

The Relationship Between Knowledge and Consumption of Iron Tablets and The Incidence of Anemia Among Adolescent Girls at Darul Muttaqien Junior High School in Selopampang, Temanggung Regency

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ABSTRACT

Anemia remains a concern among adolescent girls because menstruation and rapid growth increase iron requirements, potentially impairing concentration and academic performance. This study aimed to examine the relationships between knowledge, adherence to iron tablet consumption, and anemia among seventh-grade girls at Darul Muttaqien Junior High School, Selopampang, Temanggung Regency. A cross-sectional design was employed, and all 52 students were recruited through total sampling. Data were collected using an anemia knowledge questionnaire, iron tablet monitoring cards, observation sheets, and hemoglobin measurements using an EasyTouch device. Univariate analysis was conducted to describe respondent characteristics and study variables, while bivariate analysis was performed to examine relationships using the chi-square test. Most respondents were early adolescents aged 10–13 years (96.2%), had a normal age at menarche (94.2%), and experienced a normal menstrual duration (84.6%). Nearly half of the respondents had moderate knowledge of anemia (48.1%), 73.1% adhered to iron tablet consumption, and 38.5% experienced anemia. Knowledge was significantly associated with anemia incidence ($p = 0.019$); 77.8% of respondents with high knowledge were not anemic, whereas 77.8% of those with low knowledge were anemic. Adherence to iron tablet consumption was significantly associated with anemia ($p < 0.001$), as 92.9% of nonadherent respondents experienced anemia. In conclusion, better knowledge and consistent iron tablet consumption were associated with a lower incidence of anemia.

INTRODUCTION

Adolescence is a period of human growth and maturation characterized by unique and continuous changes. Adolescent girls are one of the groups vulnerable to anemia (Siyami et al., 2023). This vulnerability occurs because adolescent girls experience menstruation every month and undergo a growth period that increases their iron requirements. Significant blood loss during menstruation can reduce iron levels in the body (Safitri & Ratnawati, 2022).

Anemia is a condition in which hemoglobin (Hb) levels in the blood are lower than normal. According to the WHO (2025), anemia in women is diagnosed when hemoglobin levels are <12 g/dL. Signs of anemia include pallor, cardiovascular disorders, and physical weakness, while symptoms include 5L (lelah, letih, lesu, lemah, and lalai), dizziness, headache, blurred vision, irritability, difficulty concentrating, shortness of breath, particularly during physical activity, and anorexia (decreased appetite) (SDKI, 2022). Regulation of the Minister of Health of the Republic of Indonesia No. 88 of 2014 regulates the standards for blood

supplement tablets (Tablet Tambah Darah/TTD) for adolescent girls. The distribution of TTD to adolescent girls is conducted through schools, which are responsible for implementing weekly TTD consumption activities (Helmyati et al., 2023).

The World Health Organization reported that the prevalence of anemia among adolescent girls was 29.6% (WHO, 2023). Based on the Indonesian Demographic and Health Survey (SDKI, 2022), the prevalence of anemia among adolescent girls aged 13–18 years was 23%. Similarly, based on the 2023 Indonesian Health Survey (SKI), the prevalence of anemia among adolescent girls aged 13–18 years was 23%. Anemia cases among adolescents in Indonesia in 2024 remained significant, with a prevalence of 32% among individuals aged 15–24 years (Ministry of Health of the Republic of Indonesia, 2025). Meanwhile, the prevalence of anemia among adolescents in Central Java reached 26.5% in 2024 (Central Java Health Office, 2025), and the incidence of anemia among adolescents in Temanggung Regency reached 37.4% in 2024 (Temanggung Regency Health Office, 2025).

Factors influencing the incidence of anemia among adolescents include knowledge and consumption of iron tablets. Knowledge is one of the important factors affecting anemia prevention behavior among adolescent girls. Adequate knowledge about anemia prevention facilitates the formation of positive behaviors regarding blood supplement tablet consumption, whereas insufficient knowledge may influence adolescents' acceptance of iron tablets and lead to negative perceptions regarding their importance (Safitri & Ratnawati, 2022). Awareness of the importance of health can encourage positive behaviors and increase adherence among adolescent girls (Melinda, Afrena, & Daely, 2022).

Another factor contributing to anemia among adolescent girls is inadequate consumption of iron tablets. Iron tablet consumption fulfills iron requirements through supplementation to prevent or treat iron deficiency and anemia. Adolescent girls require higher iron intake because iron is needed to replace iron lost through menstrual blood. However, adolescent girls often have lower iron intake than recommended due to dietary preferences, limited access to iron-rich foods, or increased unmet iron requirements during rapid growth (Herawati, Fatimah, & Megawati, 2023).

The short-term impact of anemia among adolescent girls is reduced immunity, which increases susceptibility to disease, decreases oxygen supply to the brain and body tissues, and reduces physical fitness and cognitive performance (Ministry of Health of the Republic of Indonesia, 2021). The long-term effects of anemia among adolescent girls include delayed puberty, impaired reproductive development, menstrual disorders such as amenorrhea (absence of menstruation) or oligomenorrhea (irregular menstruation), and an increased risk of infertility because iron deficiency may affect reproductive hormone production (Ministry of Health of the Republic of Indonesia, 2021). This finding is consistent with Mukhaira and Anggraeni (2024), who reported that anemia may impair physical and mental functioning, reduce academic achievement, and decrease adolescent fitness.

Research conducted by Zakiyyah et al. (2025) showed a relationship between adolescent knowledge, iron tablet consumption, and anemia incidence. Another study by Manalu, Gea, and Indrawati (2022) found a significant relationship between knowledge level, dietary patterns, and the risk of anemia among adolescent girls aged 13–18 years in RW 007 Mustika Jaya, Bekasi City, in 2022. Furthermore, Suffara et al. (2024) demonstrated a significant relationship between knowledge level and adherence to blood supplement tablet consumption

with anemia incidence among adolescent girls at MTs Al Huda Bandungbaru, Adiluwih District.

A survey conducted by the Selopampang Temanggung Health Center showed that Darul Muttaqien Junior High School, one of the private schools in the area, had 15 anemic students (23.43%) among 64 seventh-grade adolescent girls based on hemoglobin examination results. A preliminary study conducted in October 2025 through interviews with the person in charge of the Adolescent Health Program at the Selopampang Temanggung Health Center revealed that the achievement of iron tablet distribution had reached 100%. Iron tablet administration in Selopampang is conducted once a week through the Jumirah Ceria program (Friday Drinking Tablets to Increase Blood to Prevent Anemia among Adolescent Girls). In addition, each student receives one blister pack during menstruation with the expectation that students can consume the tablets independently. The health center has also provided counseling on healthy nutritional practices for adolescents in junior and senior high schools throughout Selopampang.

However, despite these efforts, the prevalence of anemia remains high. Many female students still do not consume iron tablets regularly, and schools do not request additional supplies when stocks are depleted. Interviews with 10 adolescent girls at Darul Muttaqien Junior High School regarding anemia knowledge revealed that six students did not understand the effects of anemia, two students did not know the symptoms of anemia, and two students did not know the benefits of iron tablets. Therefore, this study aimed to determine the relationship between knowledge, iron tablet consumption, and anemia incidence among adolescent girls at Darul Muttaqien Junior High School, Selopampang, Temanggung Regency. The theoretical benefit of this study is to enrich the public health and nutrition literature related to risk factors for anemia among adolescent girls. The practical benefits include improving adolescent girls' education and awareness, providing learning references for teachers and schools, supporting anemia control program planning at the Selopampang Health Center, and serving as a reference for future research.

The hypotheses in this study consisted of an alternative hypothesis (H_a) and a null hypothesis (H_0). The alternative hypothesis stated that there was a relationship between knowledge level, iron tablet consumption, and anemia incidence among adolescent girls at Darul Muttaqien Junior High School, Selopampang, Temanggung Regency. Conversely, the null hypothesis stated that there was no relationship between knowledge level, iron tablet consumption, and anemia incidence among adolescent girls.

METHODS

This quantitative study employed a cross-sectional design to determine the relationship between knowledge, iron tablet consumption, and anemia incidence among adolescent girls at Darul Muttaqien Junior High School, Selopampang, Temanggung Regency. The population consisted of two groups: the target population, which included all 257 students at Darul Muttaqien Junior High School, and the accessible population, which consisted of 52 seventh-grade female students. Total sampling was used, resulting in a sample of 52 adolescent girls. The study was conducted in January 2026, with data collection carried out from May to June 2026 at Darul Muttaqien Junior High School, Selopampang, Temanggung Regency. The research instruments included an anemia knowledge questionnaire, iron tablet monitoring

cards, hemoglobin measurements using an EasyTouch device, and observation sheets. Data analysis included univariate analysis and bivariate analysis using the chi-square test.

RESULTS AND DISCUSSION

Univariate Analysis

Table 1. Distribution Frequency of age, age of menarche and menstrual length rEmaja Princess

7th grade Darul Muttaqien Junior High School		
Variable	Frequency	Percentage
Age:		
Early teens (10 – 13 years old)	50	96,2
Intermediate youth (14 – 16 years old)	2	3,8
Late teens (17 – 19 years old)	0	0
Total	52	100
Menarche age:		
Early menarche (<11 years)	3	5,8
Normal menarche (11 – 13 years)	49	94,2
Late menarche (>13 years)	0	0
Total	52	100
Length of menstruation:		
Short (<3 days)	0	0
Normal (3 – 8 days)	44	84,6
Length (>8 days)	8	15,4
Total	52	100

Based on the analysis of the characteristics of 7thgrade girls of Darul Muttaqien Junior High School, it shows that the majority are aged 10-13 years in the category of early adolescents (96.2%), the majority of normal menarche ages are 11-13 years (94.2%) and the majority of menstruation is normal 3-8 days (84.6%).

Table 2. Young women's knowledge of anemia in Darul Muttaqien Junior High School Selopampang Temanggung

Knowledge	Frequency	Percentage
Height	18	34,6
Medium	25	48,1
Low	9	17,3
Total	52	100

Based on the analysis, the knowledge of adolescent girls about anemia at SMP Darul Muttaqien Selopampang Temanggung showed that most of them were in the medium category (48.1%).

The description of the answers to each respondent's question can be seen in the following table:

Table 3. Description of respondents' answers about young women knowledge
About anemia

Yes	Questions	True	%	False	%
1	Anemia is a condition where the hemoglobin (Hb) concentration is below 12 g/dl	51	98	1	2
*2	Low blood pressure can also be called anemia	3	5,8	49	94,2
3	injuries, disordersMenstruation, kidney disease, cancer, thalassemia can cause anemia	39	75	13	25
4	Menstruation that comes out in large quantities can cause anemia	39	75	13	25
5	One of the physical signs of anemia sufferers is yellow eyeballs	40	76,9	12	23,1
6	Weakness and fatigue quickly are one of the symptoms of anemia	49	94,2	3	5,8
7	Adolescent girls with anemia experience decreased achievement in school	31	59,6	21	40,4
8	Anemia affects quality of life in adolescent girls	43	82,7	9	17,3
9	If a young woman has anemia and is not treated, she will be at risk for future pregnancy and childbirth	45	86,5	7	13,5
10	Young women can prevent disease by eating foods that are sources of animal protein (e.g. red meat)	15	28,8	37	71,2
11	Fruits, green vegetables or moringa leaves can increase Hb levels	48	92,3	4	7,7
12	Too long cooking time and too high a temperature can strip the iron content	35	67,3	17	32,7
*13	Adolescent girls with anemia should take Fe tablets regularly 1 tablet every month	21	40,4	31	59,6
14	Bad taste in heartburn, nausea and vomiting, sometimes black stools are side effects of consuming Fe tablets	22	42,3	30	57,7
15	Fe tablets if consumed regularly can prevent and overcome anemia	39	75	13	25
16	Iron is absorbed faster by the body if taken together with drinks containing vitamin C	46	88,5	6	11,5
*17	Fe tablets can be taken together with milk	45	86,5	7	13,5
18	Fe tablets are taken daily during menstruation	46	88,5	6	11,5
19	The number of Fe tablets programmed by the government is 52 throughout the year	28	53,8	24	46,2
20	Fe tablets should not be consumed at the same time as tea/coffee	43	82,7	9	17,3

Based on the results of the table above, it is known that the question that is answered correctly, namely anemia is a state of hemoglobin (Hb) concentration below 12 g/dl as many as (98%) respondents justify the question. Meanwhile, the question that is answered incorrectly, namely about low blood pressure, can also be called anemia, as much as (94.2%) the question is correct, the question should be answered incorrectly.

Table 4. Consumption of FE tablets in adolescent girls Darul Muttaqien Junior High School Selopampang Temanggung

Consumption of Fe tablets	Frequency	Percentage
Obedient	38	73,1
Non-compliant	14	26,9
Total	52	100

Based on the analysis, it was shown that the consumption of FE tablets among adolescent girls at SMP Darul Muttaqien Selopampang Temanggung showed that the majority were in the compliant category (73.1%).

Table 5. Incidence of anemia among adolescent girls at Darul Muttaqien Junior High School Selopampang Temanggung

Incidence of anemia	Frequency	Percentage
No anemia	32	61,5
Anemia	20	38,5
Total	52	100

Based on the analysis, it shows that the incidence of anemia among adolescent girls at SMP Darul Muttaqien Selopampang Temanggung shows that most adolescents are not anemic (61.5%).

Bivariate Analysis

Table 6. The relationship between knowledge and the incidence of anemia among adolescent girls at Darul Muttaqien Selopampang Junior High School, Temanggung

Knowledge	Incidence of Anemia				Total	%	pvalue
	No Anemia	%	Anemia	%			
Height	14	77,8	4	22,2	18	100	0.019
Medium	16	64	9	36	25	100	
Low	2	22,2	7	77,8	9	100	
Total	32	61,5	20	38,5	52	100	

The results of the analysis showed that the results of the *chi-square test* obtained a p-value of $0.019 < 0.05$, then H_0 was rejected H_1 accepted, meaning that there was a relationship between knowledge and the incidence of anemia of adolescent girls at Darul Muttaqien Selopampang Temanggung Junior High School, where adolescents with high knowledge 77.8% of adolescents did not experience anemia. Meanwhile, mothers with low knowledge 77.8% of adolescents experienced anemia.

Table 7. Relationship between Fe tablet consumption and the incidence of anemia among adolescent girls at SMP Darul Muttaqien Selopampang Temanggung

Consumption of Fe tablets	Incidence of Anemia				Total	%	pvalue
	No Anemia	%	Anemia	%			
Obedient	31	81,5	7	18,5	38	100	0.000
Non-compliant	1	7,1	13	92,9	14	100	
Total	32	61,5	20	38,5	52	100	

The results of the analysis showed that the results of the *chi-square test* obtained a p-value of $0.000 < 0.05$, then H_0 was rejected H_1 accepted, meaning that there was a relationship between Fe tablet consumption and the incidence of adolescent female anemia at Darul Muttaqien Selopampang Temanggung Junior High School, where adolescent girls who obediently consumed Fe tablets (81.5%) did not experience anemia and adolescent girls who did not comply with Fe tablets (92.9%) experienced anemia

Characteristics of young women at SMP Darul Muttaqien Selopampang Temanggung

Age

Results Research showed that 7th grade girls of Darul Muttaqien Junior High School showed the majority aged 10-13 years in the early adolescent category (96.2%). The results of this study are in line with the research (Armah et al., 2021) that most respondents were 13 years old (50.9%).

Adolescence is the age of children's growth towards the process of adult human maturity (Briawan, 2019). The age of adolescents according to the classification of the Ministry of Health of the Republic of Indonesia is 10–18 years old (Ministry of Health of the Republic of Indonesia, 2020). The adolescent phase is a phase that is vulnerable to health risks because in the adolescent phase there is rapid development of the body so that sufficient sources of nutrition are needed. However, the need for adequate nutrition is often ignored by adolescents so that there will be several health problems that are caused such as the incidence of anemia in adolescents (Kusnadi, 2021).

Adolescent girls are prone to anemia due to the need for nutrients linked to accelerated growth, menstrual blood loss, malnutrition and poor iron intake (Habib, Abbasi, & Aziz, 2020). This is also supported by the habits of adolescent girls who mostly practice dieting and limit the consumption of certain food products, resulting in reduced energy intake and lower iron intake. In addition, adolescents also tend to have the habit of consuming fast food which usually has high energy content and low nutritional density (Al-Jermmy et al., 2022).

Menarche Age

The results of the study showed that the 7th grade of Darul Muttaqien Junior High School showed the majority of normal menarche ages of 11-13 years (94.2%). The results of this study are in line with the research (Nuraini, Sa'diah & Fitriany, 2021) that most of the young women with menarche age are normal (47.1%).

Menarche in young women usually occurs in the age range of 11 to 15 years during puberty. Menarche that occurs at the age of under 11 is called early menarche, while menarche between the ages of 11 and 15 is considered normal (Prawirohardjo, 2018). Early menarche (first menstruation under the age of 11) increases the risk of anemia in adolescent girls because the body loses blood and iron earlier and more frequently, averaging 30–80 mL per cycle. This blood loss triggers iron deficiency, which is often not balanced by adequate nutrient intake, leading to anemia (Utami, Kamsiah & Siregar, 2020).

Age menarche The Earlier <11 years of age causes the reproductive organs to not function optimally and are not ready to undergo changes that cause pain during menstruation. In addition, younger age is also related to the cervix which is still narrower, so pain arises during menstruation (Rahmawati, 2022).

Early menarche or the onset of premature menstruation refers to the onset of the menstrual period at a younger than usual age, i.e. before the age of 11. The occurrence of premature menarche

can have an impact on the incidence of anemia in schoolchildren. Early menarce can lead to longer and heavier menstrual bleeding in schoolchildren. This can lead to iron deficiency due to excessive blood loss, which in turn can lead to anemia (Miftahurrahmi, 2021).

Old Menarche

The results of the study showed that 7th grade adolescent girls at Darul Muttaqien Junior High School with a normal menstrual period of 3-8 days (84.6%). The results of this study are in line with the research (Trianingsih et al., 2025) that most of the respondents had normal menstrual length (61.5%).

Normal menstruation usually lasts 3 – 8 days. Bleeding that lasts longer or the blood volume exceeds 80 ml per cycle (less than 2 hours once changing pads) causes the body to lose a lot of blood (Rodriguez et al., 2022) Iron loss during menstruation causes the body's iron balance to be disturbed and causes the formation of red blood cells to be disrupted, resulting in the risk of anemia (Habib, Abbasi & Aziz, 2020). The length of bleeding during menstruation allows iron to escape the body to increase and deplete the body's iron reserves, which are important for producing oxygen-carrying hemoglobin, causing red blood cell levels to decrease and causing symptoms of weakness and dizziness.

The same thing was put forward by Armah et al. (2021), that periods that last longer (hypermenorrhea) than normal (>8 days) can indicate certain health problems, such as disorders in the reproductive system or hormonal disorders, that can lead to excessive blood loss. Long periods without adequate iron intake will worsen anemia (Utami, Kamsiah & Siregar, 2020). Continuous blood loss can lead to anemia. Strengthened by research by (Khati, 2024) that there is a significant relationship between long menstrual periods and the incidence of anemia in adolescent girls.

Adolescent girls' knowledge about anemia at Darul Muttaqien Selopampang Temanggung Junior High School

The results of the study show that The knowledge of adolescent girls about anemia at SMP Darul Muttaqien Selopampang Temanggung showed that most of them were in the moderate category (48.1%). The results of this study are in line with the research (Rohniatun & Bherty, 2025) that most of the knowledge of the category of young women is sufficient (48.1%).

Knowledge is one of the components that can realize and support the occurrence of a behavior (Notoatmodjo, 2018). Knowledge is something that is known to be related to the learning process. This learning process is influenced by various factors from within, such as motivation and external factors in the form of available information facilities and socio-cultural circumstances (Notoatmodjo, 2018). Knowledge about anemia is very important to understand and remember the many incidents in young women at Darul Muttaqien Junior High School, because with knowledge, adolescents can know how to prevent anemia from occurring.

This knowledge can encourage positive behavioral changes, such as adopting a healthier diet, adherence to taking iron supplements (if needed), and awareness of the importance of early detection and management of anemia. With enough knowledge, adolescent girls will be better able to maintain their own health to prevent and overcome anemia, which ultimately contributes to improving the quality of their reproductive health (Ariana & Fajar, 2024).

Knowledge about anemia and blood supplement tablets plays a role in determining the adolescent's attitude to commit to consuming blood supplement tablets. Adolescents who have high knowledge and awareness about the importance of consuming blood supplement tablets will form a good attitude of young women, and vice versa (Rohniatun & Bherty, 2025). Good knowledge increases awareness about the benefits of iron, the risk of anemia, and the importance of adherence (Setyorini & Revika, 2024).

Consumption of FE tablets for adolescent girls at SMP Darul Muttaqien Selopampang Temanggung

The results of the study showed that the consumption of FE tablets among adolescent girls at SMP Darul Muttaqien Selopampang Temanggung showed that the majority were in the compliant category (73.1%). The results of this study are in line with the research (Saputri et al., 2025) that most respondents obediently consume Fe tablets (68.3%).

Compliance in consuming TTD is a form of individual awareness to obediently consume TTD in an orderly manner or according to the recommended dosage (Alfiah & Dainy, 2023). Adherence in taking TTD may affect adolescent female hemoglobin levels (Sari & Safriana, 2023). High adherence in taking blood supplement tablets can increase hemoglobin levels quickly and can also improve iron stores in the body (Mariyaningsih, Anitasari & Arifah, 2018). Thus, consuming TTD can reduce the incidence of anemia (Putri, Kamillah & Gunardi, 2024).

This study showed that more students were compliant with the consumption of Fe tablets, but there were still (26.9%) adolescent girls who did not comply. Factors influencing the occurrence of non-compliance in consuming Fe tablets are lack of knowledge in understanding the impact of anemia, side effects that occur when consuming Fe tablets, lack of supervision, and support from schools and families, individual perceptions of health conditions because many adolescents feel that they are healthy, so they do not feel the need for iron supplements (Rosidah, 2024). In addition, the effects of taking blood supplemental tablets such as nausea when taking them are also the reason why adolescent girls are reluctant to take blood supplemental tablets (Savitri et al., 2021).

Incidence of anemia of adolescent girls at Darul Muttaqien Selopampang Junior High School Temanggung

The results of the study showed that the incidence of anemia among adolescent girls at SMP Darul Muttaqien Selopampang Temanggung showed that most adolescents were not anemic (61.5%). The results of this study are in line with the research (Utami & Sudaryanto, 2025) that the majority of respondents did not experience anemia (75%). Supported by research by (Rohniatun & Bherty, 2025) that most young women are not anemic (71.2%).

Anemia is a medical condition that occurs when the body lacks healthy red blood cells or enough hemoglobin to transport oxygen to the body's tissues. In adolescent girls, anemia is often caused by a lack of iron, which is essential for the production of hemoglobin. According to (Notoatmodjo, 2018), anemia in adolescent girls is often associated with menstruation that causes blood loss, increasing the body's need for iron. In addition, a diet that does not contain enough iron or vitamin C, which increases iron absorption, can also lead to deficiency (Rizkiyah & Sukesu, 2020).

On In this study, more adolescent women did not experience anemia (61.5%), this can be because the length of menstruation is mostly in the normal category of 3-8 days. Normally,

bleeding that occurs during menstruation is 3-8 days. Basically, the length of menstruation that is abnormal or longer than normal will result in more blood production so that it can cause iron deficiency (Sharief & Azrida, 2021). The length of bleeding during menstruation allows iron to escape from the body to increase due to the loss of a certain amount of blood each one menstrual period.

Menstruation is one of the causes of anemia in adolescent girls, iron deficiency in some foods, regular nutrition, and irregular diet, diet in adolescents and activities can be obstacles in adolescents to eat regularly (Laksmi & Yenier, 2018). Adolescent girls who have had menstruation are at risk of iron deficiency anemia, because the amount of blood lost during a menstrual period ranges from 20-25 cc, this amount implies an iron loss of 12.5-15 mg/month, or approximately equal to 0.4-0.5 mg/day. (Machmud, Sharief & Thamrin, 2018). If this amount is added to the basal loss, the total amount of iron lost is 1.25 mg/day (Arisman, 2017). Iron loss during menstruation causes the body's iron balance to be disturbed and causes the formation of red blood cells to be disrupted, resulting in the risk of anemia (Habib, Abbasi & Aziz, 2020). The longer a person's menarche, the older the young woman is to have anemia.

The relationship between knowledge and the incidence of anemia in adolescent girls at SMP Darul Muttaqien Selopampang Temanggung

Test results *Chi-Square* showed a relationship between knowledge and the incidence of anemia in adolescent girls at SMP Darul Muttaqien Selopampang Temanggung p-value $0.019 < 0.05$, where out of 25 adolescents with moderate knowledge, there were 16 adolescents who did not experience anemia (50%). The results of this study are in line with the research (Rohniatun & Bherty, 2025) that there is a relationship between the level of knowledge of adolescent girls and the incidence of anemia in adolescent girls (p value) of 0,001.

This illustrates that the knowledge possessed by young women about anemia has a very important role in improving the degree of health to avoid anemia. The better the knowledge of adolescent girls about anemia, the lower the risk of anemia in adolescent girls, because with the knowledge they have, young women can prevent the occurrence of anemia.

According to (Notoatmodjo, 2018), an individual's knowledge of a disease can influence their health behaviors in preventing or coping with the disease. Adolescents with good knowledge of anemia and its impact on their health tend to be more aware of the importance of prevention through a healthy diet and adequate iron consumption. In contrast, adolescents with limited knowledge may not feel that they are at risk or do not know how to prevent it, which can increase their chances of developing anemia (Banti, Shankar & Kumar, 2021).

Strengthened statement (Stuart, 2019) The level of knowledge in adolescents will affect attitudes and behaviors in choosing food at school and at home which determines whether or not a person understands the benefits of Fe tablets. Iron supplementation or giving Fe tablets is one of the important efforts in preventing and preventing anemia. Knowledge about the benefits of good Fe tablets can affect the consumption of good food so as to achieve good nutritional status. This is also supported by research (Kusnadi, 2021) Young women who have good knowledge will be more careful in preventing anemia than young women who have poor knowledge.

The relationship between Fe tablet consumption and the incidence of anemia in adolescent girls at SMP Darul Muttaqien Selopampang Temanggung

Test results *Chi-Square* showed a relationship between Fe tablet consumption and the incidence of anemia in adolescent girls at Darul Muttaqien Selopampang Temanggung Junior High School $p\text{-value } 0.000 < 0.05$, where of the 38 adolescent girls who complied with the consumption of Fe tablets, there were 31 adolescents who did not experience anemia (96.9%). The results of this study are in line with the research (Safitri, Kurniawati & Fitriahadi, 2026) that there is a significant relationship between compliance with FE tablet consumption and the incidence of anemia in adolescent girls.

Non-compliant teens taking Fe tablets are most likely due to a lack of motivation or awareness of the importance of the supplement. Many teens may perceive Fe tablets as something non-urgent, especially if they do not feel significant symptoms of anemia. A lack of ongoing education from healthcare professionals or schools about the importance of consuming Fe tablets can also be a cause of low adherence. Another factor is the side effects felt after taking Fe tablets, such as nausea or constipation, which can decrease adherence (Indrawatiningsih et al., 2021).

Adherence to Fe tablet consumption has a significant impact on reducing the prevalence of anemia. Adolescents who take Fe tablets regularly have been shown to have better hemoglobin levels than those who do not comply (Dewi & Lestari, 2019). In line with research (Putri, Kamillah & Gunardi, 2024) that the consumption of TTD can reduce the incidence of anemia, but non-compliance or consumption of TTD that is not in accordance with the recommended dose can increase the risk of adolescents experiencing anemia.

This study states that obedient adolescent girls certainly act well for their health and conversely adolescents who do not obey will have anemia, where the things that cause anemia mean a lack of understanding of the meaning of anemia, the things that cause anemia, the signs and symptoms of anemia, the things that cause anemia when anemia occurs. In accordance with the research conducted (Aryanti, Hermawan & Yanti, 2023) stated that the better the compliance or consistency of adolescents in consuming Fe tablets given, the better the Hb value obtained, which means that adolescents who are obedient in consuming Fe tablets are very good in preventing anemia.

Therefore, it can be concluded that adolescent girls who have good knowledge and obediently consume FE tablets can prevent anemia. This is supported by research by (Zakiyyah et al., 2025) that there was a relationship between knowledge ($p\text{-value} = 0.017$), adherence to Fe tablet consumption (0.000) and the incidence of anemia. Other research by (Suffara et al., 2024) It also strengthens that there is a significant relationship between the level of knowledge and compliance level of blood supplement tablet consumption with the incidence of anemia in adolescent girls with a $P\text{-value of } < 0.05$.

CONCLUSION

The results of the study among seventh-grade adolescent girls at Darul Muttaqien Junior High School, Selopampang, Temanggung Regency, showed that the majority of respondents were in the early adolescent phase, aged 10–13 years (96.2%), with normal age at menarche (94.2%) and menstrual duration (84.6%). Regarding knowledge, most students had a moderate level of knowledge about anemia (48.1%), which was accompanied by a relatively high level

of adherence to iron tablet consumption (73.1%). Furthermore, the majority of adolescent girls did not experience anemia (61.5%). Statistical analysis showed significant relationships between knowledge level (p -value = 0.019) and adherence to iron tablet consumption (p -value < 0.001) with anemia incidence among adolescent girls at Darul Muttaqien Junior High School.

The suggestions from this study focus on collaboration among various stakeholders in anemia prevention. Adolescent girls are expected to actively improve their health knowledge and maintain adherence to iron tablet consumption. Support from parents should be strengthened through supervision at home, while Islamic boarding school guardians can support structured programs, such as collective iron tablet consumption activities and the use of monitoring cards. Regarding facilities and policies, health workers are encouraged to optimize periodic counseling, routine monitoring, and collaboration with the School Health Unit (UKS), while Darul Muttaqien Junior High School should establish continuous educational and health promotion policies. Future researchers may use the findings of this study as a reference for exploring other risk factors with broader populations and larger sample sizes.

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