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Overview of Nutritional Status And Anemia Prevalence In Adolescent Females In Sidoarjo District

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ABSTRACT

Background: Nutritional status and anemia are important health issues that significantly affect adolescent girls. Adolescence is a critical period for growth and development, so poor nutritional status can have long-term impacts on health and quality of life. Anemia and poor nutritional status in adolescent girls can have an impact when they become prospective mothers, namely at risk of pregnancy with chronic energy deficiency (CED). Pregnant women with CED are at risk of giving birth to babies with low birth weight (LBW). LBW babies are at risk of stunting. **Objective:** This study aims to describe the nutritional status and incidence of anemia in adolescent girls. **Method:** This study used a descriptive approach with a cross-sectional design. The study sample consisted of 241 female adolescents aged 14-18 years old taken from 2 senior high schools in Sidoarjo Regency. Data were collected through anthropometric measurements (height and weight) and blood sampling for hemoglobin analysis. **Results:** The results showed that 24% of female adolescents were malnourished, characterized by a body mass index (BMI) below the normal limit. Of the 24%, 14.5% were in the mild wasting category and 9.5% in the severe wasting category. The incidence of anemia among the sample was 46.9%, with an average hemoglobin level significantly lower than the standard reference value. Of the 46.9%, 23.7% were in the mild anemia category, 20.3% in the moderate anemia category, and 2.9% in the severe anemia category. **Conclusion:** Suboptimal nutritional status and anemia are common health problems among adolescent girls. Interventions that emphasize improving dietary patterns, iron supplementation, and health education need to be prioritized to improve nutritional status and prevent anemia among adolescent girls.

Keywords: Nutritional Status, Anemia, Adolescent Girls

BACKGROUND

Adolescent girls' health is an important aspect of public health, especially since adolescence is a critical period involving significant growth and physiological changes. Anemia, a condition characterized by a deficiency of healthy red blood cells or hemoglobin, is a common health problem among adolescent girls and can affect their quality of life and overall development. The prevalence of anemia among adolescent girls is of particular concern because it can impact their daily activities, academic achievement, and long-term health.

The prevalence of anemia in women aged 15-49 years worldwide was 29.9% in 2019 (WHO, 2023). Based on the 2018 Riskesdas, the prevalence of anemia in adolescents was 32%, meaning that 3-4 out of 10 adolescents suffer from anemia. This is influenced by suboptimal nutritional intake habits and lack of physical activity (Direktur Jenderal Masyarakat Kementerian Kesehatan RI 2021).

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Based on data from the Women's Empowerment, Child Protection and Population Service (DP3AK) of East Java Province, the number of female adolescents who experience anemia is 23 percent and male adolescents 12 percent (Supriyatno 2023)**.** Meanwhile, in Sidoarjo, the number of adolescents who experience anemia is 32.9 percent (Pratimi 2021)**.**

The high rate of anemia among adolescent girls in Indonesia indicates that many of them do not get enough iron and other nutrients that are essential to support their health. These unmet nutritional needs are often caused by an unbalanced diet, lack of knowledge about nutrition, and socio-economic factors that affect access to nutritious food. Although various efforts have been made to improve the nutritional status of the community, current data shows that anemia and other nutritional problems remain major challenges. This condition can be influenced by various factors, including diet, health habits, and environmental factors.

The importance of understanding the picture of nutritional status and the incidence of anemia in adolescent girls in Sidoarjo Regency cannot be ignored. Accurate and comprehensive information on this issue will provide a clearer picture of the prevalence of anemia. Thus, more effective interventions and strategies can be designed to address this problem, either through nutrition education programs, increasing access to nutritious food, or better health policies.

This article aims to present an overview of the nutritional status and incidence of anemia among adolescent girls in Sidoarjo Regency. Through the analysis of the latest data and review of relevant literature, this article is expected to provide valuable insights for policy makers, health workers, and the wider community. With a better understanding of this issue, it is hoped that more effective prevention and response measures can be implemented, so as to improve the health and welfare of adolescent girls in Sidoarjo Regency in particular.

METHOD

This study uses a quantitative descriptive method to describe the nutritional status and incidence of anemia in adolescent girls in Sidoarjo Regency.

The research was conducted at MA Islamiyah Sidoarjo and SMA Hang Tuah 5 Sidoarjo. This research was conducted in July - August 2024.

The study population consisted of female adolescents aged 14-18 years who attended MA Islamiyah Sidoarjo and/or SMA Hang Tuah 5 Sidoarjo. The research sample was taken using purposive sampling technique.

The number of samples determined was all female students at MA Islamiyah Sidoarjo totaling 136 female students and 136 female students of SMA Hang Tuah 5 Sidoarjo grade 12 who met the research criteria. The research criteria are as follows: Present at the first measurement (pre-test), 2) and willing to be respondents.

The variables in this study are: 1) Nutritional status: Measured using Body Mass Index (BMI), which is calculated based on the respondent's weight and height. Classification of nutritional status is carried out based on the standards of the Ministry of Health of the Republic of Indonesia, and 2) Anemia prevalence: Determined by measuring hemoglobin levels in the blood using the Fora 6 Plus tool. Anemia is defined according to WHO criteria, namely hemoglobin levels <12 g/dL for adolescent girls.

Data collection was carried out using direct measurement methods, namely measuring body weight and height to determine BMI, and measuring hemoglobin levels using the Fora 6 Plus tool.

The data collected were analyzed quantitatively to describe the distribution of nutritional status and prevalence of anemia among respondents.

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This research was conducted by considering the principles of research ethics, including: 1) Informed consent, which is obtaining consent from participants after providing a clear explanation of the purpose, benefits, and risks of the research; 2) Confidentiality, which is maintaining the confidentiality of personal data and research results, and ensuring that information is only used for research purposes; and 3) Right to participation, which is giving participants the right to withdraw from the research at any time without negative consequences.

RESULTS AND DISCUSSION

Respondent Characteristics:

Table 1. Age of Senior High School students in Sidoarjo Regency, July 2024

No.	Age (years)	Amount	Percentage
1	18	28	11.62
2	17	142	58.92
3	16	46	19.09
4	15	24	9.96
5	14	1	0.41
	Total	241	100

The table above shows that the age of the students in the treatment group varies from 14 years to 18 years. In the control group, there were none aged 14 and 15 years.

Table 2. Nutritional status of female students at Senior High Schools in Sidoarjo Regency, July 2024

No.	Nutritional status	Amount	Percentage
1	Very thin	23	9.54
2	Thin	35	14.52
3	Normal	130	53.94
4	Fat	15	6.22
5	Very fat	38	15.77
	Total	241	100

Table 2 shows that high school students in Sidoarjo Regency whose nutritional status is normal are about half of the total number of students whose BMI is measured, the rest are fat and thin. The fat and heavy ones are 30.90% and the thin ones are 20.03%. The results of this study are in line with the results of the study by Muhayati & Ratnawati (2019) which showed that adolescent girls with normal BMI were 56.4%, underweight BMI were 33%, and overweight BMI were 10.6%. This condition, namely nutritional status that is less than half in the normal category, must receive more attention from various parties, especially schools and health agencies.

Nutrition education, especially for adolescents who have unique characteristics, is expected to form habits about the practice of fulfilling nutrition and healthy living and then contribute to achieving ideal nutritional status. Education can be delivered through learning methods that are relevant to their age, either through intracurricular, co-curricular, or extracurricular education. Ideal nutritional status is very necessary, especially for adolescent girls who will later play the role of mothers when they are adults (Februhartanty et al. 2019).

Nutritional intake to be able to fulfill balanced nutrition for the body can prevent anemia, especially for adolescents, namely by applying the principle of food diversity, not consuming food from only one type. If you are forced to eat instant food, you must do so within appropriate limits and it is best to consult a nutritionist or dietician first.

Table 3. Hb levels of female high school students in Sidoarjo Regency, July 2024

No.	Anemia category	Amount	Percentage
1	Normal	129	47,33
2	Mild Anemia	55	25,95

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3	Moderate Anemia	51	25,19
4	Severe Anemia	6	1,53
	Total	241	100

The table above shows that almost half of high school students in Sidoarjo Regency suffer from anemia. The results of this study are in line with the results of the study by Muhayati & Ratnawati (2019) which showed that 46.8% of adolescent girls were not anemic. This condition, namely anemia in adolescent girls which is more common than those who are not anemic, needs serious attention.

Anemia can interfere with brain function in adolescents. Most studies have found that anemia is associated with low concentration and learning memory in children and adolescents. A study stated that there was a decrease in IQ of 1.73 points for every 1 g/L decrease in hemoglobin. Anemia and reduced brain function are directly related to low income in the future (Februhartanty et al. 2019).

Cases of anemia are very prominent in school children, especially adolescent girls. Adolescent girls are at high risk of suffering from anemia because during this period there is an increase in the need for iron due to growth and menstruation. Adolescent girls who menstruate will lose a lot of blood every month, this must be balanced with adequate nutritional intake. In addition, you should also avoid foods that inhibit iron absorption, such as tea and coffee. Young women are also advised to drink milk containing iron and consume iron supplements with the rule of 1 tablet per week.

CONCLUSION

Suboptimal nutritional status and anemia are common health problems among adolescent girls. Interventions that emphasize improving dietary patterns, iron supplementation, and health education need to be prioritized to improve nutritional status and prevent anemia among adolescent girls.

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