

# The Effectiveness of Dragon Fruit Consumption For Increasing Haemoglobin Levels In Pregnancy Women With Light Anemia Symptoms

Miratu Megasari<sup>1</sup>, Risa Pitriani<sup>2</sup>

<sup>1</sup>Program Studi DIII Kebidanan

<sup>2</sup>STIKes Hang Tuah, Jl. Mustafa Sari no 05, Pekanbaru

---

**ARTICLE INFO**

---

**ABSTRACT****Keywords:**

Anemia,  
Dragon Fruit Consumption,  
Pramuka primary clinic

Anemia in pregnant women often occurs due to changes in the cardiovascular system that cause haemodilution, resulting in reduced oxygen levels in the blood. A solution to prevent anemia in pregnant women is to consume fruits that contain high iron and vitamin C such as dragon fruit which is needed to synthesize haemoglobin. From a preliminary study at the Pramuka Primary clinic, 8 out of 15 pregnant women had Hb levels <11.5 g/dl. Based on the author's experience, there are still pregnant women who do not consume blood-boosting tablets because the side effects of these tablets causing nausea, black stools. The population in this study were all pregnant women who were recorded at the Pratama Primary Clinic. The sample in this study was pregnant women in the first trimester who experienced anemia. The sampling technique used is accidental sampling. The method used in this study is a quasi-experimental. The type of design in this study was in the form of a non-equivalent design (pretest and post-test). The results of this study showed that the average hemoglobin level of pregnant women before consuming dragon fruit was 9.17 gr%, while the average hemoglobin level of pregnant women after consuming dragon fruits was 10.15gr%. The results of the statistical test value of 0.001 means that there is a significant difference between Hb levels before and after consuming dragon fruits.

---

**E-mail:**  
[ratubaik@gmail.com](mailto:ratubaik@gmail.com)

---

Copyright © 2021 Science Midwifery.

## 1. Introduction

Pregnancy is a natural process. The changes that occur in women during normal pregnancy are physiological, not pathological <sup>(1)</sup>. Pregnancy is a period that is vulnerable to all kinds of stress which can result in physiological changes and changes in the cardiovascular system. Changes in the cardiovascular system, namely an increase in the volume of blood plasma so that it is more than the volume of red blood cells. Therefore, a state of hemodilution occurs with a marked decrease in the hemoglobin level. This condition is called physiological anemia in pregnancy. <sup>(2)</sup> Anemia is a disease characterized by a lack of red blood cells in the blood. Lack of hemoglobin in the blood can cause more serious complications for the mother both in pregnancy, childbirth and the puerperium. Lack of oxygen in the uterus will cause the uterine muscles not to contract adequately so that uterine atony can arise which results in bleeding <sup>(3)</sup>. Anemia is one of the most common complications associated with pregnancy. Even severe anemia has adverse effects on the mother and fetus. As many as 75% of the most common anemia during pregnancy is iron deficiency anemia <sup>(5)</sup>.

Globally, the prevalence of anemia in pregnant women worldwide is 41.8 <sup>(6)</sup>. The prevalence of anemia in pregnant women in Indonesia based on the 2018 Basic Health Research (Riskesdas) shows that the proportion of anemia in pregnant women from 2013 to 2018 has increased by 11.8%, in 2013 the proportion is 37.1% and in 2018 the proportion is 48.9%. In Indonesia, anemia is one of the main health issues. <sup>(7)</sup>.

According to the 2016 Performance Accountability report in Riau Province, the incidence of anemia in pregnant women is still high at 37.1% <sup>(8)</sup>. Based on data from the Pekanbaru City Health Office in 2017, the prevalence of anemia in pregnant women was 8.1%, but in 2018 the prevalence of anemia in pregnant women increased by 11.2%, where the incidence of anemia in pregnant women increased <sup>(9)</sup>.

Reducing the incidence of anemia in pregnant women is also one of the responsibilities of health workers, one of which is a midwife. Midwives play a role in preventing anemia in pregnant women by giving a minimum of 90 tablets of Fe during pregnancy to overcome complications during pregnancy (7). Although the government program in an effort to overcome anemia in pregnant women by giving 90 tablets of Fe tablets during pregnancy has been running, the incidence of anemia in pregnant women still occurs. This is caused by various factors including the lack of iron intake from food and the wrong way of taking Fe tablets, where the mother does not take Fe tablets every day, taking Fe tablets together with coffee, and milk as well as side effects of Fe tablets that the mother does not like, including nausea, vomiting and discolored bowel movements<sup>(10)</sup>.

Seeing the cause of anemia in pregnant women is the intervention of iron absorption through supplements and food. Based on the results of research (5) states that one alternative that can be done to increase the amount of iron in the blood is by consuming fruits that contain high iron and vitamin C. One of the fruits that contain high levels of iron and vitamin C is dragon fruit which contains 0.16-0.20 mg of iron and vitamin B1, vitamin B2 and vitamin C (4).

Based on research journals, it is stated that dragon fruit contains iron so that there is a change in hemoglobin levels in pregnant women after consuming dragon fruit juice. From 34 anemic pregnant women with a sample of 18 people, it is known that the average value of hemoglobin levels before giving dragon fruit juice is 9.7 g/dl and the average value of hemoglobin levels on day 15 of giving dragon fruit juice is 11.5 g/dl so there are the effect of giving dragon fruit juice on increasing Hb levels in pregnant women (value 0.00 <0.05 (11). In addition, based on research journals it is stated that red dragon fruit juice is effective for increasing hemoglobin levels and erythrocyte levels in pregnant women because dragon fruit rich in iron as the main constituent of red blood cells (2)

Preliminary study that was conducted at the Pratama Scout Clinic for 1 month ago, of 15 pregnant women who had an examination at the clinic, 5 pregnant women in the first trimester (33%), 6 pregnant women in the second trimester (39.6%), 4 pregnant women Third trimester (26.4%) had normal Hb levels (11-12 g/dl). And there were 4 pregnant women (26.4%) with Hb levels <11gr/dl and complained of side effects of taking Fe tablets. So from the data above, the authors are interested in conducting research on the effectiveness of dragon fruit consumption on increasing hemoglobin levels of pregnant women with mild anemia in pratama scout clinics.

## 2. Method

This study uses a quantitative approach, the method used in this study is a quasi-experimental (7). This study was to see whether there was a change in hemoglobin levels before and after administration of dragon fruit. The population in this study were all pregnant women who were recorded at Pratama Pramuka Clinic, while the sample in this study were pregnant women who were willing to consume 100 grams of dragon fruit every day for 14 days. The data analysis used was bivariate with dependent T test. This study uses a value of 0.05 or 5% and the confidence level of this study is 95%.

## 3. Results and Discussion

### 3.1 Research Result

#### a. Univariat Analysis

**Table 1**  
Frequency Distribution of HB Levels in Pregnant Women with Mild Anemia Before And After Giving Dragon Fruit at The Pratama Pramuka Clinic

Variabel	n	%	Before		
			Mean	Min	Max
Dragon fruit therapy	30	100	9.17	7	10
			After		
Dragon fruit therapy	30	100	10.15	8	11

Table 1 above shows that the highest hemoglobin level of pregnant women before being given dragon fruit is 10 g%. Meanwhile, the highest hemoglobin level of pregnant women after being given dragon fruit was 11 g%

#### b. Bivariat Analysis

**Tabel 2**

Frequency Distribution of HB Levels in Pregnant Women with Mild Anemia Before And After Giving Dragon Fruit At The Pratama Pramuka Clinic

Variabel	Mean	SD	SE	P Value	N
Kadar Hb					
Before	9.17	0.834	0.152	0.001	30
After	10.15	0.800	0.146		

Table 2 above shows that the average hemoglobin level of pregnant women before being given dragon fruit is 9.17 gr% with a standard deviation of 0.83gr%. While the average hemoglobin level of pregnant women after being given dragon fruit is 10.15gr% with a standard deviation of 0.800 gr%. It can be seen that the mean difference before and after giving dragon fruit is -0.983 with a standard deviation of 0.278. The results of the statistical test value of 0.001 means that there is a significant difference between Hb levels before and after being given dragon fruit.

### c. Discussion

Consumption of dragon fruit eaten in the morning for 14 days can help increase hemoglobin levels because dragon fruit contains iron minerals and B complex vitamins that play an important role in the formation of hemoglobin and red blood cells. This study was conducted on 30 pregnant women with measurements of 2x Hb levels, namely before and after consuming dragon fruit. After doing the research on the effectiveness of dragon fruit consumption on increasing hemoglobin levels in pregnant women with mild anemia, it was carried out with a dependent T test where the p-value < (0.001), meaning that there was a significant difference between the Hb levels of pregnant women before and after given dragon fruit at the Pramuka Primary Clinic, Pekanbaru City.

This is in accordance with research <sup>(3)</sup> which says consuming 500 grams of dragon fruit for 14 days on a regular basis will help increase hemoglobin levels in the blood, this is because 100 grams of dragon fruit contains 0.16 mg of iron, iron needs for mothers pregnant per day by 0.8 mg. This iron will be converted into red blood cells, making it useful for pregnant women who are prone to anemia. As the literature also says that dragon fruit contains high amounts of iron and vitamin C which helps increase the amount of hemoglobin substantially during pregnancy<sup>(3)</sup>. According to research <sup>(4)</sup> states ` that there is an effect of consuming dragon fruit on increasing hemoglobin levels of pregnant women. In pregnant women the hemoglobin level before administration of dragon fruit juice was 9,761 while the average value of hemoglobin levels after administration of dragon fruit juice was 11,583. So that consuming dragon fruit can be used as an alternative fruit of choice to help pregnant women who experience anemia increase hemoglobin levels without any side effects. To get dragon fruit is also quite easy at an economical price. Besides being able to help increase hemoglobin levels, dragon fruit contains high vitamin C, thereby accelerating the absorption of blood-added supplements (Fe) consumed by pregnant women during pregnancy.

Meanwhile, other journals <sup>(11)</sup> say that consuming dragon fruit can increase hemoglobin levels. The average result of hemoglobin before being given dragon fruit was mild anemia, but after being given dragon fruit or dragon fruit juice the average hemoglobin increased

The results of another study on giving dragon fruit juice to postpartum women <sup>(12)</sup> showed that there was an effect or effectiveness before and after administration of dragon fruit juice on increasing hemoglobin levels in postpartum women in the UPT area of Kereng Bangkirai Health Center, Palangka Raya City.

This research is in line with the research conducted by <sup>(11)</sup> with the title The Effect of Dragon Fruit Juice on Increased Hemoglobin Levels of Pregnant Women in the Third Trimester. That the effect of giving dragon fruit juice on increasing hemoglobin levels in pregnant women by Wilcoxon statistical test, with p value <0.05 (0.002). It can be concluded that there is an effect of giving dragon fruit juice to increase hemoglobin levels in pregnant women.

## 4. Conclusion

There is an effectiveness of dragon fruit consumption for increasing hb levels in light anemic pregnant women with p-value < (0.001).

## References

Fadlun, & Feryanto, A. (2012). Asuhan Kebidanan Patologis. In Salemba Medika.

- Nugraheny, E. (2010). Asuhan Kebidanan Patologi. In Pustaka Rihama.
- Scarlet, D. (2013). No Title No Title. *Journal of Chemical Information and Modeling*, 53(9), 1689–1699. <https://doi.org/10.1017/CBO9781107415324.004>
- Faridah. (2015). Analisis Faktor Yang Mempengaruhi Tingkatan Anemia Pada Ibu Hamil Anemia di Puskesmas Sentolo II Kulon Progo.
- Purwandari, A., Lumy, F., & Polak, F. (2016). Faktor-Faktor Yang Berhubungan Dengan Kejadian Anemia Gizi Besi Pada Ibu Hamil. *Ijurnal Ilmiah Bidan*, 4(1), 62–68.
- Hammad, S. (2011). KHASIAT BUAH NAGA. In AQWAMEDIKA.
- Masturoh, I., & Anggita, N. (2018). Metodologi penelitian kesehatan. In Kemenkes RI.
- PUDIASTUTI, R. (2012). ASUHAN KEBIDANAN PADA IBU hamil normal dan patologi. In *Mulia Medika*.
- Widowati, R., Kundaryanti, R., & Lestari, P. P. (2019). Pengaruh Pemberian Sari Buah naga Terhadap Peningkatan Kadar Hemoglobin Ibu Hamil. *JURNAL Al-AZHAR INDONESIA SERI SAINS DAN TEKNOLOGI*, 5(2), 60. <https://doi.org/10.36722/sst.v5i2.351>
- WYLIE, L., & BRYCE, H. (2010). Manajemen Kebidanan Gangguan Medis Kehamilan & PERSALINAN. In EGC Medical Publisher.
- Wiulin Setiowati dkk (2018) Pengaruh Sari Buah naga Terhadap Peningkatan Kadar Hemoglobin Ibu Hamil trimester III. *Jurnal Darul Azhar Vol 6 No. 1 Hal 85 -91 .2018*
- Alfiah Rahmawati dkk (2019).. Pengaruh Konsumsi Buah naga (Phoenix Dactylife ra) Terhadap Kenaikan Kadar Hemoglobin : A Review . *Jurnal Kebidanan*