

GIVING HYLOCEREUS POLYRHIZUS AND HONEY IN INCREASING HEMOGLOBIN LEVELS IN YOUNG WOMEN IN SMPN 7 OF GORONTALO CITY

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ABSTRACT

Iron is a mineral that is needed to form Red blood cells (haemoglobin) And also plays a role as a component to form mioglobin (protein that carries oxygen to the muscle), collagen (Protein found in bones, Cartilage and connective tissue) As well as enzymes. One alternative that can be done to increase iron levels in blood in the blood is to increase hylocereus polyrhizus. Hylocereus polyrhizus Contains iron which is useful for adding blood cells. The purpose of this study is Knowing the effectiveness of giving Hylocereus polyrhizus and honey Against increased levels haemoglobin in young women at SMPN 7 of Gorontalo city.

This research method includes in praeksperimen design with two-group pra-post test design. Where researcher involved two groups of young women, which was observed before the intervention of administration of Hylocereus polyrhizus and Hylocereus polyrhizus with honey. Furthermore, observed again After the two interventions are carried out. This research was conducted on July 12 until October 12, 2019.

Research results using t-test dependent. Show that result P - value is 0,000 Smaller than @=0,05, so it was concluded that Ho is rejected and Ha is accepted. So it is effective giving Hylocereus polyrhizusin increasing hemoglobin levels in young women in SMPN 7 of Gorotalocity. The conclusion from the study shows that there is a significant influence in Hylocereus polyrhizus and Hylocereus polyrhizus with honey against the increase in hemoglobin levels in young women in junior high school 7 of Gorontalocity.

Keywords: *Hylocereus polyrhizus, honey, Haemoglobin, young women*

INTRODUCTION

Iron is a mineral that is needed to form red blood cells (hemoglobin) and also acts as a component to form myoglobin (a protein that carries oxygen to muscles), collagen (a protein found in bones, cartilage, and connective tissue) and enzymes [14].

One alternative that can be done to increase iron levels in the blood is by consuming dragon fruit. Dragon fruit contains iron which is useful for adding blood cells, vitamin B1 which is useful for preventing fever in the body, vitamin B2

which is useful for increasing appetite, and vitamin B3 which is useful for reducing levels in the blood.

Adolescence is a critical stage of life, so the period is categorized as a vulnerable group, and has a high health risk. Most susceptible anemia occurs in young women this is because young women experience menstruation every month and are in their infancy. Anemia in adolescents can result in decreased reproductive health, impaired cognitive function, low academic ability, and decreased physical capacity

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[21].

The problem of anemia in general in women can be overcome by taking iron supplements. The other alternative is to provide pharmacological therapy from natural ingredients, one of which is honey, where honey contains important minerals such as calcium, phosphorus, potassium, sodium, iron, magnesium, and copper, which with these contents can make levels of hemoglobin increased (Islamiyah, et al, 2017).

The World Health Organization (WHO) states that anemia is the 10 biggest health problems in this modern century, where high-risk groups of anemia are women of childbearing age, pregnant women, school-age children, and teenagers. According to 2013 WHO data, the prevalence of anemia in the world ranges from 40-88%. The number of anemia young women (10-19 years) in Indonesia is 49.1% (Ministry of Health Republic of Indonesia, 2013; Choiriyah, 2015).

The health and nutrition situation of the 10-24 years age group in Indonesia is still concerning. Riskesdas 2013 data on the incidence of anemia in children aged 5-14 years was 26.4%, children aged 15 - 24 years amounted to 18.4%. Based on data from the Gorontalo Province Health Office in 2017, it was found that the number of anemic junior high school girls was, in Gorontalo Province, 269 people (3.8%) of the number of junior high school students in Gorontalo Province, Boalemo District, which were 89 people (5.9%) , then for Gorontalo City as many as 72 people (3.5%), Bone Bolango District as many as 58 people (4.9%), Pohuwato District as many as 46 people (4.6%), and then the next in North Gorontalo District as many as 4 people (0.4%), Gorontalo District was not found anemic young women [6].

Based on data from the Gorontalo City Health Office in 2017 there were data on the number of anemia adolescent girls

who visited each Puskesmas, and the highest number of anemia adolescent girls who visited were in the South Kota Puskesmas, as many as 7 people, then the next Dumbo Raya Health Center namely as many as 4 people, Duingingi Health Center totaling 1 person, as well as at Hulontalo Health Center totaling 1 person, then for the West City Health Center, Central City, East City, Pilolodaa Health Center, and Sipatana Health Center there were no teenage girls with anemia who visited [6].

Based on these data the Gorontalo City 7 Junior High School was chosen as the target of the study because it is a school in the working area of the South City Health Center, so that it is expected to represent the presence of students especially junior high school girls in Gorontalo City. Based on preliminary studies conducted by researchers in Gorontalo City 7 Public Middle School, it is known that the number of students in Gorontalo 7 Public Middle School is 166 people, with details of the number of class VII students of 56 people, class VIII of 55 people, class IX of 55 people. Based on interviews conducted with UKS officers of SMP Negeri 7 Gorontalo City, sick students entered UKS on average with complaints of dizziness and a pale looking face and complained of decreased concentration of learning.

Efforts have been made by schools to meet the needs of iron by providing counseling about nutrition and consuming foods that contain lots of vitamins and minerals so as to increase hemoglobin levels, but have not given satisfactory results. Based on the description above, the researchers are interested in conducting research with the title Granting *Hylocereus Polyrhizus* and Honey in increasing levels of hemoglobin in young women at SMPN 7 Gorontalo City. Formulation of the Problem Based on the above background, the formulation of the problem

raised in this study is "Is the provision of *Hylocereus Polyrhizus* and Honey effective in increasing levels of hemoglobin in young women at SMPN 7 Gorontalo City?"

Aim

1. General Purpose

Based on the above background, the formulation of the problem raised in this study is "Is the provision of *Hylocereus Polyrhizus* and Honey effective in increasing levels of hemoglobin in young women at SMPN 7 Gorontalo City?"

2. Special Purpose

a. General Purpose

Knowing the effectiveness of *Hylocereus Polyrhizus* and Honey administration on Increasing Hemoglobin Levels in Adolescent Girls in SMPN 7 Gorontalo City.

b. Special Purpose

- 1) To identify the administration of *hylocereus polyrhizus* to an increase in hemoglobin levels in adolescent girls at SMPN 7 Gorontalo City.
- 2) To identify the administration of *hylocereus polyrhizus* and honey to the increase in hemoglobin levels in young women at SMPN 7 Gorontalo City.
- 3) To analyze the effectiveness of *Hylocereus Polyrhizus* and honey on increasing levels of hemoglobin in adolescent girls at SMPN 7 Gorontalo City.

Benefits of Research

In this research, it is expected to provide the following benefits:

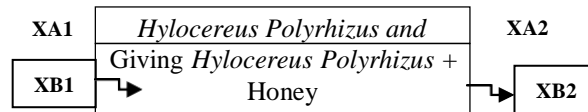
1. For Schools
 As a useful reading material for schools so that it can be implemented in dealing with young women with anemia.
2. For School girls
 As material knowledge so that one day find out about the dangers of anemia
3. For further researchers
 It is expected to be a reference to con-

duct further research in preventing anemia in adolescents.

METHOD

This study was included in the design of the experimental design (pre- experimental design) with two-group pre-post test design (pre-post test design in two groups) where researchers involved two groups of young women who were observed before the intervention given the administration of dragon fruit juice and dragon fruit juice added honey, then observed again after the two interventions. This study did not involve a control group due to time constraints.

The research design designs used are as follows:



The variables used in this study, namely the independent variable are the administration of *hylocereus polyrhizus* and the administration of *hylocereus polyrhizus* + honey while the dependent variable is the increase in hemoglobin levels.

The population in this study was all adolescent girls in Gorontalo City 7 Junior High School as many as 166 people.

The sample in this study were all adolescent girls, both class VII as many as 56 people, VIII as many as 55 people, and class IX as many as 55 people, both suffering from anemia or not. Based on sampling using a Non Random Sampling technique in the form of Purposive Sampling. Determination of the sample size uses inclusion and exclusion criteria.

RESULTS AND DISCUSSION

Results

a. Univariate Analysis

1. Age Characteristics of Respondent

Table 1. Age distribution of *Hylocereus Polyrhizus*, Respondents

Age	Frequency (People)	Percent
11 – 12	4	13,3

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13 – 15	26	86,7
Total	30	100

Source: Primary data, 2019

Based on table 1 shows that of the 30 respondents, the group giving the least amount of Hylocereus Polyrhizus was in the age range of 11-12 years, as many as 4 people with a percentage of 13.3%.

Table 2. Age distribution of Hylocereus Polyrhizus Respondents + Honey

Age	Frequency (People)	Percent
11 – 12	6	20
13 – 15	24	80
Total	30	100

Source: Primary data, 2019

Based on table 2, it shows that from 30 respondents, the group giving Hylocereus Polyrhizus + Honey paking was small in the age range of 11-12 years, as many as 6 people with a percentage of 20%.

2. Characteristics of the Menstrual Cycle

Table 3. Distribution of Hylocereus

Menstrual Cycle	Frequency (People)	Percent (%)
Normal	30	100
Abnormal	0	0
Total	30	100

Polyrhizus Respondents Menstrual Cycles

Source: Primary data, 2019

Table 3 shows that all respondents in the Hylocereus Polyrhizus group had a normal menstrual cycle (100%).

Table 4.

Distribution of Hylocereus Polyrhizus + Madu Respondents Menstrual Cycles

Menstrual Cycle	Frequency (People)	Percent (%)
Normal	30	100
Abnormal	0	0
Total	30	100

Source: Primary data, 2019

Table 4 shows that all respondents in the Hylocereus Polyrhizus + Honey group had a normal menstrual cycle (100%).

3. Karakteristik Manarche

Table 5, Distribution of Manarche Respondents Hylocereus Polyrhizus

Age	Frequency (People)	Percent (%)
11-13	28	93.3
14-16	2	6.7
Total	30	100

Source: Primary data, 2019

Based on table 5 it can be seen that of the 30 respondents to the Hylocereus Polyrhizus group the number of menarche distributions was at least found / in the age range of 14- 16 years ie as many as 2 people with a percentage of 6.7%.

Table 6,

Distribution of Manarche Respondents Hylocereus Polyrhizus + Honey

Age	Frequency (People)	Percent (%)
11-13	22	73.3
14-16	8	26.7
Total	30	100

Source: Primary data, 2019

Based on table 6 it can be seen that from 30 respondents to the Hylocereus Polyrhizus + Honey group the number of menarche distributions is at least in the age range of 14-16 years, as many as 8 people with a percentage of 26.7%.

Table 7, Hemoglobin levels before and after giving hylocereus polyrhizus in increasing hemoglobin levels in adolescent girls in SMP Negeri 7, Gorontalo City.

Hb Levels Before Treatment	F (People)	Hb Level After Treatment	F (People)
<12 gr/dl	15	<12 gr/dl	2
>12 gr/dl	15	>12 gr/dl	28
Total	30	100	30

Source: Primary data, 2019

Table 7 shows that before the administration of Hylocereus Polyrhizus, there were 15 respondents with Hb levels <12 gr/dl. And after the intervention was given there was a decrease in respondents with Hb levels <12 gr/dl by 2 people. In this case it can be seen that there was a

change in the increase in the number of respondents with a normal Hb level >12 gr/dl in the administration of Hylocereus Polyrhizus.

Table 8. Hemoglobin Levels Before and After Giving Hylocereus Polyrhizus + Honey in Increasing Hemoglobin Levels in Adolescent Girls in SMP Negeri 7, Gorontalo City.

Hb Levels Before Treatment	F (People)	Hb Level After Treatment	F (People)
<12 gr/dl	11	<12 gr/dl	1
>12 gr/dl	19	>12 gr/dl	29
Total	30	100	30

Source: Primary data, 2019

Table 8 shows that before giving Hylocereus Polyrhizus + Honey, there were 11 respondents with Hb levels <12 gr / dl. And after the intervention was given, there was a decrease in respondents with a Hb level <12 gr / dl of 1 person. In this case it can be seen that there was a change in the increase in the number of respondents with a normal Hb level >12gr /dl in the administration of Hylocereus Polyrhizus +Honey.

Table 9. Categories of Hemoglobin Levels Before and After Giving Hylocereus Polyrhizus in Increasing Hemoglobin Levels in Adolescent Girls in SMP Negeri 7 Gorontalo City

Hemoglobin Level Category	Fruquency (People)	Percent (%)
Increased	28	93,3
Not Increased	2	6,7
Total	30	100

Source: Primary data, 2019

Based on the table above shows that of the 30 respondents to the Hb level before and after the administration of Hylocereus Polyrhizus, there were 2 people (6.7%) of respondents who did not experience increased hemoglobin levels with Hb levels still <12 gr / dl.

Table 10. Categories of Hemoglobin Levels Before and After Giving Hylo-

cerus Polyrhizus + Madu in Increasing Hemoglobin Levels in Adolescent Girls in SMP Negeri 7 Gorontalo City

Hemoglobin Level Category	Fruquency (People)	Percent (%)
Increased	29	96,7
Not Increased	1	3,3
Total	30	100

Source: Primary data, 2019

Based on the table above shows that from 30 respondents to the Hb level before and after the administration of Hylocereus Polyrhizus + Honey, there was 1 person (3.3%) of respondents who did not experience increased hemoglobin levels with Hb levels still <12 gr /dl.

b. Bivariate Analysis

Hemoglobin levels before Hylocereus Polyrhizus treatment showed an average value of 11.9 mgram from 30 respondents with a standard deviation of 1.237. While Hb levels after treatment showed an average value of 13.7 mgram from 30 respondents with a standard deviation of 1.396. The results of SPSS statistical analysis using dependent t-test showed that the P- value result was 0,000 less than $\alpha = 0.05$, so it was concluded that H0 was rejected and Ha was accepted, so that effective administration of Hylocereus Polyrhizus in increasing levels of hemoglobin in young women in SMPN 7 Gorontalo.

Moreover, hemoglobin levels before Hylocereus Polyrhizus + Honey treatment showed an average value of 12.2 mgram from 30 respondents with a standard deviation of 1.143. While Hb levels after treatment showed an average value of 14.0 mgram from 30 respondents with a standard deviation of 1, 211.

The results of SPSS statistical analysis using dependent t-test showed that the P-value result was 0,000 less than $\alpha = 0.05$, so it was concluded that H0 was rejected and Ha was accepted, so that effective administration of Hylocereus Polyrhizus + Honey in increasing levels of hemoglobin in young women at SMPN 7

Gorontalo City.

DISCUSSION

a. Univariate Analysis

1. Characteristics respondents by age

Based on research that the characteristics of the age of adolescent girls in the *Hylocereus Polyrhizus* treatment group of respondents with an age range of 11-12 years were 4 people (13.3%) and the majority of respondents were at the age of 13-15 years as many as 26 people (86.7%). Whereas in the group with the treatment of *Hylocereus Polyrhizus* + Honey respondents aged 11-12 years were 6 people (20%) and in the age range 13-15 years were 24 people (80%).

In adolescence of women, peak growth (Peak Growth Velocity) occurs around 12-18 months before experiencing first menstruation, or around the age of 10-14 years and when menstruation has iron deficiency anemia characterized by a decrease in iron levels in the blood [3].

In the study showed that the majority of respondents who consumed *Hylocereus Polyrhizus* and *Hylocereus Polyrhizus* + Honey were still in the productive age and had an increased need for iron after being given iron intake in the *Hylocereus Polyrhizus* content or in honey, with iron requirements in the age group teens reach 2-3 mg/day This is supported by the theory that states that nutritional needs increase beyond the needs in childhood. In this case the need for iron increases in adolescents with a maturation period of reproductive organs or puberty [3].

According to Kumalasari's theory that a person's age affects adolescence in the maturation of reproductive health. Adolescence with the age of 10-19 years is a special and important period because it is a maturation period of the human reproductive organs and is often called puberty.

This is also supported by WHO theory that the age limit of adolescents varies according to the local socio- culture, where

WHO sets the age limit of 10-20 years as the age limit of adolescents. Thus in terms of service programs, the definition of adolescents used by the Ministry of Health are those aged 10-19 years and not yet married. Meanwhile, according to the BKKBN (Directorate of Youth and Protection of Reproductive Rights) the age limit of adolescents is 10-21 years [10].

2. Characteristics respondents based on menstrual cycles

Based on the characteristics of respondents it is known that all respondents with the administration of *Hylocereus Polyrhizus* and *Hylocereus Polyrhizus* + Honey showed a normal Menstrual Cycle (100%).

Increased iron requirements in adolescents are associated with growth rates, especially in adolescent girls who experience menstruation. Menstruation causes teenage girls to lose iron an average of 20 mg per month. Many young women still experience irregularities in their menstrual cycles, both with an average of a short cycle or a long cycle. One possible cause of menstrual cycle irregularities in adolescent girls is anemia condition (Jurnal Khikmawati and Setyowati, 2012) From research conducted by Hasrati states that there is a relationship between hemoglobin levels and the menstrual cycle. The less nutritional intake in young women, the menstrual cycle will experience disruption. This is related to changes in steroid hormone levels which are important factors in regulating the menstrual cycle. This is in line with research conducted by Nugrahani (2013) which concluded that there are differences in hemoglobin levels before and after menstruation $p = 0.000$ ($p > 0.005$).

This is influenced by respondents who are menstruating where menstruation at the time of Hb levels causes the amount of blood lost to range between 25-35 cc per cycle / month or 0.4-0.5 mg per day for 28 days. If the menstrual cycle is less than 18

days or more than 28 days and is irregular, usually the menstrual cycle does not ovulate.

3. Characteristics of respondents based on menarche cycle

Based on table 12 it can be seen that from 30 respondents to the group giving *Hylocereus Polyrhizus* the number of menarche distribution in young girls is at least in the age range of 14-16 years, as many as 2 people (6.7%). And in table 13 with *Hylocereus Polyrhizus* + Honey treatment of menarche age characteristics from 30 respondents the number of menarche distribution is at least in the age range of 14-16 years, as many as 8 people with a percentage of 26.7%. Categorizing menarche according to Citra (2012), namely fast menarche <11 years old, normal menarche aged 11-14 years, slow menarche >14 years. Based on the results of the study that most subjects experienced normal menarche that is equal to 93.3% and 73.3%.

The first time menstruation or menarche is a sign that a teenager has experienced a change in him and is also accompanied by various problems and changes in physical, biological, psychological and social that must be faced because it is a transition to adulthood (Kartono, 2006).

According to the theory put forward by Sukarni and Revelation where the first menstruation (menarche) is interpreted as the beginning of menstruation in a girl during puberty which usually appears at the age of 11 to 14 years. This is also supported by Wibowo where a person experiences menstruation for the first time at the age of 12-13 years. The occurrence of menarche in a person indicates that estrogen and progesterone levels are sufficient to induce uterine development.

4. Hemoglobin levels before and after giving *hylocereus polyrhizus* in increasing hemoglobin levels

Based on table 14 in the *Hylocereus Polyrhizus* group, it was shown that some

female students experienced mild anemia with 15 Hb levels <12 gr / dl, and after being given the Intervention there was a decrease in respondents with Hb levels <12 gr / dl by 2 people.

In this case it can be seen that there was a change in the increase in the number of respondents with a normal Hb level > 12 gr / dl in the administration of *Hylocereus Polyrhizus*.

Although statistically there is an influence between the administration of *Hylocereus Polyrhizus* on hemoglobin (Hb) levels, but there are 2 respondents who did not experience an increase in Hb levels because at the time of the study the female student underwent menstruation resulting in a decrease in hemoglobin levels of around 0.25-0.5 gr /dl. And the administration of *Hylocereus Polyrhizus* cannot increase hemoglobin (Hb) levels, but can only restore the original hemoglobin level.

According to Maryam, et al (2012) in the Journal of Amalia Amirul (2016), the impact of anemia for young women is declining reproductive health, inhibited mental motor development and intelligence, reducing the ability and concentration of learning, and disrupt growth.

According to Almatzier Sunita (2011), in the Journal of Amalia Amirul (2016), the way to increase Hb levels in the body is to increase the consumption of nutritious foods that are foods that contain lots of iron from animal foods and plant foods.

5. Hemoglobin levels before and after giving *hylocereus polyrhizus* + honey in increasing hemoglobin levels

Based on table 15 in the *Hylocereus Polyrhizus* + Honey group, it showed that some female students experienced mild anemia with a Hb level <12 gr / dl by 11 people, and after being given the Intervention there was a decrease in respondents with a Hb level <12 gr/dl by 1 person.

In this case it can be seen that there was a change in the increase in the num-

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ber of respondents with a normal Hb level > 12 gr / dl in the administration of Hylocereus Polyrhizus + Honey. Although statistically there is an influence between the administration of Hylocereus Polyrhizus + Honey to hemoglobin (Hb) levels, but there is 1 respondent who did not experience an increase in Hb levels because at the time of the study the female students underwent menstruation resulting in a decrease in hemoglobin levels of around 0.25-0.5 gr / dl. In this case the administration of Hylocereus Polyrhizus + Honey can increase hemoglobin (Hb) levels because dragon fruit is one of the foods that contain lots of vitamins and minerals and according to some expert's dragon fruit is beneficial for human health because it has a fairly complete nutritional content.

As for honey, which generally contains magnesium and iron? Honey also has a magnesium mineral content so that the iron content in honey can increase the amount of erythrocytes in blood serum against hemoglobin levels.

b. Bivariate Analysis

1. The effectiveness of giving hylocereus polyrhizus in increasing hemoglobin levels in adolescent girls at SMPN 7 Gorontalo City

The results showed that hemoglobin levels before Hylocereus Polyrhizus treatment showed an average value of 11.9 mgram from 30 respondents with a standard deviation of 1.237. and after intervention the Hb level showed an average value of 13.7 mgram from 30 respondents with a standard deviation of 1.396.

The results of SPSS statistical analysis using dependent t-test showed that the P-value result was 0,000 less than $\alpha = 0.05$, so it was concluded that H0 was rejected and Ha was accepted, meaning that effective administration of Hylocereus Polyrhizus in increasing levels of hemoglobin in adolescent girls at SMPN in SMPN 7 Gorontalo City.

According to Rahma's theory. E, (2016) in the Journal Munadira, (2019). Dragon fruit is a fruit that is rich in nutrients, each content of dragon fruit has benefits for the body. Dragon fruit as a food ingredient that contains complete nutrients needed by the body, where the content of protein, iron, vitamin A, vitamin B2, vitamin C contained in dragon fruit plays a role in the body's metabolism so that it can increase hemoglobin levels in the blood.

The results of this study are in line with research conducted by Arifin (2012) in the Journal Munadira (2019) which states that dragon fruit can increase hemoglobin levels in female white mice where the significance is 0.033 ($p < 0.05$), but does not affect the duration of administration.

2. The effectiveness of giving hylocereus polyrhizus + honey in increasing hemoglobin levels in adolescent girls at SMPN 7 Gorontalo City

Table 19 shows the results of the study that the hemoglobin level before Hylocereus Polyrhizus + Honey treatment shows an average value of 12.2 mgram from how many respondents with a standard deviation of 1.143. While Hb levels after treatment showed an average value of 14.0 mgram from how many respondents with a standard deviation of 1,211.

The results of SPSS statistical analysis using dependent t-test showed that the P-value was 0,000 less than $\alpha = 0.05$, so it was concluded that H0 was rejected and Ha was accepted, so that effective administration of Hylocereus Polyrhizus + Honey in increasing levels of hemoglobin in young women At SMPN 7 Gorontalo City.

Based on the data above, iron administration can prevent anemia by increasing hemoglobin levels. One of the foods that contain hemoglobin-forming compounds in the blood is honey.

According to the theory in the Susane Afryan Journal (2016), iron is part of the hemoglobin molecule, with the reduction

of iron the hemoglobin synthesis will decrease and result in decreased hemoglobin levels.

Decreased hemoglobin levels affect the ability to deliver oxygen to allbodytissuessoastoreducethe work productivity of young women. In this case needed sufficient iron content to adjust the iron needs in various organs.

In general, honey contains magnesium and iron. The mineral magnesium content in honey turns out to be the same as the magnesium content in blood serum. In addition, the iron content in honey can increase the amount of erythrocytes thereby increasing hemoglobin levels. So by consuming honey in adolescence with puberty can help increase the formation of red blood cells and prevent anemia.

Based on experiments conducted on mice, found an increase in hemoglobin in the blood of rats that consume honey. Mice that received honey supplements were able to maintain hemoglobin levels that were equivalent to hemoglobin levels at the beginning of the trial (Susane Afryan, 2016)

CONCLUSION

1. Before the administration of Hylocereus Polyrhizus, respondents were obtained with a Hb level <12 gr / dl of 15 people. And after being given an intervention, there was a decrease in respondents with Hb levels <12 gr / dl by 2 people. In this case it can be seen that an increase in the number of respondents to a normal Hb level >12 gr / dl so that there is an increase in hemoglobin levels after administration of Hylocereus Polyrhizus. in young women at SMPN 7 GorontaloCity.
2. Before giving Hylocereus Polyrhizus + Honey, obtained respondents with Hb levels <12 gr/dl as many as 11 people. And after being given an intervention, there was a decrease in respondents with a Hb level <12 gr/dl of 1 person. In

this case it can be seen that an increase in the number of respondents to a normal Hb level >12 gr / dl so that there is an increase in hemoglobin levels after administration of Hylocereus Polyrhizus. + Honey on young women at SMPN 7 Gorontalo City

3. Hemoglobin levels before Hylocereus Polyrhizus treatment showed an average value of 11.9 mgram with a standard deviation of 1237. While Hb levels after treatment showed an average value of 13.7 mgram from 30 respondents with a standard deviation of 1.396. The results of SPSS statistical analysis using dependent t-test showed that the P-value result was 0,000 less than $\alpha = 0.05$, so it was concluded that H_0 was rejected and H_a was accepted, meaning that effective administration of Hylocereus Polyrhizus in increasing levels of hemoglobin in adolescent girls at SMPN in SMPN 7 GorontaloCity.
4. Hemoglobin levels before Hylocereus Polyrhizus + Honey treatment showed an average value of 12.2 mgram with a standard deviation of 1.143. While the Hb levels after treatment showed an average value of 14.0 mgram with a standard deviation of 1,211. The results of SPSS statistical analysis using dependent t-test showed that the P-value was 0,000 less than $\alpha = 0.05$, so it was concluded that H_0 was rejected and H_a was accepted, so that effective administration of Hylocereus Polyrhizus + Honey in increasing levels of hemoglobin in young women at SMPN 7 Gorontalo City.
5. There is an influence but there is no significant difference between the interventions using Hylocereus Polyrhizus and Hylocereus Polyrhizus + Honey to increase hemoglobin levels in adolescent girls at SMPN 7 Gorontalo City.

SUGGESTIONS

1. For Schools
It is a useful reading material for schools so that it can be implemented in preventing and dealing with young women with anemia.
2. For Young Women
It is expected to pay more attention to the intake of nutrients consumed so as to prevent the occurrence of decreased hemoglobin levels which have an impact on the danger of anemia.
3. For further researchers
It is hoped to be able to research more deeply and further about the interests of adolescents towards dragon fruit and honey by using different analysis and methods.

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