The Proceeding of 6th International Nutrition and Health Symposium

October 31 , 2022

DIFFERENCES IN NUTRITION STATUS AND MENSTRUAL CYCLES IN THE INCIDENCE OF YOUNG WOMAN'S ANEMIA IN THE BANTUL REGION

Nanda Ayuni N. Maiya[1] ; Agil Dhiemitra Aulia Dewi[2]

1Fakultas Kesehatan, Universitas Aisyiyah, Yogyakarta

Author maiyananda@gmail.com

Abstract

Anemia cases in adolescent girls are still quite high. According to WHO, the incidence of anemia in adolescent girls in developing countries is around 53.7%. Based on Riskesdas data, the percentage of anemic adolescents in the Special Region of Yogyakarta is 36%, and the prevalence of anemia in the Bantul area is 54.8%. Anemia in adolescent girls is influenced by several factors including nutritional status and menstrual cycle. The purpose of this study was to determine the difference between nutritional status and menstrual cycle on the incidence of anemia in adolescent girls in the Bantul region.

This research is a quantitative research with a cross-sectional research design. Data collection using questionnaires and anthropometric measurements, the study was conducted in junior and senior high schools in Bantul Regency with a population of 3,807 young women. Sampling was done by cluster random sampling based on sub-districts so that 8 schools were obtained which included 3 SMP and 5 SMA. The data were analyzed using One-way ANOVA through the STATA application.

The results showed that the majority of respondents had normal nutritional status as many as 148 people or 69.16%, the majority of respondents experienced normal menstrual cycles as many as 148 or 66.82%, and the majority of respondents did not experience anemia as many as 169 respondents 78.97%. The results of the One-way ANOVA test on nutritional status and the incidence of anemia (p value = 0.7879 > 0.05) and the One-way ANOVA test results for

the menstrual cycle and the incidence of anemia (p value = 0.7540 > 0.05). The results of the study can be concluded that there is no difference between nutritional status and menstrual cycle on the incidence of anemia in adolescent girls in the Bantul area.

Keywords: nutritional status, menstrual cycle, anemia

INTRODUCTION

The case of anemia in adolescent girls is still quite high. According to WHO, the incidence of anemia in adolescent girls in developing countries is around 53.7% (World Health Organization, 2013). Based on Riskesdas data, the percentage of anemic adolescents in the Special Region of Yogyakarta is 36%, with the prevalence of anemia in the Bantul area of 54.8% (Kemenkes RI, 2018).

Anemia in adolescent girls is influenced by several factors including nutritional status and menstrual cycle, nutritional status of adolescents greatly affects the occurrence of menarche (first menstruation) if the food consumed has good nutritional value then the nutritional status is also good, but on the contrary if the food consumed lacks nutritional value it can cause malnutrition and can cause anemia, many adolescent nutritional problems occur due to wrong behavior such as nutritional imbalances with recommended nutritional adequacy (Wulandari, 2021).

The distance from the first day of menstruation to the arrival of menstruation in the next period is called the menstrual cycle. If experience menstruation faster, the iron loss will be even greater, iron deficiency in the blood will cause iron deficiency anemia, the high risk of anemia in adolescent girls is affected by changes in bad eating habits that lead to insufficient iron intake and high intake of nutrients that can inhibit iron absorption (Zhu et al., 2021).

Bantul Regency has many programs in the prevention and control of anemia in adolescent girls, one of which is the SEPEKAN program or the School Concerning Anemia Cases. The SEPEKAN program was socialized in 2014, then began to be implemented in 2015 until now. However, in practice, there are still many students who do not want to take blood-added tablets given by the puskesmas through schools, this is one of the factors that makes the prevalence of anemia in the Bantul area still quite high, considering that young women are prospective mothers who will give birth. the next generation, then cases of anemia must be addressed immediately. The purpose of this study was to determine the difference between nutritional status and menstrual cycle on the incidence of anemia in adolescent girls in the Bantul region.

METHODS

This research is a quantitative research with a cross-sectional research design. Data collection using questionnaires and anthropometric measurements, the study was conducted in junior and senior high schools in Bantul Regency with a population of 3,807 young women. Sampling was done by cluster random sampling based on sub-districts so that 8 schools were obtained which included 3 SMP and 5 SMA. The data were analyzed using One-way ANOVA through the STATA application.

RESULTS AND DISCUSSION

A. Results

Based on the research conducted, the following results were obtained:

1. **Characteristics of Respondents**

Table 1. Characteristics of Respondents

Characteristics of Respondents	Percentage	Frequency
Age		
13 years	37	17,29%
14 years	25	11,68%
15 years	33	15,42%
16 years	77	35,98%
17 years	42	19,63%
Education		
Junior High School	65	30,37%
Senior High School	149	69,63%
Menstrual		
1x a month	188	87,85%
2x in a month	7	3,27%

Sometimes menstruation, the next month not	19	8,88%
Menstrual Cycle		
Short cycle	188	87,85%
Normal cycle	7	3,27%
Long cycle	19	8,88%
Nutrition Status		
Malnutrition	20	9,35%
Normal	148	69,16%
More nutrition	46	21,49%
Incidence of Anemia		
Anemia	45	21,03%
No Anemia	169	78,97%

2.   **The difference between nutritional status and menstrual cycle with the incidence of anemia in adolescent girls**

Table 2. Nutritional Status and Menstrual Cycle Test Results on the Incidence of Anemia

	Sumber	*SS*	*df*	*MS*	*F*	*P value*
Nutritional status	Between groups	.08021514	2	.04010757	0.24	0.7879
	In group	35.457168	211	.16804345		
	Total	35.5373832	213	.16804345		
Menstrual cycle	Between groups	.094983472	2	.047491736	0.28	0.7540
	In group	35.4423997	211	.167973458		
	Total	35.5373832	213	.166842175		

Based on the One-Way ANOVA statistical test between nutritional status and the incidence of anemia, it was found that the p value = 0.7879 > 0.05 so it can be concluded that there is no difference between undernutrition status, normal nutritional status, and overnutrition status with the incidence of anemia in adolescents in junior high school and senior high school Bantul region high school.

Based on the One-Way ANOVA statistical test of the menstrual cycle and the incidence of anemia, it was found that the p value = 0.7540 > 0.05 so it can be concluded that there is no difference between short menstrual cycles, normal menstrual cycles, and long menstrual cycles with the incidence of anemia in adolescents in junior high and high school Bantul area.

B. Discussion

1. **Characteristics of Respondents**

Based on research conducted on 214 junior high and high school students in the Bantul area, most of the respondents aged 16 years were 77 people (35.98%), 42 respondents aged 17 years (19.63%), respondents aged 13 years were 37 people (17.29%), aged 15 years as many as 33 people (15.42%), and at least 14 years old as many as 25 people (11.68%). All respondents' ages are still classified as teenagers who are currently studying for Junior High School and Senior High School.

Based on table 1.1 the results of the study show that menstruation in respondents occurs 1x in a month as many as 188 respondents (87.85%). (Budiarti, Anik, & Wirani, 2021) stated that menstruation that occurs once a month is said to be normal menstruation, adolescents who are not anemic experience normal menstruation, this is because normal hemoglobin levels will prevent more bleeding when compared to hemoglobin levels. the lower one.

Based on table 1.1 also shows that as many as 19 people (8.88%) of respondents in one month, sometimes menstruating and the next month does not menstruate and as many as 7 respondents (3.27%) experience 2 times menstruation in one month. A person's stress level can affect the menstrual cycle every month, stress has an impact on the neuroendocrinological system as a system that plays an important role in female reproduction in its influence on menstrual patterns and menstrual disorders in adolescent girls are also caused by hormone levels due to stress and unstable emotions (Susiloningtyas & Fitriana Grace, 2022).

Based on table 1.1 the results of the study, the majority of respondents experienced normal menstrual cycles as many as 145 respondents (66.82%), respondents with short

menstrual cycles as many as 50 people (24.3%), and respondents with long menstrual cycles as many as 19 people (8.88 %).. The length of the menstrual cycle is influenced by age, weight, physical activity, stress levels, genetics and nutrition (Astuti & Kulsum, 2020).

Based on table 1.1 the results of the study, as many as 148 (69.16%) respondents had normal nutritional status, respondents with more nutritional status were 46 people (21.49%) and respondents with less nutritional status were 20 people (9.35%) . (Jannah & Anggraeni, 2021) stated that good nutrition during adolescence will have an impact on good health, optimal growth and development. One of the factors of a person with normal nutritional status and not experiencing anemia, namely because the food intake consumed by the respondent already contains and fulfills all the nutrients needed by the body, so that there is a balance between the nutrients consumed and the nutrients needed by the body. The need for adequate nutrition in adolescents is obtained from the suitability between the amount and type of food consumed, with the needs of body functions so that it is beneficial for the maintenance of optimal body functions. Deficiencies in consuming food both in quantity and quality can cause nutritional problems such as chronic energy deficiency (KEK), anemia, lack of vitamin A, and disorders due to lack of iodine (Sugiyanto, 2018).

2. **The difference between nutritional status and menstrual cycle with the incidence of anemia in adolescent girls**

There is no difference in underweight nutritional status, normal nutritional status and overweight status with the incidence of anemia, this is due to several factors. Although the results of the study show that the majority of respondents have normal nutritional status, some respondents with normal nutritional status still experience anemia, this can occur because in their daily consumption patterns they consume less animal protein sources and iron sources. A poor diet can cause young women to be more at risk of developing anemia (Muliani, 2022). According to (Nabilla, Muniroh, & Rifqi, 2022) anemia can occur due to low iron content in the food consumed, low iron absorption, low knowledge about iron, and the presence of iron absorption inhibitors in food.

Low iron content in food can cause iron intake deficiency, which if it occurs continuously can lead to reduced iron reserves in the body so that hemoglobin synthesis can be disrupted. In line with research conducted by (Triwinarni, Hartini, & Susilo, 2017) which states that the level of protein and iron consumption has a relationship with the anemia status of adolescent girls. Protein which is also a source of energy can play a role in other functions, namely the transport of iron into cells. The type of protein that can increase the transport and absorption of iron is

animal protein. Therefore, the lack of animal protein intake will affect hemoglobin levels in the blood (Muliani, 2022).

The results of this study are in line with research conducted by Aisyah (2017) which states that there is no relationship between nutritional status and the incidence of anemia, this is presumably because there are other factors that also affect the occurrence of anemia, namely the level of nutrient consumption, adolescent girls with normal categories allow suffer from anemia if the level of consumption of nutrients that facilitate iron absorption is still lacking.

There is no difference between the menstrual cycle and the incidence of anemia in adolescents because the respondent's menstrual cycle is already classified as good as evidenced by the results of the study the majority of respondents experience a normal menstrual cycle, but even though the menstrual cycle of adolescents is classified as normal, it is possible that during menstruation the amount of blood that comes out is quite a lot. so that patients often cannot absorb enough iron from the small intestine to form hemoglobin as quickly as blood is lost, then red blood cells are formed that contain a small amount of hemoglobin causing an anemic state for adolescents with normal menstrual cycles (Evangelista, 2019).

CONCLUSION

There is no difference between nutritional status and menstrual cycle with the incidence of anemia in girls in the Bantul region.

REFERENCES

Astuti, D., & Kulsum, U. (2020). Pola Menstruasi Dengan Terjadinya Anemia Pada Remaja Putri. *Jurnal Ilmu Keperawatan Dan Kebidanan*, *11*(2), 314. https://doi.org/10.26751/jikk.v11i2.832

Budiarti, A., Anik, S., & Wirani, N. P. G. (2021). Studi Fenomenologi Penyebab Anemia Pada Remaja Di Surabaya. *Jurnal Kesehatan Mesencephalon*, *6*(2). https://doi.org/10.36053/mesencephalon.v6i2.246

Evangelista. (2019). Anemia Defisiensi Zat Besi. *Repository UHN*, 1–24

Kemenkes RI. (2018). Hasil Riset Kesehatan Dasar Tahun 2018. *Kementrian Kesehatan RI*, *53*(9), 1689–1699.

Muliani, U. (2022). Perbedaan Asupan Protein, Fe, Vit B6, Vit C, Dan Status Kek Pada Remaja Putri Anemia Dan Non Anemia. *HEALTHY : Jurnal Inovasi Riset Ilmu Kesehatan*, *1*(2), 81–91. https://doi.org/10.51878/healthy.v1i2.1115

Sugiyanto, S. (2018). Hubungan Status Gizi dengan Kejadian Anemia pada Siswa Kelas X SMK Muhammadiyah 2 Bejen Bantul Yogyakarta. *Health Sciences and Pharmacy Journal*, *2*(2), 48. https://doi.org/10.32504/hspj.v2i2.28

Susiloningtyas, I., & Fitriana Rahayu, E. (2022). Hubungan Stress dengan Gangguan Menstruasi pada Remaja Putri. *Jurnal Sehat Masada*, *16*(1), 34–39. https://doi.org/10.38037/jsm.v16i1.261

Tyastirin, E., & Hidayati, I. (2017). Statistik parametrik untuk penelitian kesehatan. In *Program Studi Arsitektur Uin Sunan Ampel*.