THE EFFECTIVENESS OF GIVING SOY MILK TO INCREASING HAEMOGLOBIN (Hb) LEVELS IN ANEMIA ADOLSCENT IN THE WORK AREA OF THE CIHIDEUNG COMMUNITY HEALTH CENTER TASIKMALAYA CITY

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ABSTRACT	Keywords
The World Health Organization (WHO) states the prevalence of anemia in developing countries at 30-48%. Based on Riskesdas 2018, the prevalence of adolescent anemia in Indonesia is 32. The prevalence of anemia in the working area of the Cihideung Health Center is 36.61%. This study aims to determine the effectiveness of soy milk administration against increased levels of haemoglobin (hb) in anemic adolescent girls. This study uses Quasy-Experiment design with Pretest and Posttest Control Group design. This research carried out in the working area of the Cihideung health center, Tasikmalaya City. The population in this study was adolescent girls aged 13-14 years who had anemia as many as 30 adolescents. The sampling technique to be used is total sampling. The data analysis used was univariate analysis and Wilcoxon bivariate analysis and Mann Withney difference test. The results of the study found that the average Hb level of the intervention group before treatment was 10.833, after treatment increased to 13.267, so there was an increase of 2.434. In the control group before treatment was 10,987, after treatment increased to 12,593, resulting in an increase of 1,606. Wilcoxon statistical test was carried out, the intervention group obtained results (P = 0.001) and the control group (P = 0.001). Different test was carried out using Mann Withney's analysis, the results of the P Value value of 0.011. It can be concluded that there is a significant difference in average Hb levels between the intervention group and the control group	**Adolescent, Anemia, HB Levels, Soy Milk**

INTRODUCTION

Adolescence is a transition period from childhood to adulthood with an age limit of 10-19 years. In boys, this period begins at the age of 14 years, and in girls begins at the age of 10 years. Adolescence is a time when adolescents experience specific changes so these changes can affect adolescent health. In adolescence, changes occur, one of which is in the lifestyle of adolescents. Lifestyle changes and changes in consumption patterns can affect adolescent malnutrition. Lack of consumption of foods containing iron can lead to anemia, which has a short and long-term impact on adolescents. (Ariani 2017)

The short-term impact that occurs in anemic adolescents is low productivity and decreased learning ability. While the long-term impact on adolescents who are anemic is that the immune system and adolescent growth will be delayed it can cause high rates of pain. (Ariani 2017) Anemia is a condition where there is a reduction in erythrocytes indicated by a reduced content of Haemoglobin (Hb), Hematocrit, and quantity of Erythrocytes. The formation of Haemoglobin (Hb) requires the availability of iron and body greeting protein. Protein serves as a carrier of iron to the bone marrow to form new Haemoglobin (Hb) molecules. (Nasruddin, Faisal Syamsu, and Permatasari 2021)

Anemia is a condition in which the amount of hemoglobin (Hb) is less than the normal amount. Normal hemoglobin (Hb) levels in men and women have differences. In men, normal Haemoglobin (Hb) levels are 13 g / dL, while in women normal Haemoglobin (Hb) levels are 12 g / dL. (Ariani 2017) Iron deficiency anemia is a universal problem in the world affecting more than 2 billion people worldwide. With the majority of them being in developing countries as much as 89%. Anemia affects about 300 million children in the world aged from 6 months to 5 years. In developing countries, Iron deficiency anemia is a health problem that affects toddlers, preschoolers, and school children due to the rapid rate of development combined with depleted Iron storage, poor living conditions, and inadequate diet. (Nasruddin et al. 2021)

The World Health Organization (WHO) states that more than 30% of the world's accusers have anemia. The prevalence of anemia in developed countries is 4.2-20% and in developing countries is 30-48% with iron nutrition anemia. In developing countries, the prevalence of anemia is 10-20% higher than in developed countries in the world. (WHO 2015) The incidence of anemia in Indonesia is still quite high. Based on Riskesdas 2018 information, the prevalence of anemia in adolescents is 32%, meaning that 3-4 out of 10 adolescents have anemia. (Kemenkes RI 2018)

The Nutrition International survey in 2018 found that the problem of anemia of adolescent girls in West Java was 41.93% with the coverage of adolescent girls who received blood-added tablets (TTD) according to West Java in 2021 was only 25.2% and still at the bottom of the West Java target, which was 52%. In West Java, the coverage of adolescent girls taking 52 tablets of added blood (TTD) in 2021 was 16.7%. (Dinas kesehatan provinsi jawa barat 2022) Based on data in Tasikmalaya City in 2019, it is known that the prevalence of anemia in adolescent girls aged 12-19 years is 19.6%. This data shows that the incidence of anemia in adolescent girls is still high because the prevalence of anemia is considered to be a health problem if >15%. (Dinas Kesehatan Kota Tasikmalaya 2019)

Based on the Circular Letter of the Head of the Tasikmalaya City Health Office Number 440/54/Dinkes regarding anemia screening activities for grade 7 and 10 students of all schools/madrasahs in Tasikmalaya City, addressed to all UPTD Puskesmas in Tasikmalaya. From 22 community health centers in Tasikmalaya, results were obtained from 8 community health centers that had screened for anemia in adolescent girls in their work area. Based on the screening results, 759 out of 1,694 female students have anemia, so anemia in adolescent girls in Tasikmalaya City ranges from 45% of the number of female students who have been screened. (Dinas Kesehatan Kota Tasikmalaya 2022)

The data above, data was obtained from one of the community health centers, namely Cihideung Health Center, which has carried out anemia screening for grade 7 and 10 adolescent girls. The results of the screening conducted by Puskemas Cihideung from January to May 2023 found that 179 out of 489 adolescent girls had anemia so the prevalence of anemia in the Cihideung Health Center work area was 36.61%. (Puskesmas Cihideung 2022)

Adolescent girls are prone to suffer from anemia because of a lot of blood loss during menstruation. Rheumatri who suffers from anemia is at risk of anemia during pregnancy. This will have a negative impact on the growth and development of the fetus

in the womb and has the potential to cause complications of pregnancy and childbirth, even causing the death of mothers and children. (Latief et al. 2018) Young women need 8-15 mg of iron daily. (Kementerian Kesehatan RI 2018) Iron for Hb synthesis is obtained from transferrin. Low levels of transferrin in the blood can be caused by low intake of iron nutrients from food, less effective absorption in the intestine, or due to increased needs. Dietary iron absorption ranges from 10-15% depending on the iron source.(Valentina, Yusran, and Meliahsari 2021)

The availability of iron and sufficient protein in the body is needed to synthesize Haemoglobin (Hb). Hemoglobin Hb is a molecule consisting of globin proteins, porphyrins, and hemp iron. If these three factors are not fulfilled properly Hb synthesis will be inhibited. Protein and iron are the most commonly deficient components in the body. (Rizki and Wiji 2022) Increased levels of Haemoglobin (Hb) in the body is the consumption of nutritious foods that can be obtained from iron-rich animal foods such as meat, fish, chicken, liver, and eggs and plant foods such as dark green vegetables, beans, and tempeh. Sources of iron are red meat such as beef, mutton, lamb, beans, green vegetables, eggs, and seafood. (Valentina et al. 2021)

Soybeans are the best source of protein, vitamins, minerals, fat, and fiber, but soybeans are more often processed into food ingredients, namely tempeh or tofu, and used to make drinks such as soy milk. (Valentina et al. 2021) Soy milk is one of the processing products which is the result of extraction from soybeans. Soy milk protein has almost the same amino acid arrangement as cow's milk so soy milk is often used as a substitute for cow's milk for those who are allergic to animal protein. (Budimarwanti 2017)

Soy milk is a highly nutritious drink, especially its protein content. In addition, soy milk also contains fat, carbohydrates, calcium, phosphorus, iron, provitamin A, vitamin B complex (except B12), and water. (Budimarwanti 2017) Soy protein contains 18 amino acids, namely 9 types of essential amino acids and 9 types of nonessential amino acids. Essential amino acids include cystine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan, and valine. Nonessential 6 amino acids include alanine, glycine, arginine, histidine, proline, tyrosine, aspartic acid, and glutamic acid. In addition, soy protein is very sensitive to physical treatment and whiskers. (Martono, Danriani, and Hartini 2016) 100 grams of soybeans contained 8.54 gr, of energy 446 kcal. Protein 36.5 gr, fat 19.9 gr, carbohydrate 30.2 gr, sugar 7.33 gr, fiber 9.3 gr, calcium 277 mg, Fe 15.7 mg, vitamin C 6 mg. (USDA 2019)

In line with previous research conducted by Nurmalia Rizki and Friends in 2022 entitled "The Effect of Soy Milk on Increasing Haemoglobin (Hb) Levels of Young Women of SMA Negeri 1 Perhentian Raja Kampar" reported that the provision of soy milk had a significant effect on the Hb levels of adolescent girls at SMA N 1 Perhentian Raja, Kampar. The occurrence of increased Hb levels in subjects given soy milk is because soy milk contains 35-40% protein, and 90% of its part is stored in 2 forms of globulin protein, namely 11S glycinin and 75 β-conglycinin. Glycinin has subunit A (acid) and subunit B (base), while β-conglycinin has subunits α and β. This protein contains all the essential amino acids so soy products are almost similar to animal foods in terms of protein quality but with lower saturated fat levels and no cholesterol (Rizki and Wiji 2022)

Based on research by Adinda Valentina and Friends in 2021 entitled "The Effect of Soy Milk on Increasing Haemoglobin (Hb) Levels. In anemic pregnant women in the working area of the Lepo-Lepo Health Center in Kendari City in 2020" also stated that there was an increase in Haemoglobin (Hb) levels in anemic pregnant women. In his research, it was found that there was a difference in the average Hb levels before and after the intervention. Increased Hb levels with an average increase in Hb levels of 0.87 g / dl. This is because 100 ml of soy milk contains 0.70 mg of iron (Fe). (Valentina et al. 2021)

Related to this that by meeting the nutritional needs and nutrition in adolescents

to prevent iron deficiency anemia, researchers are interested in research to determine the effectiveness of soy milk administration against changes in Haemoglobin (Hb) in adolescents as prevention of anemia in the Tasikmalaya region entitled " The effectiveness of soy milk on increasing hemoglobin (Hb) levels in anemic adolescent girls in the working area of Cihideung Health Center, Tasikmalaya City".

METHOD

This study uses Quasy-Experiment design with Pretest and Posttest Control Group design. This research carried out in February - June 2023 in the working area of the Cihideung health center, Cihideung District, Tasikmalaya City. The population in this study was adolescent girls aged 13-14 years who had anemia as many as 30 adolescents. The sampling technique to be used is total sampling. The data analysis used was univariate analysis and Wilcoxon bivariate analysis and Mann Withney difference test.

RESULTS

Table 1. Frequency distribution of hemoglobin (Hb) levels in the Intervention Group and the Control Group before Treatment.

Group	Before Treatment				
	N	Min	Max	Average	SD
Intervention	15	9,6	11,5	10,833	0,5715
Control	15	10	11,9	10,987	0,5866

Based on Table 1. The Hb level of female adolescents in the intervention group before treatment had an average Hb lower than the average Hb in the control group before treatment. The average value of the intervention group was 10.833 and the average control group was 10.987.

Table 2. Frequency distribution of hemoglobin (Hb) levels in the intervention group and the control group after treatment.

Group	After Treatment				
	N	Min	Max	Average	SD
Intervention	15	12,4	15	13,267	,8600
Control	15	12	14	12,593	,5587

Based on Table 2. The Hb level of female adolescents in the intervention group after treatment had an average Hb higher than the average Hb in the control group after treatment. The average value of the intervention group was 13.267 and the average control group was 12.593.

Table 3. Comparison of Hemoglobin Levels in the Intervention Group and the Control Group in Anemia in Young Girls in the Working Area of the Cihideung Health Center, Tasikmalaya City

	Intervention Group	Control Group	P Value
Pretest			0.001 *
Means	10,833	10,987	
range	1,9	1,9	
Postest			0.001 *
Means	13,267	12,593	
range	2,6	2	
Ascension	2,434	1,606	
P.Value Comparison of Pretest and Posttest	0.533 **	0.011 **	

Data Normality Test: Shapiro-Wilk; *Wilcoxon; **Mann-Withney

Based on Table 3. the average hemoglobin (Hb) level in the intervention group before being given treatment was 10.833. After being given treatment, it increased to 13.267, increasing to 2.434. Statistical test results using Wilcoxon data analysis obtained a Z count -3.411 b and analysis using Wilcoxon obtained a P value 0.001 <0.005, which means H0 was rejected.

The average hemoglobin (Hb) level of the control group before being given treatment was 10.987 after being given the treatment it increased to 12.593, increasing to 1.606. Statistical test results using Wilcoxon data analysis obtained Z count -3.412 b and P Value 0.001 <0.005.

Then a different test was performed on the 2 groups using Mann Withney

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analysis. The Mann-Withney test in the intervention group and the control group before treatment obtained a P value of 0.533 > 0.05. This means there was no significant difference between the Hb levels of the intervention group and the control group before being given treatment.

Then the Mann-Withney test was carried out in the intervention group and the control group after treatment obtained a P value of 0.011 <0.05. This means there is a significant difference between the intervention group (giving soy milk and Fe tablets) and the control group (giving only Fe tablets).

DISCUSSION

1) Description Of The Hemoglobin Level Of Female Adolescent In The Intervention Group An The Control Group Before Treatment

The results of the research that was carried out showed that the hemoglobin level description of the female adolescents in the intervention group before treatment was 10.833, and in the control group, the average Hb level before treatment was 10.987.

Iron deficiency anemia (ADB) is caused by the disruption of iron homeostasis in the body. Iron homeostasis in the body is regulated by iron absorption which is influenced by iron intake and iron loss. Lack of intake of iron/iron intake decreased absorption, and increased loss of iron can cause an imbalance of iron in the body, causing anemia due to iron deficiency.

The iron that manages to enter the enterocytes will interact with para ferritin to then be absorbed and used in the process of erythropoiesis. The rest flows into the blood plasma for reutilization or is stored in the form of ferritin or binds to transferrin. The iron-transferrin complex is stored in cells outside the digestive system or in the blood. (Proverawati 2011)

2) Description Of The Hemoglobin Level Of Female Adolescent In The Intervention Group An The Control Group After

The results of the research that has been done show that the hemoglobin level description of the female adolescents in the intervention group after being given treatment is 13.267 and the average Hb level in the control group after being given treatment is 12.593.

Treating and preventing iron deficiency can be done by increasing the consumption of iron from animal sources such as meat, fish, poultry, seafood, and plant foodstuffs (green vegetables, nuts). Accompanied by the consumption of iron supplementation, this is a way to overcome iron deficiency anemia in areas with high prevalence. Provision of iron supplementation in adolescents at a dose of 1 mg/kg/day and iron supplementation should not be given with milk, coffee, tea, soft drinks containing carbonate, multivitamins containing phosphate, and calcium.

Fe tablets are iron nutritional supplements containing 200 mg of elemental iron and 0.25 mg of folic acid which play an important role in the formation of red blood cells. Fe tablets can be consumed at night before going to bed, this can prevent the onset of nausea that some young women complain about after consuming Fe tablets. Fe tablets are best taken with water and avoid taking Fe tablets together with coffee and tea which contain tannins and caffeine which can inhibit the absorption of iron in the body.

Soy milk has almost the same protein content and amino acid composition as cow's milk. In addition, soy milk contains sufficient amounts of iron, minerals, and vitamins. Soybean is a high source of oil. Soybean fat content is around 18% and contains essential unsaturated fatty acids that the body needs for a healthy life. Soy milk besides containing iron and vitamin C also contains protein which can increase hemoglobin levels in pregnant women who experience anemia (Astawan 2012)

The availability of sufficient iron and protein in the body is needed to synthesize Hemoglobin (Hb).

Hemoglobin Hb is a molecule consisting of the protein globin, protoporphyrin, and haem iron. If any of these three factors is not fulfilled properly, Hb synthesis will be hampered. Protein and iron are components that are most often deficient in the body.

3) Comparison of hemoglobin (Hb) levels in the intervention group and the control group in anemic young women in the working area of the Cihideung Health Center.

Based on Table 3 Comparison of Hemoglobin Levels in the Intervention Group and Control Group in Mild Anemia in Young Girls in the Work Area of the Cihideung Health Center, Tasikmalaya City. It was found that the average hemoglobin level in the intervention group before being given treatment was 10.833, after being given treatment it increased to 13.267, increasing to 2.434. Statistical test results using Wilcoxon data analysis obtained Z count -3.411 b and P Value 0.001 <0.005.

Based on Table 4.3, the average hemoglobin (Hb) level of the control group before being given treatment was 10.987, after being given treatment it increased to 12.593, increasing to 1.606. Statistical test results using Wilcoxon data analysis obtained Z count -3.412 b and P Value 0.001 <0.005.

Because the data are not normally distributed, the Difference Test will be continued with the Mann-Whitney U statistical test to see how significant the differences are between the intervention group and the control group. Based on Table 4.3 of the Mann Whitney U test in the intervention group and the control group before being given treatment, the output "Test statistic" was known to be a P value of 0.533 > 0.05, thus it can be said that there was no significant difference between the intervention group and the control group before being given treatment.

The Mann Whitney U test in the intervention group and the control group after being given treatment, the output "Test statistic" is known to have a P value of 0.011 <0.05. Thus it can be said that there was a significant difference between the intervention group (giving soy milk and Fe tablets) and the control group (giving only Fe tablets). Because there is a significant difference, it can be said that H0 is rejected, therefore "Giving soy milk is effective in increasing hemoglobin (Hb) levels in female adolescents."

Based on the results of the study, the intervention group after being given treatment found that the female adolescents who experienced anemia experienced an increase in hemoglobin (Hb) levels so that 15 female adolescents in the intervention group (100%) were no longer anemic. Likewise with the control group after being given the treatment it was found that the female adolescents who experienced anemia had an increase in Hb levels so 15 female adolescents in the control group (100%) were no longer anemic.

Anemia in adolescents is a condition in which the number of red blood cells/hemoglobin (Hb) in the blood is lower than the normal value, namely in young women. Anemia in adolescents will have an impact on impaired concentration which results in decreased learning achievement, susceptibility to disease due to decreased immunity, and lack of concentration when participating in learning at school.

Hemoglobin consists of the word "heme" and the word "globin", where heme is Fe and protoporphyrin is mitochondria, and globin is a chain of amino acids (1 pair of α chains and 1 pair of non-α). (Rosa 2015) Hemoglobin is a globular protein that contains iron. In humans, red blood cells are made in the spinal cord, then form the biconcave plate. Human red blood cells are made in the bone marrow. The process of Erythropoiesis starts with Multipotential stem cells. From several multipotential stem cells, unipotential stem cells are formed, each of which only forms one

type of cell, for example, erythrocytes. (Besuni, JAfar, and Indria 2013)

The process of formation of erythrosis is called erythropoiesis. Unipotential stem cells will begin to undergo mitosis while differentiating into erythrocytes when stimulated by erythropoietin. In addition to stimulating the proliferation of unipotential erythropoietin stem cells, it also stimulates further mitosis of promonoblast cells, basophilic normoblasts, and polychromatophilic normoblasts. The youngest erythrocyte cells that do not have nuclei are called reticulocytes which then turn into erythrocytes. In the process of forming red blood cells by erythropoietin in very small amounts it will stimulate committed unipotential cells to immediately divide and differentiate into proerytoblasts. (Besuni et al. 2013)

Two processes play a major role in the process of forming erythrocytes from unipotential stem cells, namely the formation of Deoxyribose Nucleic Acid (DNA) in the cell nucleus and the formation of hemoglobin in the plasma of erythrocytes. The formation of the cell cytoplasm and hemoglobin occurs simultaneously with the process of forming DNA in the nucleus as previously stated that hemoglobin is the most important element in the plasma of erythrocytes.

The hemoglobin molecule consists of globin, protoporfuin, and iron. Globin is formed around ribosomes whereas protoporphyrin is formed around mitochondria. Iron is obtained from transferrin. At the beginning of the nucleated erythrocytic cell, there is a transferrin receptor. Disturbances in the binding of iron to form hemoglobin will result in the formation of erythrocytes with small plasma (microcytes) and less hemoglobin in them (hypochrome). The failure of the cytoplasm of nucleated erythrocytes to bind Fe for the formation of hemoglobin can be caused by low levels of Fe in the blood. This can be caused by malnutrition, impaired absorption of iron (especially in the stomach), and increased iron requirements (pregnancy, bleeding, and so on).

The cause of failure of nucleated erythrocytes to bind iron can also be caused by low levels of transferrin in the blood. This is understandable because both nucleated and reticulocyte erythrocytes only have transferrin receptors, not fe receptors. It should be noted that only fe elemental can bind to transferrin and to form 1 ml of packed red cells, 1 mg of fe element is required. The best source of protein, vitamins, minerals, fat, and fiber, but soybeans are more often processed into food ingredients, namely tempeh or tofu, and used to make beverages such as soy milk. (Valentina et al. 2021)

Milk is a food product that is almost perfect in nutritional content and is highly recommended for consumption, especially by children who are in their infancy. The main component of milk is fat (3.9% is dominated by saturated fat); milk protein 3.4%; lactose 4.8%; ash 0.72%; and water 87.10%. Milk from these animals contains animal fat which can increase cholesterol levels so it is not recommended to consume it excessively, especially for someone who suffers from certain diseases and is allergic to animal protein. To meet these protein needs can be met with foods derived from soybeans. One of the processed soy products is soy milk.

Soy milk protein has almost the same amino acid composition as cow's milk so soy milk is often used as a substitute for cow's milk for those who are allergic to animal protein. (Budimarwanti 2017) Soy protein contains 18 amino acids, namely 9 types of essential amino acids and 9 types of nonessential amino acids. The essential amino acids include cystine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, tryptophan, and valine. The 6 nonessential amino acids include alanine, glycine, arginine, histidine, proline, tyrosine, aspartic acid, and glutamic acid. In addition, soy

protein is very sensitive to physical and chemical treatment. (Martono et al. 2016)

This is in line with the previous research conducted by Nurmalia Rizki and friends in 2022 entitled "The Effect of Soy Milk on Increasing Haemoglobin (Hb) Levels of Young Girls at SMA Negeri 1 Perhentian Raja Kampar" There was an increase in Hb levels in subjects given soy milk because milk Soybean contains 35-40% protein, 90% of which is stored in 2 forms of protein globulin, namely 11S glycinin and 75 β-conglycinin. Glycinin has an A (acidic) subunit and a B (basic) subunit, while β-conglycinin has α and β subunits. This protein contains all the essential amino acids so soy products are almost similar to animal-based foods in terms of protein quality, but with lower levels of saturated fat and no cholesterol. (Rizki and Wiji 2022)

Soy milk protein has an amino acid composition that is almost the same as cow's milk so soy milk can be used as a substitute for cow's milk for people who are allergic to animal protein. The weakness of soy milk is that it doesn't last long so the nutrition and taste change. Damaged soy milk is characterized by a change in smell, color, or taste, or the liquid thickens and then separates the water from the sediment of the soymilk. (Mawarni, Anggraini, and Jumari 2018)

The method of preserving soy milk so that the milk is not easily damaged and lasts longer is cooling and heating the milk. Preservation of milk by heating method can be done by pasteurization and sterilization. There are 3 common pasteurization methods for milk, namely: Low-Temperature Long Time (LTLT), High-Temperature Short Time (HTST), and Ultra High Temperature (UHT). (Mawarni et al. 2018)

Soy sauce can be served in its pure form, meaning without the addition of sugar and new flavors. You can also add sugar or flavor (essence/taste) such as mocha, pandan, vanilla, chocolate, strawberries, and others. The amount of added sugar is usually around 5-7 percent by weight of soymilk. To improve children's taste, the sugar content can be increased to 5 - 15 percent. But the recommended sugar content is 7 percent. A sugar content of 11 percent or more causes satiety quickly. (Koswara et al. 2017)

Liquid soy sauce can be made using simple technology and equipment that does not require high skills, or with modern technology in factories. Today many ways can be used to make liquid soy sauce with good results. Soymilk is stored at a maximum cold temperature of 10ºC or refrigerator temperature. The storage and transportation stage at a maximum temperature of 10ºC before consumption of soymilk is a critical control stage because there are opportunities for microbial growth if the temperature and time are. (Koswara et al. 2017)

CONCLUSIONS

Based on the results of the research and discussion that has been carried out, the conclusions of this study are. The average hemoglobin (Hb) level of anemic adolescent girls before being given treatment in the intervention group was 10.833, and in the control group was 10.987 in the work area of the Cihideung Health Center, Tasikmalaya City. The average hemoglobin (Hb) level of anemic adolescent girls after being given treatment in the intervention group was 13,200, and in the control group was 12,860 in the working area of the Cihideung Health Center, Tasikmalaya City. There are differences in hemoglobin levels between the intervention group and the control group in mild anemia of female adolescents in the working area of the Cihideung Health Center, Tasikmalaya City

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