

Knowing About Anemia Does Not Guarantee That Young Women Are Not Anemic

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ABSTRACT

Introduction: Anemia in adolescents will have an impact on decreased focus on learning, decreased physical fitness, impaired growth and development. Knowledge is the basis for someone to apply behavior. **Objective:** To determine the relationship between adolescent girls' knowledge about anemia and the incidence of anemia in Glodogan Village, Klaten Selatan, Klaten. **Method:** this is a cross sectional research. Carried out from July to December 2023. The sampling technique uses accidental sampling, about 39 samples were obtained. Hb measurements are then interpreted with the incidence of anemia in adolescent girls. Data analysis uses univariate and bivariate data analysis. **Result:** The majority of respondents (76.9%) are middle adolescents, about 13-17 years. The majority of respondents' education level is secondary education (56.4%). Upper arm circumference some respondents were abnormal (56.4%). Body Mass Index most of the respondents were normal (76.9%). Almost half of the respondents suffer from anemia (43.6%). More than half of the respondents had good knowledge (61.6%). Based on the test of two variables, it was found that there was no relationship between knowledge about anemia and the incidence of anemia, where as many as 23.1% of teenagers who had good knowledge suffered from anemia. **Conclusion:** There was no relationship between knowledge about anemia and the incidence of anemia. For further researcher, it is hoped to explore other factors that influence the incidence of anemia. Community health center is expected increasing community empowerment in preventing anemia.

Keywords: anemia, knowledge, young women

Introduction

Anemia can occur in teenagers. It is estimated that around 30% of teenagers aged 15-49 years experience anemia. In anemia, hemoglobin cannot deliver oxygen to body tissues (WHO, 2018). The prevalence of anemia in adolescent girls increased in 2018 to 48.9%. The incidence of anemia in Asia is in the second highest position after Africa about 45.7%. Riskesdas in 2018 shows that anemia in young women has increased to 48.9% compared to 37.1% in 2013, with the proportion of anemia in the age group 15-24 years and 25-34 years. (Kemenkes RI, 2018.). There are several causal factors the incidence of anemia experienced by adolescents, include lack of knowledge of anemia and nutritional intake thus influences choice in food consumption nutritious, not used to breakfast, the habit of drinking tea and coffee what teenagers do is the cause inhibition of the process of iron absorption in the body, as well as the intake of several substances nutrients such as energy, protein, and vitamin C which is less than the RDA and substance intake iron deficiency in each participants and the irregularities of young women in consuming Fe tablets is the main factors causing participants suffering from anemia (Budiarti et al., 2021).

Anemia also causes various health problems, including decreased immunity, decreased focus and achievement in learning, unfitness and decreased productivity. In teenage girls, anemia can increase the risk of death during childbirth, babies born prematurely, and the baby's weight tends to be low (Kemenkes, 2024.). Female students who have poor knowledge about anemia are one of the causes of unsupportive behavior in preventing anemia during menstruation. Insufficient knowledge is caused by female students not understanding or only receiving information that is not comprehensive. A person's knowledge influences a person's behavior, for example the behavior of preventing anemia during menstruation. Knowledge about anemia needs to be increased to improve behavior to prevent anemia during menstruation (Mularsih et al., 2017).

From the results of interviews with 10 teenagers in Glodogan Village who did not really understand what anemia was and had not received Fe tablets and it was found that 80% of teenagers had not consumed blood supplement tablets because their reason was that if consumed Fe tablets smelled fishy and made the stomach nauseous. Of the 10 teenagers, 80% only know the meaning of anemia, but do not know how to prevent anemia and 20% of teenagers know about the meaning, signs and symptoms and causes of anemia. Based on laboratory results regarding anemia, 60% of 10 people were anemic and 40% were not anemic. Knowledge is the basis for someone to apply behavior. This study investigates whether knowledge is related to the incidence of anemia

Objective

To determine the relationship between adolescent girls' knowledge about anemia and the incidence of anemia in Glodogan Village, Klaten Selatan, Klaten.

Method

The type of research used in this research includes quantitative descriptive methods and a cross sectional approach. The research location carried out in the village of Glodogan, South Klaten, Klaten from July to December 2023. The sampling technique uses accidental sampling. From the results of data collection, 39 samples were obtained. To obtain an overview of knowledge about anemia, the questionnaire used was a closed questionnaire which has been tested for validity and reliability. Hb measurements are then interpreted with the incidence of anemia in adolescent girls. The test for Hb levels in the blood used is using

hemoCue (digital hemometer) with direct measurements on young women. Data analysis uses univariate and bivariate data analysis .

Result

Below are presented the characteristics of the research and relationship between knowledge and the incidence of anemia from 39 subject study.

Table 1. Characteristics Research Subject

Characteristics	Frequency	Percentage
Age		
10-13 (early teen)	6	15,4
13-17 (middle teen)	30	76,9
18-21 (late teen)	3	7,7
Education		
Basic	15	38,5
Middle	22	56,4
High	2	5,1
Upper Arm Circumference		
Normal	17	43,6
Chronic Lack of Energy	22	56,4
Body Mass Index		
Thin	8	20,5
Normal	30	76,9
Overweight	1	2,6
	39	100

Based on table 1, it is known that the majority of respondents (76.9%) are middle adolescents, about 13-17 years. The majority of respondents' education level is secondary education (56.4%). Upper arm circumference Some respondents were abnormal (56.4%). Body Mass Index most of the respondents were normal (76.9%).

Table 2. Relationship Between Knowledge and The Incidence of Anemia

Variable	Incidence of Anemia				Total		p
	Not Anemic		Anemic		N	%	
	N	%	N	%			
Knowledge							
Good	15	38,5	9	23,1	24	61,6	0,332
Sufficient	7	17,9	8	20,5	15	38,4	
	22	56,4	17	43,6	39	100	

Chi Square Test

Based on table 2, almost half of the respondents suffer from anemia (43.6%). More than half of the respondents had good knowledge (61.6%). Based on the test of two variables, it was found that there was no relationship between knowledge about anemia and the incidence of anemia, where as many as 23.1% of teenagers who had good knowledge suffered from anemia.

Discussion

Based on the results of this research, most of the respondents were in middle adolescence about 13-17 years. The majority of respondents' education level is secondary education. Upper arm circumference Some respondents were abnormal. Body Mass Index most of the respondents were normal. To the best of our knowledge, there has been no research regarding the relationship between education level and the incidence of anemia, but maternal education influences the incidence of anemia (Martini, 2015). In a cross-sectional study examining the relationship between iron status and cognitive function in young women with normal BMI and obesity, it was revealed that the cognitive function of adolescents with anemia was normal on average, but they showed significantly lower performance in focused attention. The analysis results were adjusted for potential confounders from inflammation, BMI, and physical activity. Of the three potential confounders, BMI is most closely related to cognition (Cook et al., 2017). Based on research in Indonesia, women with a normal BMI are at higher risk of suffering from anemia compared to obese and overweight women, regardless of the circumference of their upper arms. Women with low physical activity and less fruit and vegetable consumption are at risk of developing anemia. The highest anemia occurs in women with thin body weight and low MUAC (Nainggolan et al., 2022).

Based on our research results, almost half of the respondents suffered from anemia. More than half of the respondents had good knowledge. Based on the test of two variables, it was found that there was no relationship between knowledge about anemia and the incidence of anemia, where as many as 23.1% of teenagers who had good knowledge suffered from anemia. According to Fernandez-Jimenez et al., (2020) the causes of anemia, menstruation is the most common cause of anemia. Women with heavy menstruation are at higher risk of developing anemia. Based on Munro (2023) heavy menstruation and anemia can reduce a teenager's quality of life. This problem can occur from menarche to menopause. The quality of cognition can also decrease because teenagers cannot keep up with learning at school, women's productivity decreases in the workplace. In pregnancy, anemia affects the nervous development of the fetus so that it can have a negative impact on the fetus's cognitive function. Our research is different from the results of research by (Mustika Dewi et al., 2020) which states that there is a relationship between the level of knowledge about anemia and the incidence of anemia in adolescent girls. These differences in results may occur due to differences in research loci. Apart from that, the research subjects are also different.

There are several factors that influence the incidence of anemia. In ndrawatiningsih, (2021), it shows that adolescent education, parental income and adolescent nutritional status have a significant relationship with the incidence of anemia in adolescent girls, while adolescent age does not have a significant relationship with the incidence of anemia in adolescent girls. Based on the final model of multivariate analysis, the variable with the greatest influence on anemia status is the nutritional status variable with an OR value of: 11.711, where adolescents who have poor nutritional status have a 11.711 times greater risk of experiencing anemia than adolescents who have good nutritional status. In another study by Basith et al., (2017), it was found that there was a relationship between the length of menstruation, the length of the menstrual cycle, the education level of parents (mothers), and the income level of parents and the incidence of anemia in adolescent girls.

Based on research by Masthalina et al., (2015), there is a significant relationship between consumption of Fe inhibitor factors and the anemia status of female students at Madrasah Aliyah Al-Aziziyah. There is no significant relationship between consumption of Fe enhancing factors and the anemia status of female students at Madrasah Aliyah Al-Aziziyah.

Anemia occurs due to several factors, including bleeding due to menstruation, infectious diseases, chronic diseases, physical activity, and the most common is due to insufficient iron intake in the body, one of which is the result of consuming foods that inhibit the absorption of iron or inhibitors, for example tannins and oxalate, but iron can also be absorbed well if you consume food sources of enhancers such as vitamin C.

Conclusion

Most of the respondents were middle teenagers, about 13-17 years. The education level of the majority of respondents is secondary education. Upper arm circumference Some respondents are not normal. The Body Mass Index of most respondents was normal. Almost half of the respondents suffered from anemia. More than half of the respondents have good knowledge. Based on the two variable test, it was found that there was no relationship between knowledge about anemia and the incidence of anemia. For further researcher, it is hoped to explore other factors that influence the incidence of anemia. Community health center is expected increasing community empowerment in preventing anemia.

Conflict of Interest

No declare.

Ethical Consideration

This research protocol was not submitted to an ethics committee, but we applied ethical principles such as informed consent, anonymity, confidentiality.

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References

1. Basith, A., Agustina, R., & Diani, N. (2017). *Faktor-Faktor Yang Berhubungan Dengan Kejadian Anemia Pada Remaja Putri. Dunia Keperawatan: Jurnal Keperawatan Dan Kesehatan*, 5(1), 1–10. <https://jdc.ulm.ac.id/index.php/jdc/article/view/443>
2. Budiarti, A., Anik, S., Putu, N., Wirani, G., Tinggi, S., Kesehatan, I., & Surabaya, H. T. (2021). *Studi Fenomenologi Penyebab Anemia Pada Remaja Di Surabaya. Jurnal Kesehatan Mesencephalon*, 6(2). <https://www.ejournal.stikeskepanjen-pemkabmalang.ac.id/index.php/mesencephalon/article/view/246>
3. Cook, R. L., O, N. J., Parker, H. M., Donges, C. E., Lun Cheng, H., Steinbeck, K. S., Cox, E. P., Franklin, J. L., Garg, M. L., Rooney, K. B., & O, H. T. (2017). *Iron Deficiency Anemia, Not Iron Deficiency, Is Associated with Reduced Attention in Healthy Young Women. Nutrients*, 9. <https://doi.org/10.3390/nu9111216>
4. Fernandez-Jimenez, M. C., Moreno, G., Wright, I., Shih, P.-C., Vaquero, M. P., & Remacha, A. F. (2020). *Iron Deficiency in Menstruating Adult Women: Much More than Anemia. Htps://Home.Liebertpub.Com/Whr*, 1(1), 26–35. <https://doi.org/10.1089/WHR.2019.0011>

5. Indrawatiningsih. *Faktor-Faktor yang Mempengaruhi Terjadinya Anemia pada Remaja Putri Jurnal Ilmiah Universitas Batanghari Jambi*. (n.d.). Retrieved March 30, 2024, from <http://ji.unbari.ac.id/index.php/ilmiah/article/view/1116>
6. Kementerian Kesehatan RI. (2018a). *Pentingnya Konsumsi Tablet Fe Bagi Ibu Hamil*. Jakarta.
7. Kementerian Kesehatan RI. (2018b). *Profil Kesehatan Indonesia Tahun 2018*. (Jakarta:Balitbangkes)
8. Kemenkes (2024). *Mengenal Dampak Anemia Pada Remaja*. (n.d.). Retrieved March 24, 2024, from <https://upk.kemkes.go.id/new/mengenal-dampak-anemia-pada-remaja>
9. Martini, M. (2015). *Faktor - Faktor Yang Berhubungan Dengan Kejadian Anemia Pada Remaja Putri Di Man 1 Metro*. *Jurnal Kesehatan Metro Sai Wawai*, 8(1), 1–7. <https://doi.org/10.26630/JKM.V8I1.162>
10. Masthalina, H., Laraeni, Y., Putri, Y.(2015). *Pola Konsumsi (Faktor Inhibitor Dan Enhancer Fe) Terhadap Status Anemia Remaja Putri*. *Jurnal Kesehatan Masyarakat*, 11(1), 80–86. <https://doi.org/10.15294/kemas.v11i1.3516>
11. Mularsih, S., Kebidanan, A., & Semarang, A. H. (2017). *Hubungan Pengetahuan Remaja Putri Tentang Anemia Dengan Perilaku Pencegahan Anemia Pada Saat Menstruasi Di Smk Nusa Bhakti Kota Semarang*. *Jurnal Kebidanan*, 6(2), 80–85. <https://doi.org/10.26714/jk.6.2.2017.80-85>
12. Munro, M. G. (2023). *Heavy menstrual bleeding, iron deficiency, and iron deficiency anemia: Framing the issue*. *International Journal of Gynecology & Obstetrics*, 162(S2), 7–13. <https://doi.org/10.1002/IJGO.14943>
13. Mustika Dewi, I., Putri basuki, P., Candra Marlina STIKES Wira Husada Yogyakarta, R., Babarsari, J., & Bayan, T. (2020). *Hubungan Tingkat Pengetahuan Tentang Anemia Dengan Kejadian Anemia Pada Remaja Putri*.
14. Nainggolan, O., Hapsari, D., Titaley, C. R., Indrawati, L., Dharmayanti, I., & Kristanto, A. Y. (2022). *The Relationship Of Body Mass Index And Mid-Upper Arm Circumference With Anemia In Non-Pregnant Women Aged 19–49 Years In Indonesia: Analysis Of 2018 Basic Health Research Data*. *PLOS ONE*, 17(3), e0264685. <https://doi.org/10.1371/JOURNAL.PONE.0264685>
15. WHO. (2018). *Global Health Observatory (GHO) data*.