The Relationship of Menstrual Pattern with The Incidence of Anemia in Adolescent Girls at SMA PAB 5 Klumpang, Deli Serdang in 2021

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Article Info

ABSTRACT

In Indonesia the percentage of women experiencing anemia increased to 48.9% with its proportion in the age group of 15-24 years. This clearly reinforces that adolescent health is crucial in the success of health development, especially in the effort to print the quality of the nation's future generations. This study aimed to determine the relationship of menstrual pattern to the incidence of anemia in adolescent girls of SMA PAB 5 Klumpang Deli Serdang Tahun 2021. This is an analytical survey research design with cross sectional approach. The sample was used purposive sampling with a total of 51 people from a population of 69 people. Sampling with non-random sampling technique used a questionnaire. Hb level test was done by using Easy Touch digital hemometer. Univariate test results of menstrual pattern based on menstrual cycles the majority of adolescents experience a normal menstrual cycle amount 27 people (47.1%), while based on the length of menstruation the majority of girls experience menstrual abnormalities amount 28 people (54.9%). The results of bivariate test with chi square test showed there was a relationship between menstrual patterns both from the menstrual cycle (p-value = .003 <.05) and menstrual time (p-value = 0.000 <.05) with the incidence of anemia in adolescent girls of SMA PAB 5 Klumpang Deli Serdang Tahun 2021. The conclusion shows that there is a significant relationship between menstrual patterns with the incidence of anemia in adolescent girls of SMA PAB 5 Klumpang Deli Serdang. It is expected that adolescent girls should pay attention to food intake and meet iron needs from natural sources.

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1. INTRODUCTION

Anemia, or a lack of red blood cells, is fairly common in women, particularly adolescents. Anemia is a medical condition in which the number of red blood cells or hemoglobin in the blood is lower than normal. Normal hemoglobin levels are found in both men and women. It is defined in men as a hemoglobin level of 14-16 grams/100 ml, and in women as a hemoglobin level of 12-15 grams/100 ml. In the human body, a state of deficiency or excess of something can actually increase abnormalities. Anemia, for example, occurs when our bodies do not produce enough red blood cells or hemoglobin (an oxygen-carrying protein) (Sari, 2015).

Anemia is a worldwide nutritional issue that affects both developing and developed countries. Anemia affects an estimated two billion people worldwide, with Asia and Africa having the highest prevalence. Anemia is ranked as a 10 health problem by the World Health Organization (WHO). Women of childbearing age, pregnant women, school-age children, and adolescents are the groups most at risk of anemia in the modern .

Anemia in adolescent girls is still quite common; according to WHO (2015), the global prevalence of anemia ranges between 50 and 80 percent. Anemia affects 26.5 percent of adolescent girls (aged 15-19 years) and 26.9 percent of fertile women. In Indonesia, the prevalence of anemia in adolescent girls was 18.22 percent in 2015. Meanwhile, the Ministry of Health has set a target of 30%. That means there are still a lot of teenagers who are anemic, especially those between the ages of 15 and 21. Anemia is a public health problem throughout the world, according to the World Health Organization (WHO) globally, cases of anemia affect 1.62 billion people or correspond to 24.8% of the population (Aulia, 2017).

Based on Basic Health Research data (Riskesdas, 2018) that the percentage of women who experience anemia has increased compared to the results of Basic Health Research data in 2013 which was 37.1%. From 2018 data, the number who experienced anemia was the most at the age of 15-24 years at 84.6%, aged 25-34 years at 33.7%, aged 35-44 years at 33.6% and aged 45-54 years at 24%. Anemia in young women from 37.1% in Riskedas 2013 which actually increased to 48.9% in Riskesdas 2018, with the proportion of anemia in the age group 15-24 years and 25-34 years. These things clearly reinforce that adolescent health will determine the success of health development, especially in an effort to print the quality of the nation's next generation in the future (Kementrian Kesehatan RI, 2018)

From the results of randomized studies in various regions in Indonesia, the prevalence of anemia in adolescents is quite diverse. The prevalence of anemia in East Jakarta Senior High School 17.2%, Central Java Middle and High School 57.4%, and East Java 80.2%, Tangerang High School 54%, Madura Madrasa School 48.1%, East Java Junior High School 26 %, and 26.7% in SD Tangerang. A study conducted in Bogor among female students found that the prevalence of anemia was 25% and that of high school students was 35%. The prevalence of iron deficiency is higher than anemia, which is 42% and 45%, respectively. Based on Semarang City Health Office data, as many as 234,095 adolescents in Semarang, 12,100 of whom are anaemic. Most cases of anaemia were found in Manyaran Health Center, namely 870 people. From data from the Manyaran Health Center regarding the prevalence of anaemia among adolescent girls in the Manyaran Health Center target schools, namely Nusa Bhakti Vocational School and Dian Kartika Vocational School in January, there were 35 students, in February 32 students, March 32 students, April 14 students, May 19 students, and June 16 students (Mularsih, 2017).

The incidence of anemia is the most common problem in adolescents. This is due to cognitive impairment, low academic ability and decreased physical capacity. In adolescents who are working, anemia will reduce work productivity, while in adolescents who are still in

school it will reduce academic ability (Adinda, 2020a). Especially for female adolescents, the problem of anemia will continue after adolescence, because they will experience menstruation, followed by the process of pregnancy and breastfeeding . The results of the research Farinendya (2019) showed that the level of protein adequacy (p = 0.031) and vitamin C (0.020) with the incidence of anaemia in adolescent girls were related, as well as the level of iron adequacy (p = 0.416).

One of the causes of iron deficiency anemia is blood loss caused by one of the causes of menstruation in women every month. Menstrual patterns in adolescent girls include the menstrual cycle and the length of menstruation. The menstrual cycle is the distance between the first day of menstrual bleeding and the first day of the next menstruation. The first day of menstrual bleeding is referred to as the first day of the menstrual cycle. The length of the menstrual cycle varies widely up to 2 years after menarche. The length of a normal menstrual cycle ranges from 21-35 days. In general, the menstrual cycle will occur regularly when women are adults and enter the fertile age, which is 19-39 years (Suryani, 2015) .

Menstrual pattern is a series of menstrual processes consisting of the menstrual cycle, duration of menstrual bleeding and dysmenorrhea. The menstrual cycle is the time from the first day of menstruation until the arrival of the next menstrual period. Menstrual cycles in women normally range from 21-35 days and only 10-15% have a menstrual cycle of 28 days with a menstrual period of 3-5 days, some are 7-8 days. Every day change pads 2-5 times. The length of the menstrual cycle is influenced by age, weight, physical activity, stress levels, genetics and nutrition (Wiknjosastro H, 2009).

Young women are more likely to experience anemia than young men, this is because young women experience menstruation every month. The increase in the need for iron is due to the acceleration of growth and menstruation so that it is in dire need of higher nutrients, especially iron .

Another factor that causes women to be prone to anemia is diet. By reason of fear of fat, sometimes women go on a diet blindly. Women tend to eat less and don't want to eat meat. Without realizing it, a diet that doesn't necessarily make you lose weight can actually cause a lack of iron intake from food (Suryani, 2015). When food intake is lacking, a lot of iron reserves are dismantled; this situation can accelerate the occurrence of anaemia(Utami, 2015; Agus, 2015).

The results of research conducted by Dewi (2017) in the working area of the Semplak Simongan Health Center Semarang found that there were 69.2% of respondents who had poor eating behavior in preventing anemia compared to those who had good eating behavior of 30.8%. Most of the respondents have dietary restrictions by not consuming animal side dishes such as meat, eggs, fish, shrimp and seafood for reasons of having allergies, respondents also do not get used to eating 3 times a day and skip breakfast, do not regularly consume vegetables and fruits for reasons do not like vegetables not every day the family provides these foods. In addition, respondents actually consume tea every day. Though it is known that tea contains tannins that can inhibit the absorption of iron in the body (Dewi, 2017).

The number of young women who have bad eating habits is probably caused by environmental factors in the family and school environment who love to snack on snacks, while fruit or vegetable groups containing vitamins are rarely consumed so that young women are low in iron, calcium, vitamin A, vitamin C and vitamin C. so on, and many young women of SMAN 3 Kendari who have the habit of eating less than three times a day and many young women of SMAN 3 Kendari who do not eat breakfast(Kaimudin, 2017) .

The results of a preliminary survey conducted by interviewing several students of SMA PAB 5 Klumpang have never had hemoglobin measurements taken, so they do not know what their hemoglobin levels are. Here the researchers also conducted a preliminary survey by directly checking the respondent's Hb using a digital Hb to 5 respondents who were taken randomly the majority of their menstrual duration > 8 days, the results obtained were that the Hb of 5 students were student 1: 10.1 gr%, student 2: 9.5 gr% , student 3: 9.8 gr%), student 4: 10.8 gr%, student 5: 11.2 gr% and it turns out that 4 students have mild anemia and there are signs of anemia such as pale and lethargic.

Based on the description above, the authors are interested in conducting research on young women with the title "The Relationship of Menstrual Patterns with the Incidence of Anemia in Young Women in SMA PAB 5 Klumpang Deli Serdang in 2021"

2. RESEARCH METHODE

This type of research is an analytical survey research with a cross sectional approach. This research was conducted at SMA PAB 5 Klumpang, Deli Serdang, Jalan Klambir 5, Deli Serdang. The reason for the research at SMA PAB 5 Klumpang was based on an initial survey conducted by researchers in March 2021 by measuring the Hb of 5 students taken randomly, the majority of them experiencing mild anemia accompanied by pale and lethargic. The time required to complete this research starts from May to July 2021.

The population in this study were all young women at SMA PAB 5 Klumpang Deli Serdang Medan for the academic year 2020/2021 with a population of 69 people. The sample taken in this study was using the purposive sampling method. Based on the consideration of time, cost, and research staff, class X and XI were taken, namely class X IPA = 16 people; X IPS = 11 people; XI IPA = 14 people; XI IPS = 10 people; the total number of samples is 51 people. The selection of these four classes was based on the incidence of anemia in adolescent girls in that class. To take a sample in each selected class, it was done by collecting all the young women, then measurements were made using an Hb measuring device and a questionnaire that had been prepared after that followed by counseling to young women.

Data collection is a process of collecting primary and secondary data, in a study. Data collection is a very important step, because the data collected will be used to solve the problem being researched or to test the hypotheses that have been formulated (10). Primary data is data on the characteristics of respondents, namely data obtained directly by researchers from research subjects. Primary data in this study include measuring hemoglobin and filling out questionnaires to determine menstrual patterns. Secondary data is data obtained by researchers from various existing sources. Secondary data obtained from SMA PAB 5 Klumpang Deli Serdang. Tertiary data obtained from various references that are very valid journals, the Ministry of Health of the Republic of Indonesia, the Health Service, WHO and books.

Univariate analysis is used to describe the data performed on each variable from the research results. The description of the respondent's menstrual cycle variables and the incidence of anemia in this study is presented in the form of a frequency distribution table and presentation (Nur, 2017).

Bivariate analysis to determine the relationship (correlation) between the independent variable (independent variable) and the dependent variable (dependent variable). To prove the existence of a significant relationship between the independent and the dependent variable, Chi-square analysis was used, at the statistical significance limit of the p value calculation (0.05). If the results of the calculation of $p < p$ value (0.05) then it is said

that Ho is rejected and Ha is accepted, meaning that the two variables have a statistically significant relationship (Nur, 2017).

3. RESULT AND ANALYSIS

Table1. Frequency distribution of characteristics based on the age of adolescent girls in SMA PAB 5 Klumpang Deli Serdang.

Variable	f	Presentase (%)
Age		
15 years	11	21,6
16 years	26	51,0
17 years	12	23,5
18 years	1	2,0
19 years	1	2,0
Menstrual Cycle		
Normal	27	47,1
Abnormal	24	52,9
Menstrual Length		
Normal	23	45,1
Tidak Normal	28	54,9
Incidence of Anemia		
No Anemia	35	68,6
Mild Anemia	16	31,4
Moderate Anemia	0	0
Severe Anemia	0	0

In table 4.1 above, it can be concluded that most of the samples in this study indicate that more are in the 16 year age group, as many as 26 people (51%).

The results of the study on the distribution of the frequency of menstrual cycles based on menstrual patterns in adolescent girls in SMA PAB 5 Klumpang Deli Serdang majority had a normal menstrual cycle, which were 27 people (47.1%). The results of the study on the distribution of the frequency of menstrual periods based on menstrual patterns in adolescent girls in SMA PAB 5 Klumpang Deli Serdang the majority had abnormal menstrual periods, as many as 28 people (54.9%).

Based on the results of research on the incidence of anemia in adolescent girls at SMA PAB 5 Klumpang Deli Serdang, the majority were not anemic as many as 35 people (68.6%).

Table 2. Relationship between the menstrual cycle and the incidence of anemia in adolescent girls at SMA PAB 5 Klumpang Deli Serdang

Menstrual Cycle	Incidence of Anemia				Total		Asymp Sig
	Mild Anemia		No Anemia				
	f	%	f	%	f	%	
Abnormal	13	25,5	11	21,6	24	47,1	0,003
Normal	3	5,9	24	47,1	27	52,9	
Total	16	100	35	100	51	100	

Based on the results of the study of the relationship between the menstrual cycle and the incidence of anemia in SMA PAB 5 Klumpang Deli Serdang that of 51 young women there were 27 people (52.9%) had normal menstrual cycles. Of this number, the majority of young women did not experience anemia as many as 24 people (47.1%). As for the teenage girls who experienced abnormal menstrual cycles as many as 24 people (47.1%), and of this number, the majority of young women experienced mild anemia as many as 13 people (25.5%).

Based on the results of statistical tests using Chi square, the results obtained sig-p = 0.003 <0.05 which is seen in continuity correction where Ho is rejected and Ha is accepted, which means that there is a significant relationship between the relationship between the menstrual cycle and the incidence of anemia in adolescent girls at SMA PAB 5 Klumpang Deli Serdang in 2021.

Table 3. Relationship between Menstruation Length and Anemia Incidence in Adolescent Girls at SMA PAB 5 Klumpang Deli Serdang

Menstruation Length	Incidence of Anemia				Total		Asymp Sig
	Mild Anemia		No Anemia				
	f	%	f	%	f	%	
Abnormal	16	31,4	12	23,5	28	54,9	0,000
Normal	0	0	23	45,1	23	45,1	
Total	16	100	35	100	51	100	

Based on the results of the study of the relationship between the length of menstruation and the incidence of anemia in SMA PAB 5 Klumpang Deli Serdang that of 51 young women, 28 (54.9%) had abnormal menstrual periods.

Of this number, the majority of young women experienced mild anemia as many as 16 people (31.4%). As for the teenage girls who experienced normal length of menstruation as many as 23 people (45.1%), of that number, all young women did not experience anemia, namely 23 people (45.1%).

Based on the results of statistical tests using Chi square, the results obtained sig-p = 0.000 <0.05 which is seen in continuity correction where Ho is rejected and Ha is accepted, which means that there is a significant relationship between the length of menstruation and the incidence of anemia in adolescent girls at SMA PAB 5 Klumpang. Deli Serdang

4. DISCUSSION

The menstrual cycle is the time from the first day of menstruation until the arrival of the next menstrual period. The first day of menstrual bleeding is referred to as the first day of menstruation. A normal woman's menstrual cycle is 21-35 days. Heavy blood loss due to menstruation in adolescents or women can cause anemia and the symptoms caused by anemia vary, namely fatigue, weakness, lack of energy, and feeling of lightheadedness, difficulty concentrating, and decreased appetite. Another factor that causes women to be prone to anemia is diet. By reason of fear of fat, sometimes women go on a diet blindly. Women tend to eat less and don't eat meat. Without realizing it, a diet that does not necessarily make weight loss can actually lead to a lack of iron intake from food. This

description can explain that diet can affect the menstrual cycle, this is related to changes in steroid hormone levels which are the main factors in regulating the cycle .

Akib (2017) study found that 70% of respondents, or 42 persons, were anemic, while 30% of respondents were not anemic. The average respondent's hemoglobin level is 11.19g/dL, which is lower than the typical value for teenage females, which is 12g/dL. Anaemia can affect the menstrual cycle in a woman. Sufficient haemoglobin levels or someone who is not anaemic will help the regularity of the menstrual cycle in women. On the other hand, a lack of iron in the body can cause low haemoglobin levels, which in turn causes many complications in women (Kristianti, 2015).

The menstrual pattern is a series of menstrual processes that consists of the menstrual cycle, duration of menstrual bleeding and amenorrhea. The menstrual cycle is from the first day of menstruation until the arrival of the next menstrual period. While the menstrual cycle in women normally ranges from 21-35 days and only 10-15% have a menstrual cycle of 28 days with a menstrual period of 3-5 days, some are 7-8 days. Every day change pads 2-5 times. The menstrual cycle length is influenced by age, weight, physical activity, stress levels, genetics, and nutrition (Utami, 2015).

According to the researcher's assumption, most of the young women of SMA PAB 5 Klumpang Deli Serdang experience menstrual cycles between 21-35 days which are still considered normal. For some students who experience irregular menstrual cycles who tend to experience anemia, it can be influenced by a lack of good nutritional intake such as iron and other nutrients needed during the menstrual cycle, solid physical activity and can also be due to hormonal factors. Adolescent girls have a higher risk of anemia than young men. This is because women experience menstruation every month. Heavy blood loss due to menstruation in adolescents or girls can cause anemia, which will increase the body's need for iron, because iron is needed to make new red blood cells. The need for iron and other nutritional intakes plays an important role in influencing the growth and function of the reproductive organs. Women who have inadequate nutritional intake have a risk of menstrual cycle disorders caused by disruption of growth and development of the reproductive system so that good nutritional intake is needed by consuming a balanced diet (Adinda, 2020b).

Some young women also have abnormal menstrual cycles but do not experience anemia this is because their iron intake is quite good. The length of the menstrual cycle can be influenced by a person's age. Menstrual cycle disorders are usually found in the early and late reproductive periods, ie before the age of 19 years, after the age of 39 years. Hormones are one of the causes of menstrual cycle disorders. After menstruation, increased levels of estrogen cause negative feedback, thereby reducing the release of FSH. Towards the middle of the cycle, higher estrogen levels elicit a positive feedback loop causing a sudden high release of LH that induces ovulation. If fertilization does not occur, the corpus luteum will degenerate so that progesterone and estrogen levels drop. The result is that menstruation occurs and FSH levels rise to start a new menstrual cycle. Failure of this sequence of events leads to anovulation and abnormal cycles. Stress, heavy physical activity, and inadequate or excess nutritional intake such as obesity can also cause menstrual cycle disorders to become abnormal .

Long Menstruation Relationship with Anemia Incidence

The menstrual pattern is a series of menstrual processes including the menstrual cycle, the length of menstruation, and the amount of blood that comes out during menstruation.

One of the factors that cause normal menstrual patterns is the early age of menarche. When a teenager experiences his first menstruation, it means that his reproductive hormones are starting to function (Yunarsih, 2015).

Based on the length of menstruation in adolescent girls at SMA PAB 5 Klumpang Deli Serdang, the majority have an abnormal length of menstruation than the length of normal menstruation. From these results, it is evident that in adolescent girls with a long menstrual period that lasts more than 8 days and a short menstrual cycle (less than 28 days) it is possible to lose iron in higher amounts than those with a normal menstrual pattern (Hanifah , 2018).

In accordance with Hanifah's research (2018), based on the results of statistical tests using the Spearman Rank test, the relationship between the length of menstruation and the incidence of anemia obtained a significant level value of 0.006 < 0.05, so there is a relationship between Menstruation Length and the Incidence of Anemia in Adolescent Girls Class XI MTs Zainul Hasan Genggong. From this, it shows that the longer the menstruation period, the higher the risk of anemia.

According to the researcher's assumption, the majority of adolescent girls from SMA PAB 5 Klumpang Deli Serdang experience an abnormal length of menstruation, which is more or less than 3-8 days, which tends to be anemic so that young women need more iron which is lost during menstruation. This is because the amount of blood lost during one menstrual period ranges from 20-25cc, the iron loss ranges from 12.5-15mg/month or approximately 0.4-0.5 mg/day and when coupled with basal loss the total amount of iron lost was 1.25 mg/day. If the blood that comes out during menstruation is very large, it will tend to be anemic, therefore good nutrition is needed, especially iron intake to overcome anemia in adolescents .

The results of Yunarsih (2015) research show that there are three teenage girls who have abnormal menstrual patterns who experience excessive bleeding either from the length of menstruation or the amount of blood that comes out during menstruation. In the menstrual pattern, adolescents have an anovulatory menstrual cycle where the process depends on hormonal work. The results of Sholicha (2019) research show that A person who has a normal menstrual cycle will lose less blood than someone who has an abnormal menstrual cycle. Menstrual cycles classified as abnormal allow for blood loss, which is followed by iron loss, resulting in anemia.

In the teenage girls of SMA PAB 5 Klumpang Deli Serdang, there are some who experience an abnormal length of menstruation but do not experience anemia this is due to several factors that affect the length of a woman's menstruation, namely the length of menstrual bleeding is determined by the power of wound healing or regeneration power. Regeneration is reduced in infections, myomas, polyps, and carcinomas. Variations in sex hormone levels are thought to be related to the pattern of length of menstruation, some of the hormones of the menstrual cycle affect the proliferation and shedding of the endometrial lining of the uterus. During the follicular phase, endometrial cells proliferate under the influence of estrogen, but after ovulation, progesterone secretion stimulates additional morphological changes in the endometrium.

Efforts to overcome nutritional anaemia are prioritized for vulnerable groups, namely pregnant women, toddlers, school-age children and women of childbearing age, including young women and female workers. The occurrence of iron deficiency in women, among others, is due to the very small amount of iron absorbed, insufficient iron intake due to low bioavailability of foods containing iron or increased iron requirements, growth period and during menstruation (Barbara MAD, 2019).

Following the ovulatory cycle, menstruation most often results from progesterone withdrawal, which induces events involving vasoconstriction, cytokine changes in the

endometrium, and cell death. Based on the research above, it is known that the length of the menstrual period is also influenced by the regeneration power and variations in sex hormones so that women experience bleeding in varying times. This may be the cause of the relationship between the length of menstruation in adolescent girls.

The Relationship between Menstrual Patterns and the Incidence of Anemia in Adolescent Girls

Menstrual patterns greatly affect the incidence of anemia in adolescent girls at SMA PAB 5 Klumpang Deli Serdanghal this is due to the nutritional intake factor of young women who are still lacking and even deficits such as iron and other nutrients needed during menstruation. Therefore, adolescents are expected to maintain a nutritious diet because it will have an impact on anemia. The impact that often occurs in young women is a lack of rest and can reduce learning concentration, interfere with growth so that height does not reach optimal, reduce the physical ability of sportswomen, resulting in pale faces . The results of Dwi Astuti (2020) research show that adolescent girls who have abnormal menstrual patterns tend to experience mild and moderate anaemia, but girls who experience normal menstrual patterns tend not to experience anaemia and experience mild anaemia.

Prevention efforts made by young women is to pay attention to food intake. Adequate iron needs and natural sources such as liver, heart, egg yolks, shellfish, yeast, nuts, and certain dried fruits contain high levels of iron. Animal sources of iron are better absorbed by the body than plant sources. Absorption of iron can be helped by consuming vitamin C, for example drinking orange juice, tomato juice, strawberry juice, other fruits and vegetables. On the other hand, the tannins in tea and coffee can inhibit absorption (Fatimah, 2020)

Students who have poor knowledge about anaemia are one of the causes of unsupportive behaviour in preventing anaemia during menstruation. Lack of knowledge is caused because students do not understand or only receive incomplete information (Sitorus, 2020; Tambunan, 2020). One's knowledge affects one's behaviour, for example, anaemia prevention behaviour during menstruation. Knowledge about anaemia needs to be improved to improve anaemia prevention behaviour during menstruation (Mularsih, 2017).

The school can provide facilities and infrastructure for counselling to prevent anaemia in adolescent girls and treat anaemia that has occurred in adolescent girls. In addition, the school must provide facilities and infrastructure for students if there are complaints related to health (Barbara MAD, 2019; Rambe, 2020).

The school is expected to increase the role and function of UKS in making counselling programs in collaboration with health services in providing counselling and counselling related to anaemia and the importance of taking Fe tablets during menstruation to increase students' knowledge. We are socializing and realizing the provision of Fe tablet supplementation to adolescent girls during menstruation (Angrainy, 2019).

Adherence to taking iron supplementation every week has the same effectiveness as weekly supplementation and during menstruation in increasing haemoglobin levels in adolescent girls(Lewa, 2016). The high compliance in taking supplementation every week can increase the haemoglobin levels of adolescent girls. Various studies have shown that adherence to weekly supplementation can produce the same increase in haemoglobin levels as a daily supplementation (Susanti, 2016).

The impact of anaemia in young women is dominated by decreased achievement and enthusiasm for learning because lack of iron (Fe) status can cause symptoms such as pale,

lethargic/tired, decreased appetite and growth disorders (Putri, 2017). In adolescents with iron deficiency, iron absorption will be more efficient than those without iron deficiency. Vitamin C and animal protein sources (meat and fish) can increase iron absorption from plant sources. The RDA for iron for adolescent and young adults is 19-26 mg/day for women, while for boys it is 13-23 mg/day. In addition, the addition of iron supplementation is also a way to overcome iron deficiency anemia. Administration of iron in adolescents at a dose of 1 mg/kgBW/day. To increase iron absorption, iron supplementation should not be given with milk, coffee, tea, and soft drinks containing carbonate, multivitamins containing phosphate and calcium, but by consuming sufficient mineral water (Ahmady, 2016).

5. CONCLUSION

There are statistical test results using Chi square, and the results obtained are sig-p = 0.003 0.05 in continuity correction, where Ho is rejected and Ha is accepted, indicating that there is a significant relationship between the menstrual cycle and the incidence of anemia in adolescent girls in SMA PAB 5 Klumpang Deli Serdang in 2021. There are statistical test results using Chi square, and the results obtained are sig-p = 0.000 0.05 in continuity correction, where Ho is rejected and Ha is accepted, indicating that there is a significant relationship between the length of menstruation and the incidence of anemia in young women at SMA PAB 5 Klumpang Deli Serdang in 2021. Several practical suggestions can be made based on the study's findings, including the school and cross-sectoral organizations such as the Health Office, Puskesmas, and parents carrying out anemia prevention programs for young women in the form of nutritional counseling and reproductive health services in anemia prevention. Promoting balanced nutrition programs for adolescents in schools in order to achieve healthy eating patterns, as well as the provision of healthy school canteens, education to increase vitamin C intake, which aids iron absorption, and the provision of healthy school canteens, so that adolescents can overcome anemia during menstruation.

Health services for young women through collaboration with schools, particularly adolescent readiness to face the menstrual period, which is associated with anemia . For schools, either through seminars at school or participation in activities organized by the health office, to increase students' understanding of menstruation and the factors that influence it. Young women are expected to pay attention to their food intake and meet their iron needs through natural sources. Taking vitamin C can help the body absorb iron, and iron supplementation is another way to overcome anemia caused by iron deficiency. For future researchers to be able to dig deeper into the sources of information on the prevalence of anemia in adolescent girls.

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