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THE EFFECT OF GIVING TOMATO JUICE ON INCREASING HEMOGLOBIN LEVELS IN ADOLESCENT WOMEN

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ABSTRAK : PENGARUH PEMBERIAN JUS TOMAT TERHADAP PENINGKATAN KADAR HEMOGLOBIN PADA REMAJA PEREMPUAN

Anemia merupakan salah satu masalah gizi di negara berkembang termaksud Indonesia. Data Riskesdas 2018, menunjukkan Provinsi Lampung menduduki peringkat pertama di wilayah Sumatera dengan prevalensi anemia tertinggi sebesar 63% dan 24,3% diantaranya dialami oleh remaja putri (10-19 tahun). Akibat jangka panjang anemia pada remaja putri yaitu apabila remaja putri nantinya hamil, Tujuan dari penelitian ini mengetahui pengaruh pemberian jus tomat dan tablet Fe terhadap kenaikan kadar Hb remaja putri di SMP N 3Kecamatan Baradatu Kabupaten Way Kanan Porvinsi Lampung Tahun 2023.

Penelitian ini menggunakan desain penelitian *True-Exsperimental*, dengan rancangan *Two Group Pretest-Postest.* Dilaksanakan dari Januari sampai Juni di SMP N 3 Kecamatan Baradatu Kabupaten Way Kanan. Responden 60 orang remaja putri, Sebagian remaja putri kelompok intervensi yang mendapatkan tomat dan tablet Fe sejumlah 30 orang dan Sebagian remaja putri kelompok kontrol yang mendapatkan tablet Fe sejumlah 30 orang.

Berdasarkan penelitian dengan mengonsumsi jus tomat dan tablet Fe mampu meningkatkan kadar hemoglobin sebesar 0,89 gr/dl. Sedangkan kenaikan kadar hemoglobin dengan mengonsumsi tablet Fe sebesar 0,77 gr/dl. Dengan demikian dapat disimpulkan bahwa dengan mengonsumsi jus tomat dan tablet Fe mampu meningkatkan kadar hemoglobin lebih besar dibandingkan dengan hanya mengonsumsi tablet Fe. Kepada bidan dapat memberikan promosi kesehatan manfaat jus tomat dan tablet Fe melalui *banner* yang terpasang di sekolah, sehingga menarik minat remaja putri mengetahui manfaat jus tomat dan tablet Fe untuk mencegah anemia.

Kata kunci : Anemia, Hemoglobin, Tablet Fe, Jus Tomat.

ABSTRACT

Anemia is one of the nutritional problems in develop countries, including Indonesia. The 2018 Riskesdas data shows that Lampung Province is first ranked in the Sumatra region with the highest prevalence of anemia of 63% and 24.3% of them are experienced by adolscent (10-19 years).. The long-term consequences of anemia in adolescent girls are that if adolescent girls later become pregnant, the purpose of this study is to determine the effect of giving tomato juice and Fe tablets on the increase in Hb levels of adolescent girls in SMP N 3Baradatu District, Way Kanan Regency, Lampung Province in 2023.

The methode in this reseacrh is a True-Exsperimental design, with a Two Group Pretest-Postest design. Start from January to June at SMP N 3 Baradatu District, Way Kanan Regency. Respondents were 60 adolescent girls, some of the intervention group girls who get tomatoes and Fe tablets were 30 people and some of the control group girls who get Fe tablets were 30 people.

The results of statistic by consuming tomato juice and fe tablets can increase hemoglobin levels by 0.89 g / dl. While the increase in hemoglobin levels by consuming FE tablets by 0.77 g / dl. This it can be concluded that by consuming tomato juice and Fe tablets can increase hemoglobin levels greater than only taking Fe tablets. As information for midwife to give health promotion about benefits of tomato juice and Fe tablets with banner which is there at school, so that increase the adolscent habbit to know about benefit tomato juice and Fe tablets to anemia does not occur.

Keywords : Anemia, Hemoglobin, Fe Tablets, Tomato Juice.

INTRODUCTION

Adolescent anemia is a health problem. World Health Organization (WHO) in 2016 states that one in three women are not pregnant, equivalent to nearly 500 million women, suffer from anemia. In Indonesia, according to data from the 2013 National Health Research (Riskesdas), the anemia rate in women of childbearing age is 37.1%. The prevalence of anemia based on data from the World Health Organization (WHO) in 2015 was 40-88% of the world's population experiencing anemia. In Southeast Asia, 25-40% of young women experience severe and mild anemia. Based on Riskesdas data, in 2018 the prevalence of anemia increased to 48.9% compared to 2013 and amounted to 37.1% with the age group experiencing anemia ranging from 15-24 years and 25-34 years (Ministry of Health, 2018).

The 2018 Riskesdas data shows that Lampung Province is ranked first in the Sumatra region with the highest anemia prevalence of 63% and 24.3% of them are experienced by young women (10-19 years). In many studies on anemia among young women in various regions such as Semarang (Wibowo, Notoatmojo and Rohmani, 2013), Bengkulu, (Suryani, Hafiani and Junita, 2015), Lombok (Masthalina, Laraeni and Dahlia, 2015), Sidoarjo (Cholifah and Hadikasari, 2015), Jambi (Kalsum and Halim, 2016) , and Palu (Lewa, 2016) show a higher prevalence than national data. From all the studies mentioned above, according to WHO it is a public health problem in the moderate to severe category (WHO, 2011).

Data for the Way Kanan Regency itself is at In 2021 the coverage of adolescents who receive iron supplement tablets is only 30.3% of the target set at 52% (Dinkes Lampung, 2022). In the working area of the Baradatu Health Center UPTD efforts to prevent and treat anemia in young women already following the instructions from the government, namely by administering iron tablets for adolescents in school institutions. This activity is about health counseling or health checks regarding anemia which is carried out 4 times a year, or once every 3 months. That is carried out on the moon

March, June and November. Activities are carried out by means of counseling using media such as leaflets, Powerpoints and/or lectures as well as questions and answers. Each student received 20 Blood Supplement Tablets, and the officers also provided iron supplements to the school health unit (UKS) which could be given to students who needed iron tablets. (UPT Baradatu Health Center, 2022).

Based on the monitoring results of the Nutrition Implementing Staff (TPG) at the Baradatu Health Center in 2022, data found that 60 young women with anemia were attending Baradatu 3 Public Middle School (UPT Baradatu Health Center, 2022).

The condition of anemia in young women has implications for the health of young women now and in the future. Adolescent girls with anemia affect concentration and school memory, school attendance, physical growth and the onset of menarche, namely the development and interaction of the hypothalamus-pituitary-ovarian axis with the reproductive and endocrine system causes the onset of menarche. Typically, the age at onset of menarche ranges from 11-15 years. However, there are two main factors that cause this age to vary between individuals, time, genetics and environment, immune status from infection and morbidity, physical capacity and performance. If the condition continues, it will have implications for various kinds of health problems, including decreased immunity, decreased concentration, decreased achievement in learning, unfit and decreased productivity. (Ministry of Health, 2021).

Furthermore, the impact of anemia on young women can increase the risk of death when childbirth, premature birth, and low birth weight babies. pregnancy outcomes and maternal health. In pregnant women, anemia will increase the risk of giving birth to a baby with low birth weight (LBW), miscarriage, premature birth, the risk of bleeding before and/or during delivery which can cause the death of the mother and her baby. Babies in the womb can experience growth and development disorders, cannot reach optimal height and children become less intelligent, have low birth weight and overall increase in infant mortality. The implications of this condition in Indonesia can be seen from the high maternal mortality rate (MMR), infant mortality rate (IMR), LBW, stunting in toddlers in Indonesia compared to neighboring countries in Southeast Asia (UNDP, 2015).

WHO estimates 50% of sufferers Anemia is caused by a lack of iron in the body (WHO, 2016). This condition is influenced by, among other things, insufficient amount of iron in food, low absorption of iron, increased need, lack of blood, poor diet, socioeconomic status, presence of infectious diseases and low knowledge about iron. In addition, the presence of absorption inhibitors (inhibitors) and substances that increase the absorption (enhancer) of iron from food will affect the amount of iron that can be absorbed by the body. Substances that are classified as inhibitors include caffeine, tannins,

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oxalates, phytates, which are found in soy products, tea, and coffee, and phytate, which is found in wheat. Nutrients classified as enhancers are vitamin C which is found in oranges, papayas and certain animal protein sources, for example beef, chicken and fish. Ignorance of consuming food sources of iron with inhibitors will cause iron not to be absorbed by the body properly. And vice versa, consuming a source of iron with enhancers will increase the absorption of iron by the body.

The current program for treating anemia for young women is in the form of iron-containing iron-containing tablets, but there are problems where the tablets contain foods that can inhibit or increase iron absorption.

Based on the results of previous research conducted by Jenny Anna Siauta on the Effect of Giving Fe Tablets and Tomato Juice to Increase Hemoglobin Levels in Adolescents at SMK N 1 Mesuji Oki South Sumatra in 2018 The average Hb of adolescents before administration of Fe + Tomato Juice was 9.9 g% and after getting Fe tablets and tomato juice to 10.6 gr% there was an increase in Hb levels of 0.6867 points. Bivariate analysis showed that there was an effect of Fe tablets + tomato juice on increasing adolescent Hb levels. This research is in line with the research of Fitriani et al (2019) which was conducted on third trimester pregnant women. The average hemoglobin level before consuming tomato juice was 9.687 g/dl and after giving tomato juice the average hemoglobin level was 11.773 g/dl. There has never been a study in Lampung that looked at consumption patterns of foods that are inhibitors and enhancers of iron absorption in female adolescents

Iron tablet supplementation is

administration of iron folate in tablet form. The Ministry of Health of the Republic of Indonesia, the Director General of Public Health, issued a circular letter number HK 03.03/V/0595/2016 concerning Administration of Blood Supplement Tablets to Young Women and Women of Reproductive Age. Targeting children aged 12-18 years who are provided through educational institutions and women of childbearing age (WUS) aged 15-49 years in workplace institutions. Provision of TTD with a composition consisting of 60 mg of elemental iron (in the form of Ferro Sulfate, Ferro Fumarate or Ferro Gluconate) and 0.4 mg of folic acid. The implementation of administration of iron supplements previously was 1 (one) tablet per week and during menstruation was given 1 (one) tablet per day for 10 (ten) days, given by the government to young women to overcome the problem of iron nutritional anemia. Iron therapy can be combined with complementary therapies derived from herbs, one of which is tomato.

Iron is a substance that is difficult for the body to absorb, so vitamin C is needed so that iron can be absorbed optimally. Zulaikah, 2007, which states that giving iron and vitamin C supplements is more effective in increasing hemoglobin levels and red blood cell counts than giving iron or vitamin C alone.

One fruit that has vitamin C and beneficial compounds for health is tomato. Besides that tomatoes are also easy and cheap to get compared to other ingredients that contain vitamin C. The content of tomatoes in 180 grams is 24.66 mg of vitamin C, 0.49 mg of iron and 27 mcg of folic acid. (The George Mateljan Foundation,

2010).

Based on the results of previous research conducted by Jenny Anna Siauta on the Effect of Giving Fe Tablets and Tomato Juice to Increase Hemoglobin Levels in Adolescents at SMK N 1 Mesuji Oki South Sumatra in 2018 Fe and tomato juice became 10.6 gr%, there was an increase in Hb levels of 0.6867 points.

Based on this description, the researcher is interested to conduct a study entitled "The Effect of Giving Tomato Juice on Increasing Hemoglobin Levels in Young Girls at Baradatu 3 Public Middle School, Way Kanan Regency, Lampung Province in 2023".

RESEARCH METHODS

In this study using a type of quantitative research, using a research design*True-Exsperimental*. This research was conducted at SMPN 3 Baradatu, Right Way Population or referred to by the term universe or universe or the whole is a group of individuals who have the same characteristics, which may be investigated/observed (Imron & Munif, 2010). The population in this study were all 60 young women who had anemia at Baradatu Way Kanan 3 Middle School.

Table 1
Normality Test Results (*Test of Normallity)*

Score Value*Test*	Mark*Kolmogorov Smirnov*
Pretest Control Group Posttest	0,015
Control Group Pretest	0,010
Intervention Group Posttest	0,002
Intervention Group	0,010

Based on the table above it can be seen that the value*Kolmogorov Smirnov*pretest control group

0.015 and posttest control group 0.010 while the pretest value for the intervention group was 0.002 and the posttest for the intervention group was 0.010, meaning that all data had$p$ < 0.05. Thus it can be concluded that the data of the two variables in this study were not normally distributed. So do the test*Wilcoxon.*

The sample is part (subset) of the population selected in a certain way so that it can be considered representative of the population (Sastroasmoro and Ismael, 2008). The sample in this study were some of the young girls in the intervention group who received 30 tomatoes and Fe tablets and some of the control group girls who got a total of Fe tablets.
30 people

RESEARCH RESULTS

Characteristics of Respondents

Based on table 2 above, it can be seen that of the 30 research respondents, the mean or average hemoglobin level before being given the intervention was 11.46 gr/dl with the lowest or minimum hemoglobin level of 10.90 gr/dl and the results of the the highest or maximal hemoglobin of 11.8`0 gr/dl.

Table 2
Average hemoglobin level before consumption of tomato juice and Fe tablets in female adolescents

Variabel	N	Mean	Median	SD	Men	And x
Results Hemoglobin Kadar Before Consume Tomato Juice and Tablets Fe	30	11,46	11,50	0,27478	10,90	11,80

Table 3
Average hemoglobin level before consumption of Fe tablets in female adolescents

Variabel	N	Mean	Median	SD	Men	Max
Results Increase in Hemoglobin Levels After Consuming Tomato Juice and Fe Tablets	30	12,35	12,40	0,28009	12,00	13,00

Based on table 3 above, it can be seen that of the 30 research respondents, the mean or average hemoglobin level after being given the intervention was 11.49 gr/dl with the lowest or minimum hemoglobin level of 10.90 gr/dl and the highest or maximum hemoglobin level of 11.80 gr/dl.

Table 4
Comparison of Consumption of Tomato Juice and Fe Tablets with Fe Tablets on Hb Levels in Anemia Adolescent Girls

Hemoglobin Measurement Results	N	Mean Rank	Sum of Ranks	Asymp Sig (2- Tailed)
Group Intervention	30	15,50	465,00	0,000
Group Control	30	00,00	000,00	0,317

Based on table 4 above, you can known results*Wilcoxon* Asymp value is obtained. Sig or*p value* 0.000 <α (0.05) means that Ho is rejected and Ha is accepted, which means that there is an effect of giving tomato juice to increasing hemoglobin levels in young women at SMPN 3 Baradatu, Way Kanan Regency, Lampung Province in 2023.

DISCUSSION

Univariate analysis

Average hemoglobin level before consumption of tomato juice and Fe tablets in female adolescents

Based on the research that has been conducted by Jenny Anna Siauta on the Effect of Giving Fe Tablets and Tomato Juice to Increase Hemoglobin Levels in Adolescents at SMK N 1 Mesuji Oki South Sumatra in 2018 The average Hb of adolescents before administration of Fe + Tomato Juice was 9.9 g%. While this research was conducted at Baradatu Way Kanan 3 Negri Middle School with 30 young female respondents. Based on the results of taking the sample before being given Fe Tablets and Tomato Juice, the mean value or average hemoglobin level was 11.46 gr/dl from 30 respondents. hemoglobin in it (hypochrome). The failure of the cytoplasm of the nucleated erythrocyte cells to bind Fe for the formation of hemoglobin can be caused by low levels of Fe for

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the formation of hemoglobin which can be caused by low levels of Fe in the blood (Azhar 2009 in Novyriana 2019).

In the absorption and metabolism of iron, vitamin C reduces ferric to ferrous in the small intestine so that it is easily absorbed. Vitamin C inhibits hemosiderin which is difficult to mobilize to release iron when needed. Absorption of iron in the non-heme form increases fourfold if vitamin C plays a role in transferring iron from transferrin in the plasma to liver ferritin. Vitamin C plays a role in the formation of hemoglobin, thereby accelerating the healing of anemia. Apart from vitamin C, other substances that help absorb iron are minerals and protein. Vitamin C in tomato juice which is consumed together with Fe tablets is proven to increase hemoglobin levels.

The average hemoglobin level after consumption of tomato juice and Fe tablets in female adolescents

Based on the research conducted in Baradatu Way Kanan 3 Negri Middle School. The results of giving consumption of tomato juice and Fe tablets to teenage girls for 28 days resulted in an average value of increasing hemoglobin levels of 12.35 gr/dl. Meanwhile, in the research conducted by Jenny Anna Siauta on the Effect of Giving Fe Tablets and Tomato Juice to Increase Hemoglobin Levels in Adolescents at SMK N 1 Mesuji Oki, South Sumatra, in 2018 The average Hb for teenagers after getting Fe tablets and tomato juice is 10.6 gr/dl.

This is consistent with the theory that anemia is defined as a condition in which a low concentration of hemoglobin (Hb) or hematocrit (Ht) based on a threshold value of less than 12 gr/dL is declared to have anemia (WHO, 2011). Anemia is a problem of malnutrition because most of the causes of anemia are caused by a lack of iron in the body due to the behavior of eating inadequate sources of iron (WHO, 2016).

In the absorption and metabolism of iron, Vitamin C reduces ferric to ferrous in the small intestine so that it is easily absorbed. Vitamin C inhibits hemosiderin which is difficult to mobilize to free iron if needed. Absorption of iron in the non-heme form increases fourfold if vitamin C plays a role in transferring iron from transferrin in the plasma to liver ferritin. Vitamin C plays a role in the formation of hemoglobin, thereby accelerating the healing of anemia. Apart from vitamin C, other substances that help absorb iron are minerals and protein. Vitamin C in tomato juice which is consumed together with Fe tablets is proven to increase hemoglobin levels.

Average hemoglobin level before consumption of Fe tablets in female adolescents

Based on research results can It is known that from 30 young female respondents who were taken at Baradatu Way Kanan 1 Public Middle School, before taking Fe tablets, the mean or average hemoglobin level was 11.49 gr/dl.

This is in accordance with the theory that Anemia is defined as a condition in which a low concentration of hemoglobin (Hb) or hematocrit (Ht) is based on a threshold value of less than 12 gr/dL, indicating anemia (WHO, 2011). Anemia is a problem of malnutrition because most of the causes of anemia are caused by a lack of iron in the body due to the behavior of eating inadequate sources of iron (WHO, 2016).

In the absorption and metabolism of iron, vitamin C reduces ferric to ferrous in the small intestine so that it is easily absorbed. Vitamin C inhibits hemosiderin which is difficult to mobilize to release iron when needed. Absorption of iron in the non-heme form increases fourfold if vitamin C plays a role in transferring iron from transferrin in the plasma to liver ferritin. Vitamin C plays a role in the formation of hemoglobin, thereby accelerating the healing of anemia. Apart from vitamin C, other substances that help absorb iron are minerals and protein. Vitamin C in tomato juice which is consumed together with Fe tablets is proven to increase hemoglobin levels.

The average hemoglobin level after consumption of Fe tablets in female adolescents

Based on the results of the study, out of 30 female adolescent respondents who were admitted to SMP Negeri 3 Baradatu, Way Kanan Regency, after taking Fe tablets for 28 days, the mean value or average hemoglobin level was 12.26 gr/dl. This shows an increase in levels hemoglobin that occurs in respondents so that it can be stated that respondents who have consumed Fe tablets once a day for 28 days have normal hemoglobin levels.

This research is in line with research conducted by (Yuanti, 2020) entitled The Effect of Giving Fe Tablets on Increased Hemoglobin Levels in Adolescents at Bina Karya Mandiri Vocational School in Bekasi in 2018. The target is 38 respondents who have anemia with an average hemoglobin level before being given treatment by giving Fe tablets 10.595 gr/dl. Then the 38 adolescents will be given treatment/intervention for one month by administering Fe tablet supplements 200mg/day with the rule of drinking 1x1 day.

After the intervention was carried out by giving Fe, it was also known that the average Hb level of female students was 12.14 gr/dl.

Bivariate Analysis

Effect of Consumption of Tomato Juice and Tablets Fe with Fe Tablets Against Hb Rate In Young Women

In the absorption and metabolism of iron, vitamin C reduces ferric to ferrous in the small intestine for easy absorption. Vitamin C inhibits the hemosiderin difficult to mobilize to release iron if needed. Absorption of iron in the non-heme form increases fourfold if vitamin C plays a role in transferring iron from transferrin in the plasma to liver ferritin. Vitamin C plays a role in the formation of hemoglobin, thereby accelerating the healing of anemia. Apart from vitamin C, other substances that help absorb iron are minerals and protein. Vitamin C in tomato juice which is consumed together with Fe tablets is proven to increase levels.

Tomatoes are a superior source of vitamin C, because 100 grams of tomatoes can meet 20% or more of the daily requirement of vitamin C. In addition, tomatoes are also a good source of vitamin A, because 100 grams of tomatoes can provide 10-20% of the daily requirement of vitamin A. Tomato juice contains vitamins and minerals quite complete. From 100 grams of tomato juice you will get 7 mg of calcium, 15 mg of phosphorus, iron 0.9 mg, sodium 230 mg and potassium 230 mg. While the vitamin found in 100 grams of tomato juice is vitamin A (1,050 IU), vitamin B1 (0.05 mg) vitamin B2 (0.03 mg) and vitamin C (16 mg) (People, Dian, 2008 in Novyriani 2019).

Based on the results of research that conducted at Baradatu 3 Public Middle School, Way Kanan Regency, which was given for 28 days with 30 young female respondents, it was found that the mean or average hemoglobin level before being given intervention (tomato juice and Fe tablets) was 11.46 gr/dl and after being given the intervention the value of Hb levels was 12.35 gr/dl. Experienced an increase of 0.89 gr/dl.

Research conducted by Jenny Anna Siauta on the Effect of Giving Fe Tablets and Tomato Juice to Increase Hemoglobin Levels in Adolescents at SMK N 1 Mesuji Oki South Sumatra in 2018 Average the average adolescent Hb before administration of Fe + Tomato Juice was 9.9 gr% and after receiving Fe tablets and tomato juice it became 10.6 gr%, there was an increase in Hb levels of 0.7 gr/dl.

Based on research conducted by Jenny Anna Siauta in 2018, after being given the intervention of tomato juice and Fe tablets, the hemoglobin level increased by 0.7 gr/dl, while the research that was being carried out after the intervention of tomato juice and Fe tablets increased by 0.89 gr. /dl. This study both experienced an increase after consuming tomato juice and Fe tablets, but there was a difference in the increase in hemoglobin levels. This is influenced by several factors including the presence of substances that inhibit the absorption of iron such as tannins.

The effect of giving Fe tablets to increasing Hb levels After being given treatment for 28 days, namely giving FE tablets to 30 female adolescents obtained an average Hb level of female students who were anemic, the mean difference between before and after administration of Fe tablets was 11.49 gr/dl and after consumption of Fe tablets was 12.26 gr/dl, an increase of 0.77 gr/dl etc. p value = 0.000, it can be concluded that there is a significant effect between the administration of Fe tablets on the increase in Hb levels in female students who are anemic.

As for previous research, it describes the results of research on the influence of influence administration of Fe tablets to young women. Based on the results of the study, it was found that the average value of hemoglobin before being given the fe table was 10.595 gr/dl. After the intervention by giving Fe, it was also known that the average Hb level of female students is 12.14 gr/dl. Administration of Fe tablets was carried out for 30 days with 38 respondents, an increase of 1.54 gr/dl (Yuanti, 2020).

Based on research conducted by Yuanti in 2020, the effect of giving Fe tablets to respondents experienced a significant increase in hemoglobin levels, namely 1.54 gr/dl. When compared with research that is being carried out, the increase in hemoglobin levels is 0.77 gr/dl. The difference in the value of the increase in hemoglobin levels is influenced by several factors including diet and low iron content in food.

The results of this study are in accordance with the theory who said that iron (Fe) tablets were tablets for supplementation for the prevention of nutritional anemia containing 200 mg ferrosulfate or the equivalent of 60 mg elemental iron and 0.20 mg folic acid. The iron tablet preparation consists of three components, namely: Ferrous sulfate / ferrous sulfate (dry), iron content 30%, Fero fumarate, iron content 33% and provides fewer side effects, Ferogluconate, the iron content is only small, namely 11.5% and consequently causes fewer gastrointestinal effects. 6 Fe tablets will be effective

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as one of the nutritional improvements, if taken according to the directions for use. As for one of the rules for using Fe tablets, drink one tablet of iron supplement (TTD) once a week or as needed and it is recommended to take one tablet during menstruation.

Based on research that has been done to increase hemoglobin levels by consuming tomato juice and fe tablets has a better impact when compared to only consuming fe tablets. Both of these methods were carried out with the same treatment, namely to 30 young female respondents for 28 days. However, an increase in hemoglobin levels by consuming tomato juice and Fe tablets was able to increase hemoglobin levels by 0.89 gr/dl. While the increase in hemoglobin levels by consuming Fe tablets was 0.77 gr/dl. This is influenced by the content of vitamin C found in tomato juice so that it helps the absorption of iron in Fe tablets.

Thus it can be concluded that consuming tomato juice and Fe tablets is very beneficial a large effect on respondents who have anemia, this will be more effective if it is also supported by good iron absorption in the body and supported by a good diet and nutritional intake.

CONCLUSION

It is known that consuming tomato juice and Fe tablets can increase hemoglobin levels by 0.89 gr/dl. While the increase in hemoglobin levels by consuming Fe tablets was 0.77 gr/dl. Thus, consuming tomato juice and Fe tablets can increase hemoglobin levels more than consuming only Fe tablets.

SUGGESTION

As information material for respondents that regularly consuming tomato juice can increase hemoglobin levels in young women so as to prevent anemia in young women, and it is hoped that young women will consume tomato juice which contains high vitamin C which can reduce ferric to ferrous in the small intestine so that it is easily absorbed. Vitamin C in tomato juice which is consumed together with Fe tablets is proven to increase hemoglobin levels.

As information material for midwives that consuming tomato juice can increase hemoglobin levels in female adolescents, it is hoped that midwives can provide health promotion and knowledge about the benefits of tomato juice to prevent anemia through*banner* or banners posted at schools or UKS so that it is easy and interesting for young women to know the benefits of tomato juice and Fe tablets to prevent anemia.

Can add insight into research furthermore and can be used as reference material to conduct the same research, and it is hoped that future researchers who will conduct the same research can develop research using a research design*true experiment* with approach*pretest posttest with control group design* so that it can compare its success rate with the control group so that even better research results are obtained.

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