

Comparison of Haemoglobin Levels of Young Women (Study of Giving Sticks of Tolo Beans)

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Abstract:

Background: Anemia is a health problem in all over the world, especially in developing countries. It is estimated that 30% of the world's population suffers from anemia and it occurs in many communities, especially adolescents and pregnant women. Anemia in young women is still quite high, according to the World Health Organization (WHO). The prevalence of anemia in the world ranges from 40-88%. %, in Indonesia, namely 21.7% with anemia sufferers aged 5-14 years at 26.4% and 18.4% patients aged 15-24 years. This research is very important to do because the problem of anemia in young women in the village is still an interesting topic to discuss.

Materials and Methods: Currently anemia is one of the main nutritional problems in Indonesia, especially iron deficiency anemia, especially in adolescents. This type of research is a case control design. The research location is in Sugiharjo village, Batang Kuis district, Regency. Deli Serdang. Population of 307 people. The sample taken was 20%, as many as 60 teenagers who were given tolo nut sticks and 60 people who were not given tolo nut sticks. Data collection was carried out using primary and secondary data.

Results: Primary data is the case sample by measuring hemoglobin levels given tolo bean sticks for 14 days. control by measuring hemoglobin levels in adolescent girls. The Wilcoxon test results are known by Asyim. Sig. (2-tailed) is worth 0.000. Because the value of 0.000 is less than <0.05

Conclusion: it is concluded that there is a difference between the modifying action of tolo nut sticks and the increase in hemoglobin levels in adolescents. It is recommended for young women to consume more tolo nut stick in increasing hemoglobin levels.

Key Word: Tolo Nut Stick, Hemoglobin Levels, Young Women.

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I. Introduction

Anemia is one of the health problems around the world, especially developing countries, it is estimated that 30% of the world's population suffers from anemia and occurs a lot in society, especially in adolescents and pregnant women. Anemia in young women is still quite high, according to the World Health Organization (WHO). The prevalence of world anemia ranges from 40-88%. %, in Indonesia, 21.7% with anemia patients aged 5-14 years of age of 26.4% and 18.4% of people aged 15-24 years (Ryandoko, 2017).

Anemia is a condition where the component in the blood that is hemoglobin (Haemoglobin) in the blood is less than normal levels of Haemoglobin less than 12 gr / dl (Sayogo, 2006) Young women have a ten times greater risk of suffering from anemia compared to young men. Anemia in adolescents can cause delays in physical growth, behavioral and emotional disorders. This can affect the growth and development process of brain cells so that it can cause decreased endurance, weakness and hunger, impaired learning concentration, decreased learning achievement and can lead to low work productivity (Wijianto, 2002).

Nutritional anemia is influenced by several factors including insufficient amount of iron intake, low iron absorption, increased need, lack of blood, poor diet, socioeconomic status, infectious diseases, low knowledge of iron. Based on the 2012 North Sumatra Provincial Health Profile survey conducted in four districts, as many as 40.50% of female workers suffer from anemia. Household Health Survey (SKRT) data in 2008 revealed the prevalence of iron deficiency anemia in young women (15-19 years) of 26.5% and women of childbearing age of 26.9%.

Iron deficiency (Fe) in everyday foods can lead to blood deficiency known as iron nutrient anemia (AGB). There are difficulties in meeting the needs of Fe (iron) that is the low absorption rate of Fe in the body, especially vegetable fe sources that are only absorbed by 1-2%, animal fe sources reach 10-20% (Adriani & Wirjatmadi, 2012).

Strategies to overcome the problem of anemia in young women are by improving eating habits, fortification of food and supplementation of Fe. Changing diet and fortification of food is an important long-

term strategy but cannot be expected to succeed quickly, in other ways with the provision of additional nutrients such as tolo bean sticks.

Stick one of the snacks that is almost similar to crackers is a processed snack that has an elongated flat shape has a crunchy texture. Tolo beans weighing 100 gr contain energy of 331 kilocalories, protein 24.4 grams, carbohydrates 56.6 grams, fat 1.9 grams, calcium 481 milligrams, phosphorus 399 milligrams, and iron 13.9 milligrams and, vitamin B1 0.06 milligrams lower fat levels are good consumed as a diet food for young women who want to reduce weight.

However, the utilization and variety of processing in tolo beans that have good health effects for the body is not many and varied. The result of organoleptic test conducted is 40: 60 namely 40 tolo beans and 60 wheat flour, producing a stick as much as 200 gr / dough.

This research is very important to be done because the problem of anemia in young women in the village is still an interesting topic to discuss. Currently anemia is one of the main nutritional problems in Indonesia, especially iron deficiency anemia, especially in adolescents.

II. Material And Methods

This type of research is Quasi Experiment with control case design design. The research location in Sugiharjo village, Batang Kuis Sub-District, Deli Serdang. The population in this study was as many as 307 people.

The study samples were young women and purposive sampling. The number of samples taken amounted to 20% of the population of 60 teenagers who were given sticks of tolo beans and 60 teenagers who were not given sticks of tolo beans. To get the sample is done by screening, namely checking haemoglobin levels with Haemoglobin levels.

The method of data collection conducted in this research is to use primary data and secondary data. The primary data is in the sample of cases by measuring haemoglobin levels of young women who are given tolo bean sticks for 14 days, the amount of giving 100 grams per day, giving is done at 10.00 WIB every day. Haemoglobin levels are measured by digital test method and for control by measuring haemoglobin levels of young women.

Data analysis with univariate and bivariate analysis. Univariate analysis to describe Haemoglobin levels includes average, standard deviation, middle value, increase and decrease. Bivariate analysis was conducted to look at haemoglobin levels of young women who were given tolo bean sticks with those not given tolo nut sticks by using paired t test if the data is normal. If the data is not normal, wilcoxon test is done.

III. Result

After 6 weeks of follow upmit was found that LDL-C ,went down by -32.81%on regular dose of Atorvastatin 40 mg,-37.28% on Rosuvastatin 20 mg daily and -37.53% on Rosuvastatin 20 mg alternate day.

Variabel	Mean (nilai rata-Rata	SD (Standart Deviasi)	N	CI 95% (Low-Up)	Mean Rank	T	P (Value)
Non Stick Kacang Tolo	10.242	0600	60	10.122	30.00	0	0.000
Stick Kacang Tolo	11.950	.2715	60	11.880			

Wilcoxon test results in table 6.4 show that Based on the output "Test Statistic", Known Asyim.Sig. (2-talled) is worth 0.000. Since the value of 0.000 is less than < 0.05 , it can be concluded that "Hypothesis accepted". This means that there is a difference between the modification of tolo sticks to increase Haemoglobin Levels for Pre test and Post test, so that it can also be concluded that "there is an effect of modification of tolo bean sticks on Haemoglobin Levels in young women in Sugiharjo Village, Batang Kuis District, Deli Serdang Regency in 2020".

IV. Discussion

Wilcoxon test results showed that there were significant differences in haemoglobin levels between the posttest and pretest groups. In other words, the giving of tolo bean sticks significantly increases young women's Haemoglobin levels

The results of this study are not in line with Fatiyah research (2019) The effect of Giving Tolo Nut Sticks to Increase Haemoglobin Levels In Young Women At Trisakti Lubuk Pakam Private High School where the results prove that there is no effect of giving tolo bean sticks to hemoglobin levels of young women at Trisakti Lubuk Pakam Private High School because the tools used are less valid and short time in the process of giving tolo bean sticks (Fathiyah, 2019)

The results of research on tolo beans prove that there is a variation in the use of tolo bean flour and wheat flour on the physical quality of tolo bean sticks, chemical quality stick tolo beans with tolo bean flour as much as 40 gr and wheat flour as much as 60 gr contains fiber 0.95%, carbohydrates 24.0%, protein 11.9%, fat 2.22%, zatbesi(fe) 35.8% (Panjaitan, 2019).

The importance of increasing haemoglobin levels is to prevent anemia. Anemia is one of the health problems around the world, especially developing countries where an estimated 30% of the world's population suffers from anemia. Anemia occurs in many communities, especially in adolescents and pregnant women. Anemia in young women is still quite high, according to the World Health Organization (WHO) (2013), the prevalence of anemia worldwide ranges from 40-88%. The population of adolescents (10-19 years old) in Indonesia is 26.2% consisting of 50.9% of men and 49.1% of women. (World Health Organization, 2013).

Anemia is a condition in which the component in the blood, hemoglobin (Haemoglobin) in the blood is less than normal levels. Young women have a ten times greater risk of suffering from anemia compared to young men. This is because young women experience menstruasi every month and are in their inancy so need more iron intake. Determination of anemia can also be done by measuring hematocrit (Ht) which is on average equivalent to three times hemoglobin levels. Haemoglobin levels limit for young women to diagnose anemia is if haemoglobin levels are less than 12 gr / dl. (Tarwoto et al., 2012).

Anemia in adolescents can cause delays in physical growth, behavioral and emotional disorders. This can affect the process of growth and development of brain cells so that it can cause decreased endurance, easily limp and hungry, impaired learning concentration, decreased learning achievement and can lead to low work productivity (Sayogo, 2006).

Nutritional anemia is influenced by several factors including insufficient iron intake, low iron absorption, increased need, lack of blood, poor diet, socioeconomic status, infectious diseases, low knowledge of asbestos. Currently anemia is one of the main nutritional problems in Indonesia, especially iron deficiency anemia, which is quite prominent in school children, especially teenagers (Wijianto, 2004). In Indonesia, the prevalence of anemia is still quite high. Poltekkes Depkes Jakarta I (2010) showed that anemia in young women amounted to 26.50%. According to Risesdas 2013 the prevalence of iron nutrient anemia in adolescents is 22.7%. According to who in Indonesia prevalence is 26% for girls and 11% for boys. According to risesdas data in 2013, the prevalence of anemia in Indonesia is 21.7% with anemia patients aged 5-14 years of age of 26.4% and 18.4% of people aged 15-24 years (Ministry of Health of the Republic of Indonesia, 2015).

Iron deficiency (Fe) in everyday foods can lead to blood deficiency known as iron nutrient anemia (AGB). Young women are more prone to anemia compared to men. There are difficulties in meeting the needs of Fe (iron) that is the low absorption rate of Fe in the body, especially vegetable fe sources that are absorbed only 1-2%. Animal fe sources reach 10-20% (Aisha, 2018).

There are several factors that can cause anemia, among others, ryandoko's nutritional, menstrual, and socioeconomic status (2017). The main factor causing anemia is lack of iron intake. About two-thirds of the iron in the body is Wijianto (2004) in hemoglobin red blood cells. Other factors that influence the incidence of anemia include lifestyle such as smoking, drinking alcohol, breakfast habits, socioeconomic and demographics, education, gender, age and region. Results of National Basic Health Research (Risesdas) in 2013 showed anemia pravelensi at the age of 5-14 years by 26.4%. Strategies to overcome nutritional status and anemia problems in young women are by improving eating habits, fortification of food and supplementation of Fe. Changing diet and fortification of food is an important long-term strategy but can not be expected to succeed quickly, another way is to provide Fe supplementation through the administration of blood-added tablets (TTD) and the provision of additional nutrients such as stick tolo beans (Adriani & Wirjatmadi, 2012).

Tolo beans weighing 100 gr contain energy of 331 kilocalories, protein 24.4 grams, carbohydrates 56.6 grams, fat 1.9 grams, calcium 481 milligrams, phosphorus 399 milligrams, and iron 13.9 milligrams. In addition, tolo beans also contain vitamin A as much as 0 IU, vitamin B1 0.06 milligrams and vitamin C 0 milligrams. Tolo beans also contain microminerals that are beneficial for the body in the formation of red blood cells, namely iron as much as 13.9 mg (Fathiyyah, 2019).

According to researchers, there are many factors that can increase HAEMOGLOBIN levels in teenagers in Sugiharjo Village, Batang Kuis sub-district, one of which is processed food such as sticks which is one type of snack in traditional markets that are in demand by the community. People's fondness for this stick makes it one of the snack processed products that promise to be produced. Stick has undergone many developments by utilizing the basic ingredients of the region (local). Stick is one of the snacks that are very popular with children and adults. Tolo beans are foodstuffs that are usually produced and consumed by the people of Sugiharjo Village, Batang Kuis Sub-District.

Tolo beans with high iron micromineral are a good food source for daily consumption. However, the utilization and variety of processing in tolo beans that have good health effects for the body is not many and varied. Peanuts that have many nicknames, sometimes some call them tolo beans, tunggak, dadap or even kebo beans are very easy to find in Indonesia and in Asian countries. The advantage of tolo beans is the lower fat

content so that it can minimize the effects of the use of fatty food products and have high iron levels that can increase haemoglobin levels in adolescents. Tolo beans themselves in addition to high iron values also have protein, calcium, fiber, high folic acid and are also low in fat. For young women who want to lose weight tolo beans are well consumed as a diet food.

V. Conclusion

1. Haemoglobin levels of respondents who are not given tolo beans majority is 10.00 gr / dl.
2. Haemoglobin levels of respondents given the majority of tolo beans is 12.00 gr / dl.
3. that there is no equal value between no action given and that given action.
4. There was a significant difference in haemoglobin levels between case groups and controls where the case group had higher Haemoglobin levels than the control group

References

- [1]. Adriani & Wirjatmadi. (2012). Peranan Gizi dalam Siklus Kehidupan. Kencana.
- [2]. Aisyah, A. (2018). Faktor-Faktor yang Berhubungan dengan Kadar Hemoglobin pada Siswa SMP. SEAJOM: The Southeast Asia Journal of Midwifery. <https://doi.org/10.36749/seajom.v4i2.37>
- [3]. Fathiyyah, M. D. (2019). Pengaruh Pemberian Stick Kacang tolo Terhadap Peningkatan Kadar Haemoglobin Pada remaja Putri di SMA Swasta Trisakti Lubuk Pakam .In Politeknik Kesehatan Medan.
- [4]. Kementerian Kesehatan Republik Indonesia. (2015). Status Gizi Pengaruhi Kualitas Bangsa.
- [5]. Panjaitan. (2019). Pengaruh Variasi Penggunaan Tepung Kacang Tolo Dan Tepung Terigu Terhadap Mutu Fisik Dan Mutu Kimia Stick Kacang Tolo. Politeknik Kesehatan Medan. <http://repo.poltekkes-medan.ac.id/xmlui/handle/123456789/1816>
- [6]. Ryandoko, F. (2017). Variasi Pencampuran Kacang Tolo Pada Brownies Kacang Tolo Ditinjau Dari Sifat Fisik, Sifat Organoleptik Dan Kadar Zat Besi. In Poltekkes Kemenkes Jakarta.
- [7]. Sayogo, S. (2006). Gizi Remaja Putri. EGC.
- [8]. Tarwoto dkk. (2012). Kesehatan Remaja Problem dan Solusinya. Salemba Medika.
- [9]. Wijianto. (2002). Dampak Suplementasi Tablet Tambah Darah (TTD) Dan Faktor-Faktor Yang Berpengaruh Terhadap Anemia Gizi Ibu Hamil Di Kab. Banggai Propinsi Sulawesi Tengah. Nutrition Science. <http://repository.ipb.ac.id/handle/123456789/23209>
- [10]. Wijianto. (2004). Dampak Suplementasi Tablet Tambah Darah (TTD) dan Faktor Faktor yang Berpengaruh Terhadap Anemia Gizi Ibu Hamil di Kabupaten Banggai Provinsi Sulawesi Tengah. Departemen Gizi dan Sumberdaya Keluarga Fakultas Pertanian Institut Pertanian Bogor.
- [11]. World Health Organization. (2013). Worldwide Prevalency Of Anemia Global database on Anemia.

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