pregnancy is needed for the growth of the fetus, placenta and other tissues (Eka Bintari C, 2021)

This study is in line with the study conducted by Rifka Faradiba (2023) entitled The Effect of Giving Red Dragon Fruit to Pregnant Women on Increasing Hemoglobin in the Work Area of the Sambau Health Center UPT, Batam City 2023. Where the results of the study

showed that there was an effect of giving dragon fruit to pregnant women on increasing Hemoglobin. Dragon fruit can be used as an alternative to increase hemoglobin levels in pregnant women without any side effects. The increase and decrease in hemoglobin levels after giving dragon fruit are also influenced by the nutrition consumed by pregnant women, physical activity and the pregnant woman's rest patterns. The difference in the increase in hemoglobin levels in pregnant women before and after consuming dragon fruit is caused by insufficient nutritional intake, increased nutrient loss, and increased nutritional needs of mothers during pregnancy (Willy Astriana, et al. 2023)

In addition to consuming red dragon fruit which can be an alternative to increase hemoglobin levels, consuming Ambon bananas can also be used as another alternative to increase hemoglobin levels, because Ambon bananas contain iron and vitamin C which can make the absorption of iron in Fe tablets consumed by pregnant women more effective. This is in line with research conducted by Fitriani (2023) entitled "Comparison of the Effect of Giving Fe Tablets with Ambon Bananas and That Without Ambon Bananas on Hemoglobin Levels in Pregnant Women" where the results of the study showed that there was a significant difference in average between before and after giving Ambon bananas. In other words, consuming Ambon bananas accelerates the increase in Hb levels. Of course, supported by the provision of Fe Tablets. This is considered an effort that can be made to improve the condition of anemia that often occurs in pregnant women by increasing hemoglobin levels through nutritional intake.

The need to consume Fe tablets regularly and consume foods with balanced nutrition and foods high in iron and vitamin C, especially green vegetables and fruits such as dragon fruit. Dragon fruit can be consumed directly or through dragon fruit processing such as juice. Consuming dragon fruit can help the absorption of iron in Fe tablets faster which can increase the amount of iron in the blood (Suhartini, 2021). This study is in line with the study conducted by Rifka Faradiba (2023) entitled The Effect of Giving Red Dragon Fruit to Pregnant Women on Increasing Hemoglobin in the Work Area of the Sambau Health Center UPT, Batam City 2023. The results of the study showed that there was an effect of giving dragon fruit to pregnant women on increasing hemoglobin. This study is in line with the study conducted by Sherllia Sofyana (2022) entitled "The Effect of Combination of Super Red Dragon Fruit Extract (Hylocereus Costaricensis) + Fe Tablets on Increasing Hemoglobin Levels in Pregnant Women in Trimester III with Anemia" where this study found that there was an effect of the combination of super red dragon fruit extract + Fe tablets on increasing hemoglobin levels.

Researchers assume that there is a significant difference in Hemoglobin levels between before and after treatment in the intervention group and the control group. This happens because pregnant women routinely consume red dragon fruit with Fe tablets every day for 14 days. Likewise, in the control group, where pregnant women consume Fe tablets also experience an increase in hemoglobin levels, but in the intervention group the increase in hemoglobin levels is greater than the control group. Red dragon fruit can provide very good benefits for pregnant women and those with anemia. So according to researchers, anemia can be prevented from the beginning for pregnant women, namely from the pregnancy program to pregnancy by consuming red dragon fruit.

5. CONCLUSION

Based on the research results, it can be concluded that there is a difference in hemoglobin levels between the group that consumed Fe tablets with red dragon fruit and the group that only consumed Fe tablets on increasing hemoglobin levels in pregnant women in the Caile Health Center work area.

6. REFERENCE

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