

Determinants of Anemia in Teenage Girls Madrasah Aliyah Negeri

Een Husanah¹, Widya Juliarti²

Program Studi Iii Kebidanan Stikes Hang Tuah Pekanbaru, Jl.Mustafa Sari No 05, Pekanbaru

ARTICLE INFO

Keywords:*Keywords,
Determinant,
Anemia, Teenage Girls***ABSTRACT**

Anemia is a state of decreased hemoglobin, hematocrit and red blood cell counts below normal values. Anemia occurs as a result of a deficiency of one or several essential food elements that can affect the emergence of these deficiencies. Around 54% of adolescent girls in the world experience anemia, while in Indonesia the prevalence of anemia in adolescent girls in 2015 was 28%. Data from the Madrasah Aliyah Public Health Center of Tembilahan Hulu in 2017 were 59 incidents. The purpose of the study was to determine the factors related to the incidence of anemia among adolescent girls in Madrasah Aliyah Negeri Tembilahan Hulu in 2019. The research method was quantitative analytic with a cross sectional research design. The respondents were all female adolescent students in grades X and XI, the study was conducted in July 2019. The sample in this study were all teenage girls students in grades X and XI totaling 82 respondents. The sampling technique was random sampling with the proportional sampling method. The analysis used is univariate and bivariate analysis with Chi-Square test, the measuring instrument used is a questionnaire and computerized data processing (SPSS). The results showed that there was a relationship between eating habits (p value 0.010), POR value = 3.638 (1.455-9.095), nutritional status (p value 0.009), POR value = 3.692 (1.477-9.231), menstrual pattern (p value 0.000), POR value = 20,667 (6.615-64,566), knowledge (p value 0.021), POR value = 3,235 (1,284-8,154). It is recommended to health workers, especially the Tembilahan Hulu Public Health Center, to check and give Fe tablets more often to adolescents at Madrasah Aliyah Negeri Tembilahan Hulu and provide information and socialize about anemia so that Madrasah Aliyah Negeri schools make more efforts to improve health.

E-mail:
eenhusanah@htp.ac.idCopyright © 2021 Science Midwifery.

1. Pendahuluan

Anemia is a condition where hemoglobin, hematocrit and red blood cell counts are below normal values. Anemia occurs as a result of a deficiency of one or several essential food elements that can affect the emergence of these deficiencies (Arisman, 2007). Many factors cause adolescents to be anemic, namely from eating habits, by limiting food intake, length of menstruation or length of menstruation in adolescents which causes teenagers to lose a lot of blood so that they experience anemia, as well as lack of knowledge and not being aware of the symptoms and signs of anemia, even when they know they are still consider anemia as a minor problem (Depkes,2010).

Research conducted (Astuti & Trisna, 2016), recorded the incidence of anemia as much as 83.3% which was caused by the low level of a teenage girls knowledge about anemia. From the results of the analysis, it is known that adolescents who have low knowledge about anemia have a higher chance of developing anemia compared to adolescents who have good knowledge of anemia.

Anemia is a nutritional problem in the world, according to WHO (2017), around 54% of adolescent girls in the world experience anemia, while in Indonesia, the prevalence of anemia in Indonesia in adolescent girls in 2015, which is 28% (Kemenkes RI, 2015). Data from the 2016 Household Health Survey (SKRT) states that the prevalence of nutritional anemia in Indonesia is 40.5% for children under five, 50.5% for pregnant women, 45.1% for postpartum mothers, 57.1% for girls aged 10-18 years and age 19-45 years 39.5%. Of all these age groups, women have the highest risk of suffering from anemia, especially teenage girls (Dieny, 2017).

Based on data obtained from the Riau Provincial Health Office in 2017, the incidence of anemia in adolescents has increased, in 2015 19% of adolescents aged 12-18 years experienced anemia, in 2016 cases increased to 21% and in 2017 to 27% (Riau Health Profile, 2017). Based on data obtained from the Health Office of Indragiri Hilir Regency in 2015 the incidence of anemia in adolescent girls reached 12%, while in 2016 it increased to 17% and in 2017 anemia in adolescents again increased to 21% (Inhil District Health Office, 2017).

Based on data obtained from the Tembilahan Hulu Health Center in 2017, 5 schools have youth posyandu, namely SMAN 1 Tembilahan Hulu totaling 440 students with an anemia incidence of 75 events, SMAN 2 Tembilahan Hulu totaling 200 students with an anemia incidence of 34 incidents, Nurul Jihad numbered 57 female students with 19 cases of anemia, Madrasah Aliyah Negeri had 647 students with 59 cases of anemia, and Sabibal Muhtadin Islamic Boarding School 135 students with 22 cases of anemia.

Based on the initial survey conducted in 5 schools that have youth posyandu, namely SMAN 1 Tembilahan Hulu, SMAN 2 Tembilahan Hulu, Madrasah Aliyah Nurul Jihad, Madrasah Aliyah Negeri, and Pondok Pesantren Sabibal Muhtadiah. After the HB examination was carried out in the 5 schools, 10 young girls were taken from each school for HB examination, and the results showed that the number of adolescent girls who had HB < 12 g% was mostly found in SMAN 1 Tembilahan Hulu, which was 6 people, while at SMAN 2 Tembilahan Hulu there are 3 young women who have HB < 12 gr%, Nurul Jihad as many as 2 people, Madrasah Aliyah Negeri as many as 4 people, and the Sabibal Muhtadin Islamic Boarding School as many as 3 people. The purpose of the study was to determine the factors related to the incidence of anemia in adolescent girls in Madrasah Aliyah Negeri in 2019

2. Method

The research is quantitative analysis with a cross sectional research design. The respondents are all teenage girls in grades X and XI, the research was conducted in July 2019. The sample in this study was all female adolescent girls in grades X and XI, totaling 82 respondents. The sampling technique was random sampling with the proportional sampling method. The analysis used is univariate and bivariate analysis with Chi-Square test, the measuring instrument used is a questionnaire and computerized data processing (SPSS).

3. Results and Discussion

3.1 Analysis Univariate

Most of the respondents were 16 years old with a total of 43 people (52.4%). respondents with abnormal eating habits were 45 people (54.9%), respondents with abnormal nutritional status were 43 people (52.4%), respondents with abnormal menstrual patterns were 42 people (51.2%), and with low knowledge amounted to 50 people (61.0%).

3.2 Analysis Bivariate

a. Relationship between eating habits and the incidence of anemia

The results of statistical tests to see the relationship between eating habits and the incidence of anemia can be seen in the table below:

Table 1
Relationship between eating habits and the incidence of anemia in teenage girls at Madrasah Aliyah Negeri Tembilahan Hulu, Indragiri Hilir Regency in 2019

| Tes Variable | Incident Anemia | | | | | | P value | POR 95% CI |
|--------------|-----------------|------|------------|------|-------|-----|---------|------------|
| | Anemia | | Not anemia | | Total | | | |
| | N | % | n | % | n | % | | |
| Eating habit | | | | | | | | |
| Abnormal | 31 | 68,9 | 14 | 31,1 | 45 | 100 | 3,638 | |
| Normal | 14 | 37,8 | 23 | 62,2 | 37 | 100 | (1,455- | |
| Total | 45 | 54,9 | 37 | 45,1 | 82 | 100 | 9,095) | |

Based on table 7 of 45 respondents with abnormal eating habits who experienced anemia as many as 31 respondents (68.9%). From 37 respondents with normal eating habits who experienced anemia as many as 14 respondents (37.8%).

The results of statistical tests using Chi square obtained P value = 0.010 α0.05, it can be concluded that there is a relationship between eating habits and the incidence of anemia. With POR = 3.638 > CI = 1.455-9.095. This means that respondents with abnormal eating habits are 3.6 times more likely to experience anemia than respondents with normal eating habits.

b. Relationship between nutritional status and the incidence of anemia

The results of statistical tests to see the relationship nutritional status and the incidence of anemia can be seen in the table below:

Tabel 2

Relationship between nutritional status and the incidence of anemia in teenage girls at Madrasah Aliyah Negeri Tembilahan Hulu, Indragiri Hilir Regency in 2019

| Tes Variable | Incident Anemia | | | | | | P value | POR 95% CI |
|--------------------|-----------------|------|------------|------|-------|-----|---------|---------------------|
| | Anemia | | Not anemia | | Total | | | |
| | n | % | N | % | n | % | | |
| Nutritional status | | | | | | | | |
| Abnormal | 30 | 69,8 | 13 | 30,2 | 43 | 100 | 0,009 | 3,692 (1,477-9,231) |
| Normal | 15 | 38,5 | 24 | 61,5 | 39 | 100 | | |
| Jumlah | 45 | 54,9 | 37 | 45,1 | 82 | 100 | | |

Based on table 8 of 43 respondents with abnormal nutritional status who experienced anemia as many as 30 respondents (69.8%). And from 39 respondents with normal nutritional status who experienced anemia as many as 15 respondents (38.5%).

The results of statistical tests using Chi square obtained P value = 0.009 α0.05, it can be concluded that there is a relationship between nutritional status and the incidence of anemia. With POR = 3.692, CI = 1.477-9.231. This means that respondents with abnormal nutritional status are 3.6 times more at risk of experiencing anemia than respondents with normal status

c. Relationship between menstrual pattern and the incidence of anemia

Tabel 3

Relationship between menstrual pattern and the incidence of anemia in teenage girls at Madrasah Aliyah Negeri Tembilahan Hulu, Indragiri Hilir Regency in 2019

| Tes Variable | Incident Anemia | | | | | | P value | POR 95% CI |
|-------------------|-----------------|------|------------|------|-------|-----|---------|-----------------------|
| | Anemia | | Not anemia | | Total | | | |
| | n | % | N | % | N | % | | |
| Menstrual pattern | | | | | | | | |
| Abnormal | 36 | 85,7 | 6 | 14,3 | 42 | 100 | 0,000 | 20,667 (6,615-64,566) |
| Normal | 9 | 22,5 | 31 | 77,5 | 40 | 100 | | |
| Total | 45 | 54,9 | 37 | 45,1 | 82 | 100 | | |

Based on table 9 of 42 respondents with abnormal menstrual patterns who experienced anemia as many as 36 respondents (85.7%). And from 40 respondents with normal menstrual patterns who experienced anemia as many as 9 respondents (22.5%).

The results of statistical tests using Chi square obtained P value = 0.000 α0.05, it can be concluded that there is a relationship between menstrual patterns and the incidence of anemia. With POR = 20,667, CI = 6,615- 64,566. This means that respondents with abnormal menstrual patterns are 20.6 times more likely to experience anemia than respondents with normal menstrual patterns.

d. Relationship between knowledge and the incidence of anemia

The results of statistical tests to see the relationship knowledge and the incidence of anemia can be seen in the table below:

Tabel 4

Relationship between nutritional status and the incidence of anemia in teenage girls at Madrasah Aliyah Negeri Tembilahan Hulu, Indragiri Hilir Regency in 2019

| Tes Variable | Incidence Anemia | | | | | | P value | POR 95% CI |
|--------------|------------------|------|------------|------|-------|-----|---------|---------------------|
| | Anemia | | Not anemia | | Total | | | |
| | n | % | n | % | N | % | | |
| Knowledge | | | | | | | | |
| Low | 33 | 66,0 | 17 | 34,0 | 50 | 100 | 0,021 | 3,235 (1,284-8,154) |
| High | 12 | 37,5 | 20 | 62,5 | 32 | 100 | | |
| Total | 45 | 54,9 | 37 | 45,1 | 82 | 100 | | |

Based on table 10 of 50 respondents with abnormal knowledge who experienced anemia as many as 33 respondents (66.0%). And from 32 respondents with normal eating habits who experienced anemia as many as 12 respondents (37.5%). The results of statistical tests using Chi square obtained P value = 0.021 α0.05, it can be concluded that there is a relationship between knowledge and the incidence of anemia. With POR = 3,235, CI = 1,284-8,154. This means that respondents with low knowledge have a 3.2 times risk of experiencing anemia compared to respondents with high knowledge

3.3 Discussion

a. Relationship between eating habits and the incidence of anemia

The results of the statistical test of researchers stated that there was a relationship between eating habits and the incidence of anemia. This means that respondents with abnormal eating habits are 3.6 times more likely to experience anemia than respondents with normal eating habits. The results of this study are in line with Fitri's research (2016), regarding the relationship between eating habits and the incidence of anemia which states that there is a relationship between eating habits and the incidence of anemia with p value = 0.011.

In line with the theory of Sulistioningsih (2012), eating habits are human or group behavior in meeting needs through attitudes and beliefs in food choices. For some people who have normal eating habits and have limited menus and time constraints cause a person to experience incomplete meals. Eating habits are the incidence of anemia due to eating habits of teenagers who do not meet nutritional standards or complete nutrition such as not consuming vitamins, vegetables, and fruit. Or also eating habits that often consume iced tea after eating which can destroy B vitamins in the body.

b. Relationship between nutritional status and the incidence of anemia

The results of the statistical test of researchers stated that there was a relationship between nutritional status and the incidence of anemia. This means that respondents with abnormal nutritional status are 3.6 times more at risk of experiencing anemia than respondents with normal status.

This study is in line with research conducted by Martini (2015), regarding the factors related to the incidence of anemia in adolescent girls at MAN 1 Metro, from the results of the study it was concluded that there was a relationship between nutritional status and the incidence of anemia, p value of 0.009.

The results of this study are supported by the Ministry of Health (2018), that nutritional status is a substance needed by the body to help the growth process, maintain and repair existing tissues in the body, as well as regulate processes in the body and provide energy in regulating body functions which can be interpreted as development. components in the human body. In this study, the incidence of anemia in adolescents was due to adolescents tending to diet by withholding food and nutritional intake which should only limit eating according to calorie needs in one day. In general, food consumption is closely related to nutritional status if the food consumed has good nutritional value, the nutritional status is also good, on the contrary if the food consumed lacks nutritional value, it will cause malnutrition and can cause anemia.

c. Relationship between menstrual pattern and the incidence of anemia

The results of the statistical test of researchers stated that there was a relationship between menstrual patterns and the incidence of anemia. This means that respondents with abnormal menstrual patterns are 20.6 times more likely to experience anemia than respondents with normal menstrual patterns.

This study is in line with the research conducted by Sulistioningsih (2013), regarding menstrual patterns with the incidence of anemia from the results of the study concluded that there is a significant relationship between menstrual patterns and the incidence of anemia with a p value of 0.015. And in line with the results of other studies, it was concluded that there was a significant relationship between menstruation and the incidence of anemia in adolescent girls (Shariff & Akbar, 2018). And 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 begin to function (Lestari, 2011).

This study is in line with Winkjosastro's (2008) theory, which states that menstrual patterns are the collapse of female reproductive hormonal endometrial cells where the incidence of menstruation experienced by women every month will form a menstrual pattern which includes duration, amount, and cycle. Then according to Astuti (2016), menstrual patterns can affect anemia that occurs in adolescent girls due to insufficient production of red blood cells.

Looking at the prevalence of abnormal menstruation in some young women in Madrasah Aliyah Negeri Tembilahan Hulu and it is proven that menstruation is associated with the incidence of anemia. This is because too much iron loss during menstruation causes anemia.

The researcher concluded that the incidence of anemia in female students who experienced abnormal menstruation every month and did not take Fe tablets so that they were more at risk of losing more iron, because the need for iron in women is very large, this is what can lead to the incidence of anemia and also because there is still a lack of information. about anemia

d. Relationship between knowledge and the incidence of anemia

The results of the statistical test of researchers stated that there was a relationship between knowledge and the incidence of anemia. This means that respondents with low knowledge have a 3.2 times risk of experiencing anemia compared to respondents with high knowledge.

The results of this study are in line with research conducted by Styowati, Rianti, and Indraswari (2017), regarding knowledge and the incidence of anemia, it is known that there is a relationship between knowledge and the incidence of anemia with a p value of 0.016. The results of this study are supported by the theory of Notoadmojo (2010), that knowledge is the result of knowing, and this occurs after people have sensed a certain object. Sensing occurs through the human five senses, namely the senses of sight, hearing, smell, taste, and touch. Most of human knowledge is obtained from hearing and sight. Therefore someone will begin to understand and know something from the knowledge gained, knowledge that can be obtained both from theory and learning from others. Meanwhile, respondents who have low knowledge about anemia are due to their lack of ability to understand and raise awareness of their lack of ability to understand and raise awareness to know what anemia really is.

A person's knowledge can affect the occurrence of anemia. This is because a person's knowledge will affect his behavior including lifestyle and eating habits. Lack of knowledge about the occurrence of anemia, signs of anemia and any impact related to anemia that causes adolescents to be vulnerable to consuming foods that contain little iron so that the iron intake needed by young women is not met. It is easier to increase the risk of young women developing anemia.

4. Conclusion

Based on the results of research on factors related to the incidence of anemia in adolescent girls in Madrasah Aliyah Negeri Tembilahan Hulu, Indragiri Regency in 2019. From 82 respondents, it was concluded that: There is a relationship between eating habits, nutritional status, menstrual patterns and knowledge with related factors. with the incidence of anemia in adolescent girls in Madrasah Aliyah Negeri Tembilahan Hulu Kab. Indragiri Hilir in 2019

References

- Depkes, P (2010). Kesehatan Remaja: Problem dan Solusinya. Jakarta: Salemba Medika
- Astuti, S. D., & Trisna, E. (2016). Faktor-faktor yang Berhubungan dengan Kejadian Anemia pada Remaja Putri Wilayah Lampung Timur. *Jurnal Keperawatan*, Volume XII.
- World Health Organization. (2011). The Global Prevalence Of Anemia in 2011. Retrieved from <http://www.who.int/vmnis/indicators/haemoglobin.pdf>.
- Dieny, F, (2017). Permasalahan Gizi Pada Remaja Putri. Jakarta: Deltabooks
- Dinas Kesehatan Kabupaten Inhil, (2017). Cakupan Anemia Remaja di Kabupaten Inhil.
- Abdul, B., Rismia, A., & Noor, D. (2017). Faktor-faktor yang Berhubungan dengan Kejadian Anemia pada Remaja Putri. Program Studi Ilmu Keperawatan Fakultas K
- Bashit, A., Agustina R., & Diani, N. (2017). Faktor-faktor yang Berhubungan dengan kejadian Anemia pada Remaja Putri. *Dunia Keperawatan*, Volume 5.
- Briawan, D. (2013). Anemia Masalah Gizi pada Remaja Wanita. Jakarta: EGC. edokteran Universitas, Volume 5 N.
- Istiany, A., & Rusilanti. (2013). Gizi Terapan. (E. Kuswandi, Ed.). Bandung: PT Remaja Rosdakarya.
- Lestari, N. (2011). Tips Praktis Mengetahui Masa Subur. Yogyakarta: Katahati.
- Martini. (2015). Faktor-faktor yang Berhubungan dengan Kejadian Anemia pada Remaja putri di MAN 1 Metro. Tanjung Karang: *Jurnal Kesehatan Metro Sai Wawai*. Retrieved from <http://poltekstkj.ac.id/ejurnal-indexph/JKM/articel/view/162/154>
- Nadia, B., Handayani, D., & Rismiati, R. (2010). Hidup Sehat Berdasarkan Golongan Darah. Jakarta: Dukom Publisher.
- Nurt. N. Amerta. 2018. Hubungan Status Gizi dengan Gangguan Menstruasi Pada Remaja Putri di SMA Al-Ahzar Surabaya. *Jurnal Unair* Doi: 10.2473/ Amnt.V2i2. 2018.172-181.
- Profil Kesehatan Riau, (2017). Cakupan Anemia Remaja di Kabupaten Inhil.

- Proverawati, A. (2011). *Anemia dan Anemia Kehamilan*. Yogyakarta: NuhaMedika.
- Sayogo, (2016). *Kesehatan dan Gizi*. Jakarta: Rineka Cipta
- Satyowati, N. D., Rianti, E., & Indraswati, R. (2017). Faktor-Faktor yang Berhubungan dengan Prilaku Makan Remaja Putri dalam Pencegahan Anemia di Wilayah Kerja Puskesmas Ngemplak Simongan. Diponegoro: Jurnal Kesehatan Masyarakat. Retrived from <http://ejournal3.undip.ac.id/index.php/jkm>
- Suryani, D. (2015), Analisis Pola Makan dan Anemia Gizi Besi Pada Remaja Putri di Kota Bengakulu. Diakses pada tanggal 14 Mei 2019 : <http://www.pdf-jurnal-kesehatan.com>.
- Sulistioningsih, H. (2012). *Gizi untuk Kesehatan Ibu dan Anak*. Yogyakarta: Graha Ilmu.
- Dieny, F, (2017). *Permasalahan Gizi Pada Remaja Putri*. Jakarta: Deltabooks
- Tambunan, L. N., Araya, W., & Safitri, N. (2016). Hubungan Tingkat Pengetahuandengan Sikap tentang Anemia Defisiensi Zat Besi dan Dampaknya Terhadap Kesehatan Reproduksi pada Remaja Putri. Palang Karaya : *Dinamika Kesehatan*. Retrieved from <http://ojs.dinamikakesehatan.stikessarimulia.ac.id/index.php/dksm/article/view/115>
- World Health Organization. (2011). *The Global Prevalence Of Anemia in 2011*. Retrieved from <http://www.who.int/vmnis/indicators/haemoglobin.pdf>.
- Winkjosastro, H. 2008. *Ilmu Kandunga*. Jakarta: Yayasan Bina Pustaka Sarwono Prawirohardjo.