

ORIGINAL ARTICLE

Factors Associated with the Incidence of Anemia in Girls at SMPN 17 Tangerang in 2022


Faktor-Faktor yang Berhubungan dengan Kejadian Anemia pada Remaja Putri Di SMPN 17 Tangerang Tahun 2022

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ABSTRACT

Background

The problem of anemia still exists today, although there have been many treatments for adolescent anemia. This study aimed to determine the factors associated with the incidence of anemia in adolescent girls at SMPN 17 Tangerang in 2022.

Methods

This study uses a cross-sectional design. The sample is 150 students with Quota Sampling. Collecting data using a questionnaire and direct measurements on hemoglobin levels, weight, and height. The instruments used were filling forms for hemoglobin levels, weight, and height and questionnaires for the variables of knowledge, mother's education, parents' income, menstrual patterns, eating patterns, and consumption of blood-added tablets (TTD). The analysis in this study is univariate and bivariate (Chi-square).

Results

The results of the univariate analysis showed anemia (40%), poor knowledge (56.0%), high maternal education (74.7%), high parental income (59.3%), abnormal menstrual pattern (61.3%), poor diet (73.3%), normal nutritional status (70.7%), consumption of Blood Supplementary Tablets (TTD) was not good (97.3%). The results of the bivariate analysis obtained four variables related to the incidence of anemia in adolescent girls at SMPN 17 Tangerang, namely the variables of knowledge ($p=0,048$), mother's education ($p=0.042$), parents' income ($p=0.038$), dietary habit ($p=0.038$). However, there were unrelated ones, namely menstrual patterns, nutritional status, and consumption of blood-added tablets.

Conclusions

Variables related to the incidence of anemia were knowledge, the mother's education, the parent's income, and eating patterns (dietary habits).

Keywords: Anemia; Adolescents; Dietary Habit

ABSTRAK

Latar Belakang

Permasalahan anemia masih ada sampai saat ini, walaupun sudah banyak dilakukan penanganan anemia remaja. Tujuan penelitian ini adalah untuk mengetahui faktor-faktor yang berhubungan dengan kejadian anemia pada remaja putri di SMPN 17 Tangerang Tahun 2022.

Metode

Penelitian ini menggunakan desain *Cross Sectional*. Sampel berjumlah 150 siswi dengan *Quota Sampling*. Pengumpulan data menggunakan angket dan pengukuran langsung pada kadar hemoglobin, berat badan, serta tinggi badan. Instrumen yang digunakan formulir isian untuk kadar hemoglobin, berat badan, tinggi badan dan kuesioner untuk variabel pengetahuan, pendidikan ibu, pendapatan orang tua, pola menstruasi, pola makan, dan konsumsi tablet tambah darah (TTD). Analisis pada penelitian ini yaitu univariat dan bivariat (*Chi-square*).

Hasil

Hasil analisis univariat didapatkan anemia (40%), pengetahuan kurang baik (56.0%), pendidikan ibu tinggi (74.7%), pendapatan orang tua tinggi (59,3%), pola menstruasi tidak normal (61.3%), pola makan kurang baik (73.3%), status gizi normal (70.7%), konsumsi Tablet Tambah Darah (TTD) kurang baik (97.3%). Hasil analisis bivariat didapatkan 4 variabel yang berhubungan dengan kejadian anemia pada remaja putri di SMPN 17 Tangerang yaitu variabel pengetahuan ($p=0.048$), pendidikan ibu ($p=0.042$), pendapatan orang tua ($p=0.038$), pola makan ($p=0.038$). Namun terdapat yang tidak berhubungan yaitu pola menstruasi, status gizi, konsumsi tablet tambah darah.

Kesimpulan

Variabel yang berhubungan dengan kejadian anemia yaitu variabel pengetahuan, pendidikan ibu, pendapatan orang tua, pola makan.

Kata Kunci: Anemia; Remaja; Pola Makan

INTRODUCTION

During growth, the nutritional needs of adolescents also increase.¹ An imbalance in nutritional needs and intake will cause health problems, such as malnutrition in the body or excess nutrition.² If adolescents experience nutritional problems, it will harm them, such as decreased concentration and body fitness.³

Anemia is a health problem still found worldwide and in this developing country of Indonesia. This situation can have an impact on a person's economy and can interfere with work productivity.⁴ The condition of a person having a lower-than-normal hemoglobin level is called anemia. In school children and adult women, it is said that a person's condition has a hemoglobin level of less than 12 g/dL. Anemia is generally known in the community as a lack of blood.⁵

According to international journal data, anemia is still found as much as 63% mild anemia, 31% moderate anemia, and 6% severe anemia in Narjan, Saudi Arabia.⁶ Other international data at the Pediatric Clinic, Istanbul, there are 74.3% of adolescents experiencing anemia; the main cause is iron deficiency, which is 81%.⁷

The results of the 2018 Riskesdas, as many as 32% or 3-4 teenagers out of 10 have anemia, and this is due to poor nutritional intake habits, and most teenagers currently lack physical activity.⁸

This lack of iron is often found in the community, and more attention is needed.⁹ According to the 2018 Indonesian Health Profile, the results of the health screening (physical examination and questionnaire) for grade 1 SD/MI, 7 SMP/MTs/SMPLB and grade 10 SMA/SMK/MA/SMALB diseases that are often found are anemia.¹⁰

According to secondary data obtained at the Tangerang City Health Office in 2020, the report on the results of the health screening of 7th grade SMP/MTs students with a target number of 7647 male students and 7107 female students found the risk of anemia in males was 21 students and in 366 female students. SMP/MTs students grade 8-9 with a target number of male students, 3090 students and female students, 2930 students found the risk of anemia in women was 765, and there was no risk of anemia in men. It is said that the risk of anemia is carried out in the report on the results of the health screening of SMP/MTs students by only asking for a physical examination, not by measuring hemoglobin levels in students in SMP/MTs.

One of the causes of anemia in Indonesia is the lack of Fe intake or Blood Supplement Tablets (TTD).¹¹ The coverage of giving blood-supplemented tablets (TTD) in Indonesia is 39.1% for 2020. In the province of Banten, the coverage of giving blood-supplemented tablets (TTD) is 38.4%, stating that the province of Banten is still below the coverage set for Indonesia in 2020.¹²

According to several national studies in Banten province, anemia was 30.9% in MTS Ciwandan Cilegon Banten.¹³ Also, anemia in young female students at SMPN Kota Tangerang is 28.8%.¹⁴ It was also found that the incidence of anemia in SMAN 3 South Tangerang students was 45%.¹⁵ Researcher Khairani (2019) also stated that there was a 17% incidence of anemia in adolescents at SMP Muhammadiyah Serpong.¹⁶

Some factors affect anemia, such as knowledge, the mother's education, parents' income, menstrual patterns, eating patterns, nutritional status, and consumption of blood-supplementing tablets (TTD). According to research by Alhidayati (2019), there is a relationship between knowledge and the incidence of anemia.¹⁷ Researcher Anggoro (2020) also stated that there was a relationship between knowledge and the incidence of anemia.¹⁸ In the mother's education variable, there is a relationship between maternal education and the incidence of anemia.¹⁹ Researcher Jaelani (2017) also mentions a relationship between maternal education and the incidence of anemia.²⁰ Furthermore, according to Harahap (2018), there is a relationship between parental income and the incidence of anemia.²¹ Sholicha (2019) also stated that there was a relationship between menstrual patterns and the incidence of anemia.⁹ Another variable is diet, and there is a relationship between diet and the incidence of anemia.²² There is a relationship between nutritional status and the incidence of anemia.²³ Researcher Alhidayati (2019) also stated that there was a relationship between nutritional status and the incidence of anemia.¹⁷

State Junior High School 17 has many students, with 857 students, more than Setia Bhakti Middle School in Tangerang City, which has 160 students. A preliminary study with 42 female respondents showed that 23.8% of female students experienced 5L symptoms (weak, tired, lethargic, tired, negligent), dizziness, and light-headedness. Furthermore, 78.6% of students do not pay attention to the nutrition contained in the food consumed, and there are 50% of students do not know the balanced nutrition guidelines for the food consumed. Based on the above background, the authors desire to examine the factors associated with the incidence of anemia in adolescent girls at SMPN 17 Tangerang City.

METHODS

The method used in this research is an analytical research design with Cross-Sectional. Cross-Sectional is discovering the relationship or influence between the effects (dependent) and risk factors (independent) by collecting data simultaneously or simultaneously.²⁴ The advantages of the Cross-Sectional design are that it is easy and inexpensive, the results are quickly obtained, it can be used to examine many variables at once, allows the use of the population from the general public, not only patients, so that it is more general.²⁵

This research was conducted at SMPN 17 Tangerang City with the address Jl. Kisamaun, RT.003/RW.007, Babakan, Kec. Tangerang, Tangerang City, Banten 15118. The population of all female students of SMPN 17 Tangerang City in 2021/2022 is 433 students. The sample in this study is part of the population. The sample is 150 students at SMPN 17 Tangerang City with inclusion and exclusion criteria. Inclusion criteria in this study: (1) students aged 12-16 years (early teens), 17-25 years (late teens), (2) students who are already menstruating, (3) willing to participate in research. The exclusion criteria in this study are a sick student

The sampling technique used is Quota Sampling. Quota Sampling, according to Siyoto (2015), is a technique of determining a sample from a population with predetermined characteristics until the number of quotas is reached.²⁶

This study uses primary data. Primary data is taken by filling out questionnaires like the respondent's name, age, class, telephone number, mother's education, parents' income, knowledge, menstrual patterns, eating patterns, consumption of Blood Supplement Tablets (TTD) and direct measurements by measuring hemoglobin levels. Respondents use easy-touch digital tools.

The data analysis used was univariate, image, and bivariate or relationship analysis. The bivariate analysis used in this study is the Chi-Square statistic test using the help of statistical data applications.

This research has been approved by the Committee for Medical and Health Research Ethics, the University of Muhammadiyah, Prof. DR. Hamka, with number 03/22.01/01471.

RESULTS

Characteristics of Respondents

Table 1 shows that most students are at the age of 14 years with 44% (66 respondents) than students aged 16 and 17 years with 0.7%.

Table 1. Distribution of Respondents' Characteristics

Characteristics	Frequency (n)	Percentage (%)
Age		
12 years old	4	2.7
13 years old	65	43.3
14 years old	66	44.0
15 years old	13	8.7
16 years old	1	0.7
17 years old	1	0.7
Class		
Seven	8	5.3
Eight	111	74.0
Nine	31	20.7
Total	150	100%

Based on table 2 shows that 60 respondents (40%) had less anemia than 90 respondents (60%).

Table 2. Distribution of Respondents' Anemia

Characteristics	Frequency (n)	Percentage (%)
Anemia	60	40.0
Not Anemia	90	60.0
Total	150	100%

Table 3. Distribution of respondents based on Knowledge, Mother's Education, Parents' Income, Menstrual Pattern, Diet, Nutritional Status, Consumption of Blood-Adding Tablets (TTD)

Variable	Frequency (n)	Percentage (%)
Knowledge		
Not Good	84	56.0
Good	66	44.0
Mother's Education		
Low	38	25.3
Tall	112	74.7
Parent's Income		
Low	61	40.7
Tall	89	59.3
Menstrual Pattern		
Not normal	92	61.3
Normal	58	38.7
Dietary Habit		
Not Good	110	73.3
Good	40	26.7
Nutritional Status		
Not Normal	44	29.3
Normal	106	70.7
Consumption of Blood Increase Tablets (TTD)		
Not Good	146	97.3
Good	4	2.7
Total	150	100%

Table 3 shows respondents who have poor knowledge about anemia are 84 respondents (56.0%) more than those who have good knowledge, 66 respondents (44.0%). Low maternal education showed 38 respondents (25.3%) less than high maternal education, namely 112 respondents (74.7%). The income of the parents of the low respondent shows that as many as 61 respondents (40.7%) are less than the income of the parents of the high respondent, namely 89 respondents (59.3%).

The table shows respondents with an abnormal menstrual pattern, as many as 92 respondents (61.3%) more than respondents with a normal menstrual pattern, as many as 58 respondents (38.7%). In addition, respondents who have a poor diet are 110 respondents (73.3%) more than the respondents who have a good diet are 40 respondents (26.7%).

The table shows that 44 respondents (29.3%) had abnormal nutritional status, fewer than 106 respondents (70.7%). In addition, respondents who consumed the Blood Supplement Tablet (TTD) less good as many as 146 respondents (97.3%) than the respondents who consumed the Good Blood Supplement Tablet (TTD) as many as four respondents (2.7%).

Table 4. The Relationship of Anemia Factors with Anemia Incidence in Puri Adolescents at SMPN 17 Tangerang City, Banten Province in 2022

Variable	Incidence of Anemia				Total		PR (95% Confident Interval)	p-value
	Anemia		Not Anemia		n	%		
	n	%	n	%				
Knowledge								
Not Good	40	47.6	44	52.4	84	100	1.571 (1.023 – 2.414)	0.048
Good	20	30.3	46	69.7	66	100		
Mother's Education								
Low	21	55.3	17	44.7	38	100	1.587 (1.083 – 2.326)	0.042
Tall	39	34.8	73	65.2	112	100		
Parent's Income								
Low	31	50.8	30	49.2	61	100	1.560 (1.058 – 2.298)	0.038
Tall	29	32.6	60	67.4	89	100		
Menstrual Pattern								
Not normal	39	42.4	53	57.6	92	100	1.171 (0.772 – 1.776)	0.561
Normal	21	36.2	37	63.8	58	100		
Dietary Habit								
Not Good	50	45.5	60	54.5	110	100	1.818 (1.024 – 3.229)	0.038
Good	10	25.0	30	75.0	40	100		
Nutritional Status								
Not Normal	18	40.9	26	59.1	44	100	1.032 (0.674 – 1.581)	1.000
Normal	42	39.6	64	60.4	106	100		
Consumption TTD								
Not Good	58	39.7	88	60.3	146	100	0.795 (0.292 – 2.160)	1.000
Good	2	50.0	2	50.0	4	100		

Note: PR (Prevalence Ratio), TTD (Blood Add Tablet)

Based on table 4 shows respondents with poor knowledge who suffer from anemia (47.6%) more than respondents with good knowledge who suffer from anemia (30.3%). The Chi-Square test results showed a relationship between knowledge and the incidence of anemia (p-value < 0.05). The results of the Prevalence Ratio (PR) calculation show that respondents with poor knowledge have 1.571 times the chance/risk of suffering from anemia (95% CI 1.023 – 2.414).

This study shows low maternal education who suffer from anemia (55.3%) more than respondents have high maternal education who suffer from anemia (34.8%). The Chi-Square test results showed a relationship between maternal education and the incidence of anemia (p-value < 0.05). The results of the Prevalence Ratio (PR) calculation show that respondents with low maternal education have an opportunity/risk of 1.587 times to suffer from anemia (95% CI 1.083 – 2.326).

Based on the table shows that respondents have low-income parents who suffer from anemia (50.8%) more than respondents who have high income parents who suffer from anemia (32.6%). The Chi-Square test results showed a relationship between parental income and the incidence of anemia (p-value < 0.05). The results of the Prevalence Ratio (PR) calculation show that respondents

with low parental income have an opportunity/risk of 1.560 times suffering from anemia (95% CI 1.058 – 2.298).

Based on the table shows respondents with abnormal menstrual patterns who suffer from anemia (42.4%) more than respondents with normal menstrual patterns who suffer from anemia (36.2%). However, the Chi Square test results show no relationship between menstrual patterns and incidence of anemia (p-value \geq 0.05).

Based on the table, shows that respondents with a poor diet suffer from anemia (45.5%) more than respondents with a good diet who suffer from anemia (25.0%). The Chi-Square test results showed a relationship between a diet and the incidence of anemia (p-value $<$ 0.05). The Prevalence Ratio (PR) calculation results show that respondents with a poor diet have 1.818 times the chance/risk of suffering from anemia (95% CI 1.024 – 3.229).

Based on the table shows respondents with abnormal nutritional status who suffer from anemia (40.9%) more than respondents with normal nutritional status who suffer from anemia (39.6%). However, the Chi-Square test results show no relationship between nutritional status and incidence of anemia (p-value \geq 0.05).

Based on the table shows, respondents with poor blood-supplementation tablets (TTD) suffered from anemia (39.7%) less than respondents with good blood-supplementation tablets (TTD) who suffered from anemia (50.0%). The results of the Chi-Square test show no relationship between the consumption of blood supplement tablets (TTD) and the incidence of anemia (p-value \geq 0.05).

DISCUSSION

Anemia

Based on the data obtained, it was found that most respondents did not suffer from anemia (60.0%). However, as many as 40.0% of respondents still suffer from anemia.

According to previous research in Banten province, in MTS Ciwandan Cilegon, Banten students found that 30.9% of respondents suffered from anemia.¹³ According to Ayuningtyas's (2020) research on students at SMAN 3 South Tangerang, Banten, it was found that 45% of respondents suffered from anemia.¹⁵ According to Agustina's research (2019), 28.8% of respondents were anemic in SMPN 24 Tangerang City.¹⁴ According to Fauziyah's research (2020) in Cariu Village, Tangerang Regency, Banten, it was found that 18.2% of respondents suffered from anemia.²⁷ According to Khairani's research (2019) on teenagers at SMP Muhammadiyah Serpong, Banten, it was found that 17% of respondents suffered from anemia.¹⁶

Knowledge

Based on the data obtained, it was found that most respondents had poor knowledge (56.0%). Another finding is that respondents with poor knowledge are 1.571 times more likely/at risk of anemia than those with good knowledge. The relationship between knowledge of the incidence of anemia also supports this finding.

The results study aligned with research conducted by Anggoro (2020) shows a relationship between knowledge variables and the incidence of anemia. The level of knowledge a person possesses can influence their behavior to prevent or treat disease. Therefore, increasing knowledge about anemia in adolescents is important for prevention efforts.¹⁸

However, the results study is not in line with Panyuluh's (2018) and Suryani's research (2015) shows no relationship between knowledge variables and the incidence of anemia.^{11,28}

A child who goes to school or is educated does have broader knowledge, but some still lack knowledge about anemia. This can be caused because they are not given in-depth knowledge about anemia in school lessons, or children ignore the knowledge given at school. Therefore, it is better for a better situation in the future if the school provides learning materials about diseases often experienced by students, such as anemia.

Mother's Education

Based on the data obtained, it was found that most of the respondents had high maternal education (74.7%). Another finding is respondents with low maternal education are 1.587 times more likely/risky to suffer from anemia than those with high maternal education. A relationship between maternal education and anaemia incidence also supports this finding.

The results study was in line with research conducted by Martini (2015), which shows a relationship between a mother's education variable with the incidence of anemia. Higher education mothers get more information about health so that they can apply this information in their lives with their families.²⁹

However, the results study were not in line with research conducted by Panyuluh (2018), shows no relationship between mother's last education variable with incidence of anemia.¹¹

A person's education will affect his behavior, the higher the education, the better the behavior in maintaining health and vice versa, but there are still mothers who have higher education but do not teach or do not tell children about anemia, symptoms, prevention, and causes so that their children do not suffer from anemia. As a mother, in the future, she can help her child more in providing knowledge about anemia, its symptoms, prevention, and causes to their daughters in order to reduce the risk of anemia.

Parent's Income

Based on the data obtained, it was found that most of the respondents had high parental income (59.3%). Another finding is that respondents with low parental income are 1.560 times more likely/risky to suffer from anemia than those with high parental income. A relationship between parental income and the incidence of anemia also supports this finding.

The results study aligned with research conducted by Harahap (2018) shows a relationship between parental income variables and the incidence of anemia. Parental income low will result in food intake consumed every day, such as the inability of parents to buy nutrient-rich food for their children.²¹

However, the results study did not align with research conducted by Ambarwati (2017) and Basith (2017), which shows no relationship between the parental income variable and the incidence of anemia.^{19,30}

The income of parents is related to the economy owned by the family, if the family's economy is good, the more diverse the food consumed in accordance with the nutrients needed and can avoid anemia, but there are still parents who do not pay attention nutritional content food provided by family—his son. Therefore, in the future, parents should be able to help young women meet the iron needs in their bodies to prevent anemia.

Menstrual Pattern

Based on the data obtained, it was found that most respondents had abnormal menstrual patterns (61.3%). Another finding is that respondents with an abnormal menstrual pattern are 1.171 times more likely/risky to suffer from anemia than those with a normal menstrual pattern. However, there is no relationship between menstrual patterns and the incidence of anemia.

The results study were in line with research conducted by Melyani (2019), which shows no relationship between menstrual pattern variables with the incidence of anemia.³¹

However, these results were not in line with the research conducted by Rudi (2018), which shows a relationship between the menstrual pattern variable with the incidence of anemia.²²

In general, menstruation occurs every month when blood comes out, which causes women to experience often a lack of red blood cells, commonly called anemia. Still, if menstruation is unrelated to or affects the incidence of anemia, there may be other influences, such as the intake of nutritional foods teenagers consume. Has met the need. Suppose the intake of these nutritional foods continues to be consumed according to their needs, in the future. In that case, adolescents who experience anemia will decrease, but this must also be assisted with parental support. Parents' income in order to be able to buy nutritional food intake needs for children.

Dietary Habit

Based on the data obtained, it was found that most of the respondents had a poor diet (73.3%). Another finding is that respondents with a poor diet are 1.818 times more likely/risky to suffer from anemia than those with a good diet. The relationship between diet and anaemia incidence also supports this finding.

The results study aligned with research conducted by Zubir (2018), which shows a relationship between dietary variables and the incidence of anemia. Some children still have poor eating patterns, and some often skip breakfast or breakfast for fear of being late for school.³

However, the results study did not align with research conducted by Suryani (2015) and Melyani (2019), which shows no relationship between dietary variables and the incidence of anemia.^{28,31}

Diet, in general, does affect health conditions in the body. However, suppose you eat regularly and are nutritious. In that case, the body still needs help intake such as vitamins, especially vitamin C consumption, to help absorb iron to reduce the risk of anemia. So if the child has consumed iron in the food he consumes but is still anemic, in the next stage, the child can consume vitamin C to help absorb iron into the body.

Nutritional Status

The data obtained shows respondents have normal nutritional status (70.7%). Another finding is that respondents' abnormal nutritional status is 1.032 times more likely/risky to suffer from anemia than those with normal nutritional status. However, no relationship between nutritional status and the incidence of anemia.

These results were in line with research conducted by Ambarwati (2017) and Basith (2017) shows no relationship between nutritional status variables with incidence anemia.^{19,30}

However, the results study did not align with research conducted by Harahap (2018), showing a relationship between nutritional status and variables of incidence anemia.²¹

Nutritional status is generally calculated by the child's height and weight, which will produce a number to determine whether the child has a normal nutritional status. If the nutritional status is not related to or affects the incidence of anemia, it can be caused by the weight of the child who eats regularly but ignores the content. The food they consume, especially the iron content.

The results study, not in line with research conducted by Nasution (2020), show a relationship between nutritional status variables and the incidence of anemia.²³

Nutritional status is a condition that we must know to prevent disease from lacking nutrients. If malnutrition is not immediately appropriately addressed, it will continue until the teenager is an

adult. Such conditions are very worrying because girls, are mothers, will give birth to their children. If malnutrition is not immediately corrected, it will also affect the children. Therefore, today's teenagers should not ignore their food intake, especially substance intake. Iron to prevent anemia that occurs even prolonged.

Consumption of Blood Increase Tablets (TTD)

Based on the data obtained, it was found that most of the respondents had less good consumption of blood-supplementing tablets (97.3%). Another finding was that respondents who consumed blood-supplemented tablets (TTD) were less likely to suffer from anemia than those who had good blood-supplementation tablets (TTD). However, there is no relationship between the consumption of blood supplement tablets (TTD) and incidence of anemia.

However, the results study were not in line with the research conducted by Sari (2018), showing a relationship between the consumption of iron tablets and the incidence of anemia.³²

The habit of consuming iron tablets helps children reduce the risk of suffering from anemia in their teens. Still, if a child consumes blood-added tablets with food or drinks that inhibit iron absorption, it will be in vain, such as consuming them and drinking tea. So it is better for teenagers in the future if consuming foods containing iron is not allowed to be accompanied by consuming foods that can inhibit iron absorption into the body.

Research Limitations

Limitations of this research are : (1) on the question of menstrual patterns, some respondents forgot the day of their menstruation; (2) On the question of the mother's education and parents' income, some respondents did not know the answer, so the researcher asked the respondent again when the respondent had asked his parents regarding the question. Under these circumstances, it takes more time to contact the respondent; (3) In this study, the author uses a quota sampling technique which has a weakness, namely not all respondents can get the opportunity to participate in the research, and the respondent's data collection is only according to what has been characterized; (4) Design study cross-sectional with the disadvantage that it required a large number of samples and did not accurately describe the development of a disease; (5) There are no questions on the instrument sheet asking the consumption of foods containing iron.

CONCLUSION

Based results of research on factors related to the incidence of anemia in adolescent girls at SMPN 17 Tangerang City, Banten Province, in 2022, it can be concluded as (1) An overview of the incidence anemia in adolescent girls at SMPN 17 Tangerang City, found that 60 respondents (40%) suffered from anemia and 90 respondents (60%); (2) The description of the knowledge of young women at SMPN 17 Tangerang City has the poorest knowledge as many as 84 respondents (56%). The description of mother's education has the most higher education as many as 112 respondents (74.7%). The description of the income of parents who have the highest income is as many as 89 respondents (59.3%). The description of the menstrual pattern has the most abnormal menstrual patterns as many as 92 respondents (61.3%). The description of eating patterns has the poorest eating patterns, with as many as 110 respondents (73.3%). The description of nutritional status at most had normal nutritional status as many as 106 respondents (70.7%). The most consumption of blood supplement tablets (TTD) poor consumption of blood supplement tablets (TTD) with 146 respondents (97.3%); (3) There is a relationship between the variables of knowledge, mother's

education, parental income, a diet with incidence Anemia Young Girls at SMPN 17 Tangerang City in 2022; (4) There is no relationship between menstrual patterns, nutritional status, consumption blood supplement tablets (TTD) with incidence anemia adolescent girls at SMPN 17 Tangerang City in 2022.

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AUTHORS CONTRIBUTION

ES, RM, NM: Study concept and design, data collection, analysis and interpretation of results, preparation of manuscripts and corresponding author, data collection and preparation of manuscripts.

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CONFLICT OF INTEREST

There is no conflict of interest in this study.

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