Available on: *http://nursingjurnal.respati.ac.id/index.php/JKRY/index*
Jurnal Keperawatan Respati Yogyakarta, 8(2), May 2021, 79 – 85

THE EFFECT OF 200 GRAM AND 500 GRAM RED DRAGON FRUIT JUICE (*Hylocereus polyhizus*) IN INCREASING OF HEMOGLOBIN LEVEL ADOLESCENT GRILS IN SMA NEGERI I BANGUNTAPAN BANTUL 2020

Melania Wahyuningsih[1*)], Nur Khasanah[2] & Christanty DN Widodo[3]
[1,2] Nursing Study Program, Faculty of Health Sciences, Respati University of Yogyakarta
[3]Student of Nursing Study Program, Faculty of Health Sciences, Respati University of Yogyakarta

Abstract

Teenage girls are prone to suffer from anemia because of a lot of blood loss during menstruation. Iron deficiency can cause them to be weak, and make them difficult to concentrate, because hemoglobin cannot carry enough protein and oxygen. Dragon fruit contains a lot of iron (Fe) to form red blood cells, and vitamin C can accelerate the absorption of iron for the body. To determine the effect of giving red dragon fruit juice (*Hylocereus Polyrhizus*) on the increase of hemoglobin in the post-menstrual adolescent girls at SMA Negeri 1 Banguntapan. The research design was a quasy experiment using *pre-* and *post-test nonequivalent control group design*. The study population consisted of 54 people. The study sample comprised 18 people consisting of 9 control groups and 9 intervention groups. Sampling was conducted with *purposive sampling*. The data collected were the hemoglobin levels of Grade XI of Social Science students at SMAN 1 Banguntapan, Bantul. Dragon fruit juice 200 grams is effective for increasing hemoglobin levels adolecent girls in SMA Negeri I Banguntapan Bantul p value 0.011 (p value <α (0.05). Dragon fruit juice 500 gram is effective for increasing hemoglobin level adolecent girls in SMA Negeri I Banguntapan Bantul p value 0.009 (pvalue <α (0.05). There was no significant difference on the dragon fruit juice 200 gram and 500 gram in increasing hemoglobin level adolecent girls in SMA Negerei I Banguntapan Bantul p value 0.280 (P value > 0.05)

Keywords: *Dragon Fruit Juice; Hemoglobin Levels; Adolescent Girls*

Article info: *Sending on April 29, 2021; Revision on June 03, 2021; Accepted on June 07, 2021*

---

*) *Corresponding author:*
Email: melania@respati.ac.id

1. Introduction

Adolescents are a period of physical, cognitive, and psychosocial growth. The nutritional needs of adolescents are greater during adolescence, one of the nutrients needed by adolescent girls aged 15-18 years is iron because iron is one of the most important components for muscle and blood. Iron needs14.8 mg / day to cover blood loss related to menstruation. If adolescents are deficient in iron nutrition it can result weakness, difficult to concentrate, because hemoglobin cannot carry enough protein and oxygen to the muscles and vital parts of the brain. The prevalence of anemia is still a big problem for Asian public health. Anemia in Indonesia is in the 5th place with the highest number of anemia in women of childbearing

Based on the DIY Health Office with a target of 1500 young women in 5 districts and cities, during 2018 anemia in young women increased by 46%. The prevalence of iron nutrition anemia among adolescent girls in the Special Region of Yogyakarta (DIY) aged 12-19 years is (36%) which is spread across all districts including Sleman (18.4%), Gunung Kidul. Yogyakarta City (35.2%), Bantul (54.8%), Kulonprogo (73.8%). Bantul Regency is in the second highest rank of anemia in adolescents. Based on the results of a preliminary study conducted by researchers on SMA Negeri 1 Banguntapan District, Banguntapan, Bantul Yogyakarta, the creening results show that hemoglobin levels in 8 out of 10 adolescent girls have low hemoglobin levels, an average of below 12 g / dl.

Red dragon fruit contains a lot of iron. The nutritional content in red dragon fruit is Water, Protein, Fat, Carbohydrate, Fiber, Calcium 6-10 mg / 100g, Phosphorus, Fe (iron) 0.55 / 100g which will be processed by the body to form red blood cells, Vitamin C is nutrients that can accelerate the absorption of iron for the body to help increase hemoglobin levels in the body of vitamins A, E, B1, B2, B3.

2. Methode

This research is a quasy experimental study using pre and post test nonequivalent control group design. The intervention group was given dragon fruit juice for 3 days before and after being given 200 grams of fruit juice and 500 grams of fruit juice haemoglobin (Hb) levels were checked. The sampling method of this research uses purposive sampling method. The population in the study was 54 female students majoring in XI IPS. The research sample was 18 people. This analysis was used to determine the effect of red dragon fruit juice on hemoglobin levels. The data obtained were processed by normality test with Shapiro Wilk. Data analysis with Paired T-Test this test is used to test the mean of 2 measurement results in the same group (for example, the difference in the mean pretest and posttest). The researcher used the mean difference test for 2 groups by using the Independent T-test for the mean of 2 independent groups (2 different groups).

3. Result

Characteristics of Respondents

Based on the table above, it is known that the duration of menstruation in the intervention group 200 grams > 7 days was 4 people (44.4%). For the intervention group > 7 days as many as 3 people (33.4%). In the table of eating habits in the control group, it was found that students who ate < 3 times a day were 2 people (22.2%) and in the intervention group 500 grams of students who ate <3 times a day were 1 person (11.1%). In the table of dietary habits for the control group, there were 8 people (88.9%) who did not do a diet.

Based on table 2 it can be interpreted that the average hemoglobin level of the 200 g group before consuming dragon fruit juice is 10,556, a maximum of 11.4 and a minimum of 9.0. The average hemoglobin level after consuming dragon fruit juice was 10,889, a maximum of 11.9 and a minimum of 9.1 with a mean difference of -3333.

The results of research on the respondents of this study, there were 4 students who had low hemoglobin or anemia with menstrual duration> 7 days. The number of respondents in the study was 1 person who had a history of anemia and there were students who had never consumed dragon fruit juice, so that the results of checking hemoglobin levels in students before being given dragon fruit juice at SMA Negeri 1 Banguntapan Bantul district in 2020 are in table 2 and table 3 above.

According to WHO, the limit value of hemoglobin (Hb) which is said to be iron nutritional anemia for adolescent women is <12 gr / dl with a serum iron value <50 mg / ml and a ferritin value <12 mg / ml. Anemia experienced by students is considered very disturbing to daily activities, especially during teaching and learning activities, such as being slower in receiving lessons, sometimes complaining of headaches. Anemia is a condition where erythrocytes or Hb levels in the blood are less than normal (<12 g%). This causes a decrease in the ability of Hb to carry oxygen throughout the body. Teenage girls are more at risk of developing anemia than teenage boys because women have menstruation every month so that a lot of blood loss results in a lack of iron in the blood.

Table 1. The frequency distribution of the characteristics of young women in SMA Negeri 1 Banguntapan, Bantul Regency 2020.

Characteristics of Respondents	Intervention group 200 gr		Intervention group 500 gram	
	Frequency *(f)*	Procentage (%)	*Frquency (f)*	Procentage (%)
Length of menstruation				
4-7 days	5	55.5	6	66.7
7>7 days	4	44.4	3	33.3
Total	9	100.0	9	100.0
Eating Habit				
3 x a day	7	77.8	8	88.9
<3 x a day	2	22.2	1	11.1
Total	9	100.0	9	100.0
Diet Habit				
Not Diet	8	88.9	9	100.0
Diet	1	11.1	0	00.0
Total	9	100.0	9	100.0

Table 2. Hemoglobin levels before and after being given 200gr red dragon fruit juice to young girls in July 2020.

Intervention 200 gr	Σ	Hemoglobin level (g/dl)				
		Min	Max	Mean	Mean difference	SD
Pretest	9	9.0	11.4	10.556	-.3333	8.293
Posttest	9	9.1	11.9	10.889		8.824

The length of menstruation will cause the respondent to lack a lot of blood and iron in the blood. Approximately 4% of the iron in the body is present as myoglobin and iron compounds as oxidative enzymes such as cytochromes and flavoproteins. Although the number is very small, it has a very important role. Myoglobin participates in oxygen transport through membrane cells into muscle cells. Cytochromes, flavoproteins, and other iron-containing mitochondrial compounds play an important role in the oxidation process to produce Adenosine Tri Phosphate (ATP) which is a high-energy molecule. If the body has an iron nutrition anemia, the ability to work there will be decrease. The impact of anemia in school children can increase absences and decreasing learning achievement. Among the respondents in this study, there were 7 students who had low Hb or anemia with menstrual duration > 7 days

Based on daily eating habits, it was found that respondents who had moderate anemia were all respondents who ate 3 times a day. A diet is a menu of food that a person has on a daily basis. A healthy diet is included in choosing a balanced diet. Sources of iron come from animal foods, other sources come from grains but their content is small so they are neglected. Respondents who do diet experience iron deficiency because the amount of food consumed is limited, respondents who diet do not pay attention to the nutrients consumed but only limit the number of calories that enter the body. Sources of calories that enter the body come from carbohydrates, vegetable protein and a little fat. Iron deficiency can occur due to the lack of variation in the food that is entered, causing moderate anemia.

In this study, the researchers gave red dragon fruit juice that had been weighed using a weighing scale with a dose of 100 gr / person pulp. Dragon fruit juice is given once a day for 2 days and given in the morning with a total fruit dose of 200 gr. Researchers gave a dose of dragon fruit that had been blended as much as 200 ml, the researchers controlled the amount of dragon fruit juice consumed for 2 days, so it is expected that there are no respondents who are lacking in consuming dragon fruit juice, but researchers cannot control the food consumed by respondents. After consuming dragon fruit juice for 2 consecutive days on day 3 the respondents were checked the hemoglobin level. The hemoglobin results showed an increase in hemoglobin levels in the consumption of 200gr juice by 0.333 from 10,556 to 10,889, a maximum of 11.9 and a minimum of 9.1

The results of this study are the same as the results of research from Khalida Thamrin, et al. (2018) giving red dragon fruit juice on hemoglobin levels in adolescent girls, with a p value = 0.101 <0.05, meaning that there is a significant difference between pretest and posttest hemoglobin levels in the group. control. Then this is also the same as Erdhian Yudha and Pratama's research, (2019), with the results that there is a difference in the average pre-test and post-test hemoglobin levels of the experimental group (giving red dragon fruit juice) to female workers (ρ = 0.009).

Hemoglobin levels can be influenced by the food or drink consumed by young women such as red dragon fruit juice, regarding the iron levels in red dragon fruit (Hylocereus polyhizus), the iron (Fe) levels are better and more than the fruits that are found. others, besides dragon fruit has several vitamins, namely: vitatamin E, vitamin B1, B2, B6, vitamin C, calcium, vitamin A and many others in red dragon fruit. Based on the results of the determination of dragon fruit nutritional levels, it can be said that by consuming 100 grams of dragon fruit, it can increase iron levels in the blood, one of which is to increase Hb levels in the blood. Iron in dragon fruit can also help in the formation of hemoglobin to carry protein and oxygen throughout the body, vitamin A can help hemoglobin to bind oxygen. Fe can help the production of new red blood cells to increase the Hb content in the blood (Dira, et al., 2014).

According to Sutomo Budi and Kurnia Dian (2016), iron in dragon fruit is very good for increasing blood (hemoglobin) because it is rich in iron and prevents anemia. Iron is great for increasing hemoglobin levels in people with anemia. Dragon fruit also helps in the production of red blood cells which help in proper oxygenation of vital organs, and is very good if consumed 2 times a day for people with anemia or low hemoglobin. This can be proven in research that has been conducted by researchers by giving red dragon fruit juice to the hemoglobin levels of adolescent girls.

Hemoglobin levels before and after consuming 500gr of red dragon fruit juice in the intervention group

Based on table 3 it can be interpreted that the average hemoglobin level of the intervention group of 500 grams before consuming dragon fruit juice is 10,744, the maximum value is 11.4 and a minimum of 10.0. The average hemoglobin level after consuming red dragon fruit juice was 11,244, a maximum of 11.6 and a minimum of 10.5 with a mean difference of -.5000.

According to (Sugeng, 2018), normal hemoglobin levels are usually more than 12.0 grams / 100 ml in women. However, according to Waryana (2010) the category of severity of anemia, which is sourced from WHO is as follows: Hb levels 12 g% are not anemia, Hb levels 9-10 g% are mild anemia, Hb levels 7-8 g% moderate anemia, Hb levels < 7 gr% severe anemia. Anemia experienced by students is considered very disturbing to daily activities, especially during teaching and learning activities, such as being slower in receiving lessons, sometimes complaining of headaches. Anemia is a condition where erythrocytes or Hb levels in the blood are less than normal (<12 g%). This causes a decrease in the ability of Hb to carry oxygen throughout the body.

Teenage girls are more at risk of developing anemia than teenage boys because women have menstruation every month so that a lot of blood loss results in a lack of iron in the blood.

The length of menstruation will cause the respondent to lack a lot of blood and iron in the blood. Approximately 4% of the iron in the body is present as myoglobin and iron compounds as oxidative enzymes such as cytochromes and flavoproteins. Although the number is very small, it has a very important role. Myoglobin participates in oxygen transport through membrane cells into muscle cells. Cytochromes, flavoproteins, and other iron-containing mitochondrial compounds play an important role in the oxidation process to produce Adenosine Tri Phosphate (ATP) which is a high-energy molecule. So that if the body has iron nutrition anemia, there is a decrease in the ability to work. In school children the impact on increasing school absences and decreasing learning achievement. Based on daily eating habits - A diet is a daily diet by a person. A healthy diet is included in choosing a balanced diet. Sources of iron are food sources from animal sources, other sources also come from plants, seeds but their content is small so they are usually ignored, Respondents who are on a diet experience iron deficiency because the amount of food consumed is also limited, respondents who diet do not pay attention to substances nutrition consumed but only limiting the number of calories that enter the body and most of the calories that enter the body come from carbohydrates, vegetable protein and a little fat. Iron deficiency due to a lack of attention to the variety of foods that enter causes those who are on a diet to experience moderate anemia

Tabel 3. Hemoglobin levels in the intervention group before and after being given 500 grams of red dragon fruit juice to young girls in SMA Negeri I Banguntapan, Kabupaten Bantul on July 2020

Intervention Group 500 gr	Σ	Hemoglobin level (g/dl)				
		Min	Max	Mean	Mean difference	SD
Pretest	9	10.0	11.4	10.744	-.5000	5.480
Posttest	9	10.5	11.6	11.244		3.609

Dragon fruit the size of manggo gedong is bright red, skinned like dragon scales, and has a sweet, fresh and slightly sour taste. This fruit is classified into 4 types, namely white flesh dragon fruit [Hylocereu sundtus], red flesh dragon fruit [Hylocereus polyhizus], super red flesh dragon fruit [Hylocereus costraricensis], and white flesh yellow skin dragon fruit [Slenicerius megalanthus] (Hakimah Ainun Indy, 2011) but only [Hylocereus polyhizus] used it. To be given to respondents with the aim of meeting the nutritional needs of adolescent girls.

In this study, the researchers gave red dragon fruit juice that had been weighed using a weighing scale with a dose of 100 gr / person pulp. Dragon fruit juice was given 2x a day for 3 days and was given in the morning and evening (in the control group) with a total dose of 500 grams of fruit because the Hb level was checked on the third day after 20 minutes of giving dragon fruit juice, for the dose of juice. has been mixed given as much as 200 ml per day. Researchers gave a dose to control the amount of dragon fruit juice consumed for 3 days so that it is hoped that no respondent is lacking in consuming dragon fruit juice, but researchers cannot control food consumption after the researchers return home. After collecting the data on day three it showed that the research respondents had experienced an increase in the average Hb level of the intervention group after consuming dragon fruit juice was 11,244, a maximum of 11.6 and a minimum of 10.5.

This can be said to be the same as the results of research from Munadira Usman, et al. (2019), in giving red dragon fruit juice to female students at SMAN 4 Pangkep, it shows that in the intervention group (giving dragon fruit juice) the value of p = 0,000, where p <α (0.05). It can be concluded that there is an effect between the provision of dragon fruit juice on the increase in hemoglobin levels in adolescent girls. Research according to Khalida Thamrin, et al (2018), in the intervention group, it was found that an average increase in hemoglobin levels was 1,156 greater than in the control group, which was 1,100. From the statistical test using the independent sample t test, it was obtained p = 0.893> (0.05), which means that there was an influence in the provision of red dragon fruit juice to young women. Erdhian Yudha and Pratama's research, (2019), with the results that there is a difference in the average pre-test and post-test hemoglobin levels of the experimental group (giving red dragon fruit juice) to female workers (ρ = 0.009).

This can also be influenced by the food or drink consumed by young women such as red dragon fruit juice, regarding the iron levels in red dragon fruit (Hylocereus polyhizus), the iron (Fe) levels are better and more than fruits. others, besides dragon fruit has several vitamins, namely: vitatamin E, vitamin B1, B2, B6, vitamin C, calcium, vitamin A and many others in red dragon fruit. Based on the results of the determination of dragon fruit nutritional levels, it can be said that by consuming 100 grams of dragon fruit, it can increase iron levels in the blood, one of which is to increase Hb levels in the blood.

According to Sutomo Budi and Kurnia Dian (2016), iron in dragon fruit is very good for increasing blood (hemoglobin); Rich in Iron and Prevents Anemia. Iron is great for increasing hemoglobin levels in people with anemia. Dragon fruit also helps in the

production of red blood cells which help in proper oxygenation of vital organs, and is very good if consumed 2 times a day for people with anemia or low hemoglobin. This can be proven in research that has been conducted by researchers by giving red dragon fruit juice to the hemoglobin levels of adolescent girls.

Differences in hemoglobin levels before and after giving red dragon fruit juice 200gr and 500g

Based on the output samples test above, it is known that Sig. (2-tailed) is the probability value or the P value of the Paired T test, the results of the pretest and posttest of the control group are 0.011, the pretest and posttest results of the intervention group are 0.009 because the P value is <0.05. This means that there is a difference between before and after treatment in the two groups after treatment. Mean Paired Differences values are 0.3333 and 0.5000, this value shows the difference between the average pretest hemoglobin level results and the average posttest hemoglobin level results or 10.556-10.889 = -333 and 0.5671 to 0.0996 10.744-11.244 = -500 difference difference between 0.8394 and 0.1606 (95% Confidence Interval of the Difference Lower and Upper). So from the above explanation can determine the hypothesis that H0 is accepted. There is an effect of red dragon fruit juice on the hemoglobin level of female adolescents in SMA Negeri 1 Banguntapan, Banguntapan, Bantul, Yogyakarta Special Region.

Table 4. Paired Sample Test for differences in hemoglobin levels after and before being given red dragon fruit juice 200gr and 500gr for young girls

Group	Σ	Kadar Hemoglobin (g/dl)			
		Mean	Mean Difference	Sig. (2-tailed)	SD
Haemoglobin level Pretes-Postes (200gr Red dragon Juice)	9	10.556 - 10.889	-3333	.011	.3041
Haemoglobin level Pretest-Postest (500gr Red Dragon Juice)	9	10.744 - 11.244	-,5000	.009	.4416

Based on the output samples test above, it is known that Sig. (2-tailed) is the probability value or the P value of the Paired T test, the results of the pretest and posttest of the control group are 0.011, the pretest and posttest results of the intervention group are 0.009 because the P value is <0.05. This means that there is a difference between before and after treatment in the two groups after treatment. Mean Paired Differences values are 0.3333 and 0.5000, this value shows the difference between the average pretest hemoglobin level results and the average posttest hemoglobin level results or 10.556-10.889 = -333 and 0.5671 to 0.0996 10.744-11.244 = -500 difference difference between 0.8394 and 0.1606 (95% Confidence Interval of the Difference Lower and Upper). So from the above explanation can determine the hypothesis that H0 is accepted. There is an effect of red dragon fruit juice on the hemoglobin level of female adolescents in SMA Negeri 1 Banguntapan, Banguntapan, Bantul, Yogyakarta Special Region.

Based on table 2 it can be interpreted that the average hemoglobin level of the control group before consuming dragon fruit juice is 10,556, a maximum of 11.4 and a minimum of 9.0. The average hemoglobin level after consuming dragon fruit juice was 10,889, a maximum of 11.9 and a minimum of 9.1. Based on table 4.3 it can be interpreted that the average hemoglobin level of the intervention group before consuming dragon fruit juice is 10,744, a maximum of 11.4 and a minimum of 10.0. The average hemoglobin level after consuming red dragon fruit juice is 11,244, a maximum of 11.6 and a minimum of 10.5.

These results indicate that after consuming dragon fruit there is an increase in Hb levels but still below the normal Hb levels set for women, namely 12-15.6 gr / dl. This can also be influenced by the food or drink consumed by young women such as red dragon fruit juice, regarding the iron levels in red dragon fruit (Hylocereus polyhizus), the iron (Fe) levels are better and more than fruits. others, besides dragon fruit has several vitamins, namely: vitatamin E, vitamin B1, B2, B6, vitamin C, calcium, vitamin A and many others in red dragon fruit. Based on the results of the determination of dragon fruit nutritional levels, it can be said that by consuming 100 grams of dragon fruit, it can increase iron levels in the blood, one of which is to increase Hb levels in the blood. (Dira, et al., 2014).

There was a difference in hemoglobin levels due to the fact that in the control group there were 2 people who had a history of anemia, and the control group in this study was the comparison group from the intervention group, with the provision of dragon fruit juice with different amounts, namely in a day the control group only received juice. Dragon fruit 1x a day with the same dose of 200 ml with a period of 3 days of administration.

The results of the study according to Khalida Thamrin, et al (2018), in the intervention group, it was found that an average increase in hemoglobin levels was 1,156 greater than in the control group, which was 1,100. From the statistical test using the independent sample t test, it was obtained p = 0.893> (0.05), which means that there was an influence in the provision of red dragon fruit juice to young women. Erdhian Yudha and Pratama's research, (2019), with the results that

there is a difference in the average pre-test and post-test hemoglobin levels of the experimental group (giving red dragon fruit juice) to female workers (ρ = 0.009).

According to Sutomo Budi and Kurnia Dian (2016), iron in dragon fruit is very good for increasing blood (hemoglobin); Rich in Iron and Prevents Anemia or low hemoglobin. Iron is great for increasing hemoglobin levels in people with anemia or low hemoglobin. Dragon fruit also helps in the production of red blood cells which help in proper oxygenation of vital organs, and is very good if consumed 2 times a day for people with anemia or low hemoglobin. This can be proven in research that has been conducted by researchers by giving red dragon fruit juice to the hemoglobin levels of adolescent girls

Iron in dragon fruit can also help in the formation of hemoglobin to carry protein and oxygen throughout the body, vitamin A can help hemoglobin to bind oxygen. Meanwhile, Fe can help the production of new red blood cells to increase the hemoglobin content in the blood (Dira, et al., 2014).

In this study, dragon fruit had an influence on the control group and the intervention group because each group was given 200 ml of red dragon fruit juice. the control group was given red dragon fruit juice 1x a day for 3 days. And the intervention group was given dragon fruit juice 2x a day for 3 days.

According to research from Siti (2019), regarding the benefits of red dragon fruit (hylocereus polyrhizus) to increase hemoglobin levels, the average hemoglobin level in the treatment group increased by 1mg / dl while the control group was 1.02 mg / dl with a P value of 0.034 <alpha 0.05 so there was a difference. the significance of the mean hemoglobin level before and after giving 200ml for 3-7 days is useful for increasing Hemoglobin levels

Differences in hemoglobin levels after purchasing dragon fruit juice 200gr and 500gr for young girls.

The results of the Independent T-Test are based on a significance value (2-tailed) which measures the presence or absence of average differences in the tested subjects. Based on the output above, it shows that the two intervention groups are higher than the control group seen from an average of 10,889 to 11,244. Based on the Independent Samples Test output table in the Equal variances assumed section, the Sig. (2-tailed) of 0.280> 0.05, so that as the basis for decision making in the independent sample t test, namely the value of Sig. (2-tailed)> 0.05, there is no significant difference between subjects. The magnitude of the difference in the average or mean of the two groups is addressed in the Mean Difference column, which is -0.3556.

Tabel 5. Different test with Independent Sample T-Test differences in hemoglobin levels after giving 200gr and 500gr dragon fruit juice to adolescent girls.

Group	*Σ*	Hemoglobin level (g/dl)				
		Min	Max	Mean	Mean difference	Sig. (2-tailed)
Hemoglobin level post giving dragon juice 200gr	9	9.1	11.9	10.889	-0.3556	.280
Hemoglobin level post giving dragon juice 500gr	9	10.5	11.6	11.244		

The effect of giving red dragon fruit juice on hemoglobin levels in students before being given dragon fruit juice at SMA Negeri 1 Banguntapan Bantul district in 2020 based on table 4.5 the output above shows that the two intervention groups were higher than the control group seen from an average of 10,889 to 11,244. Based on the Independent Samples Test output table in the Equal variances assumed section, the Sig. (2-tailed) of 0.280> 0.05, so there is a difference in point scores between the control and intervention groups, so as the basis for decision making in the independent sample t test, namely the value of Sig. (2-tailed) <0.05 indicates no difference in mean between research subjects. It can be concluded that H0 is accepted and Ha is rejected. Thus it can be concluded that there is no significant difference (real). The magnitude of the difference in the mean or mean of the two groups is aimed at the Mean Difference column, which is -0.3556 because it is negative, it means that the control group has a lower mean than the intervention group. There was no difference in this study because the control group was also given 200 ml of red dragon fruit juice once a day for 3 days.

Hemoglobin results after consuming dragon fruit, there was an increase in Hb levels but still below the normal Hb levels set for women, namely 12-15.6 gr / dl. The results of the Paired Sample T Test showed that the Sig value. (2-tailed) is the probability value or the P value of the Paired T test, the results of the pretest and posttest of the control group are 0.011, the pretest and posttest results of the control group are 0.009. This means that there is a difference between before and after treatment in the two groups after treatment. Because the P value <0.05 (95% confidence), which means that there is no significant difference in the provision of dragon fruit to hemoglobin levels in post-menstrual adolescent girls at SMAN 1 Banguntapan, Bantul in 2020.

The results of this study are in accordance with the results of research conducted by Munadira Usman, Arman, Een Kurnaesih, (2019) The results of the paired test show that in the intervention group (giving dragon fruit juice) p = 0,000, where p <α (0.05). Whereas for the control group the results obtained were p = 0.204, where p> α (0.05) so that it can be said that there was no significant effect between the provision of nutritional education and an increase in hemoglobin, this could be stated that there was an effect of increasing hemoglobin levels in adolescent girls who had anemia at SMAN 4 Pangkep. Khalida Thamrin, et al (2018) showed that there was an effect but there was no significant difference in giving dragon fruit (Hylocereus polyrhizus) on the increase in hemoglobin levels in adolescent girls (p> 0.05). The results of this study can be concluded that dragon fruit is a fruit that is rich in nutrients, each content of dragon fruit has benefits for the body. Regarding iron levels in red dragon fruit (Hylocereus polyhizus), iron (Fe) levels are better and more than other fruits, besides dragon fruit has several vitamins, namely: vitatamin E, vitamins B1, B2, B6 , vitamin C, calcium, vitamin A and many others in red dragon fruit. Based on the results of the determination of dragon fruit nutritional levels, it can be said that by consuming 100 grams of dragon fruit, it can increase iron levels in the blood, one of which is to increase Hb levels in the blood.

The nutritional content in red dragon fruit is 90.20% water, 0.53% protein, 0.40% fat, 11.50% carbohydrates, 0.71% fiber, 6-10 mg / 100g calcium, 8.70% phosphorus, Fe (iron) 0.55 / 100g, Vitamin C 9.40%, Vitamin A, Vitamin E, Vitamin B1, Vitamin B2, Vitamin B3. Red dragon fruit is also very good for blood circulation and can treat anemia. Besides being consumed directly, dragon fruit can also be made into juice or other drink mixes. (Anggi Swastika, 2019)

4. Conclusion

Dragon fruit juice 200 grams is effective for increasing hemoglobin levels adolecent girls in SMA Negeri I Banguntapan Bantul p value 0.011 (p value <α (0.05). Dragon fruit juice 500 gram is effective for increasing hemoglobin level adolecent girls in SMA Negeri I Banguntapan Bantul p value 0.009 (pvalue <α (0.05). There was no significant difference on the dragon fruit juice 200 gram and 500 gram in increasing hemoglobin level adolecent girls in SMA Negerei I Banguntapan Bantul p value 0.280 (P value > 0.05)

5. Refferences

Dira, Deviarny Chris and Riona Wenny. (2014). Determination of iron (Fe) content in dragon fruit with super red (Hylocereus costricensis L.) and white (Hylocereus undatus L.) contents. Vol. 37. No. 3.

Finda, K Nisa (2019.) Effect of Red Dragon Fruit Juice (Hylocereus polyrhizus) on Blood Pressure. Vol. 3. No. 1.

Sutomo, Budi & Kurnia, Dian (2016.)378 recipes of herbal juices and concoctions. Jakarta: PT. Heirloom Friends.

Swastika, Anggi (2019) The book of the efficacy of fruit and vegetables has cut off all diseases. Yogyakarta: Shira Media.

Thamrin, Khalida., Budu., Werna Nontji., Suchi Avnalurini Shariff 1 (2018) Dragon fruit (Hylocereus polyrhizus) increases hemoglobin levels in young women. Vol. 1 No. 3.

Usman, Munadira..,Arman., Een, Kurnaesih. (2019) The Effect of Dragon Fruit Juice on the increase in hemoglobin in young women experiencing anemia at SMAN 4 Pangkep. Vol. 13 No. 6.

World Health Organization (2014) WHA Global Nutrition Targets 2025: Anaemia Policy Brief. Geneva: World Health Organization