OVERVIEW OF ANEMIA LEVELS IN FEMALE ADOLESCENTS AT JUNIOR HIGH SCHOOL 3 KEDIRI

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Abstract

This study aims to provide an overview of the level of anaemia among female adolescent at Junior High School 3 Kediri, given the importance of anaemia prevention to support the health of the younger generation. The method used was a descriptive design with a cross-sectional approach, involving 174 7th grade female adolescent who participated in health screening and haemoglobin (Hb) level examination. The results showed that out of 174 female adolescents, 169 had normal Hb levels, 4 had mild anaemia, and 1 had moderate anaemia, with no cases of severe anaemia. The conclusion of this study shows that the screening program and routine administration of iron folic acid supplement tablets are effective in preventing anaemia, although continuous monitoring and intervention are still needed to maintain the health of female adolescent.

Keywords: *anaemia, female adolescent, haemoglobin*

1. INTRODUCTION

Anaemia is a common health condition among female adolescent in Indonesia, and has a long-term impact on their health and quality of life. Anaemia can hinder physical growth and cognitive development, which are important for adolescents in their growth phase. Research shows that anaemic adolescent girls are at high risk for complications during pregnancy and childbirth, which can affect the next generation[1], [2]. Therefore, efforts to prevent anaemia in adolescent girls are crucial to ensure a healthy and stunting-free generation.

In this context, the Ministry of Health of the Republic of Indonesian has launched an anaemia screening program aimed at adolescent girls at the junior high school and senior high school levels. This program aims to detect anaemia early and provide appropriate interventions. According to the Regulation of the Minister of Health of the Republic of Indonesia Number 24 of 2020, anaemia screening is required for new students in grades 7 and 10[1]. This screening includes general health checks and checking haemoglobin (Hb) levels in the blood.

The screening process is not only limited to measuring haemoglobin levels, but also includes health education on the importance of balanced nutrition and iron intake. The knowledge gained through this education is expected to increase adolescent girls' awareness about their own health and the importance of anaemia prevention. Research by Sari et al. (2022) showed that effective health education can improve adolescents' knowledge and behaviour in maintaining their health[3]

After screening, all adolescent girls detected with anaemia will be given blood supplement tablets, with a dosage of one tablet per week. This program aims to increase haemoglobin levels in the blood of adolescent girls and reduce the prevalence of anaemia. According to research by Rahmawati et al. (2023), regular administration of blood supplement tablets was shown to be effective in increasing haemoglobin levels and reducing the incidence of anaemia among adolescents[4].

The importance of this intervention not only impacts on individual health, but also on the overall health of the community. Untreated anaemia can lead to more complex long-term health problems, including stunting in future generations. Research by Irawati and Widiastuti (2021) showed that there is a significant relationship between anaemia in mothers and the prevalence of stunting in their children[5].

Thus, this study aims to provide an overview of the level of anaemia among adolescent girls at Junior High School 3 Kediri. Hopefully, the results of this study can serve as a reference for the school and government in implementing more effective and sustainable health programs. In addition, this information is expected to increase public awareness about the importance of adolescent girls' health as the next generation of the nation. Finally, through joint efforts between the government, educational institutions, and the community, it is hoped that adolescent girls in Indonesia can avoid anaemia and become healthy future mothers, which in turn will give birth to a healthy generation free from stunting.

2. METHODOLOGY

This study used a descriptive design with a cross-sectional approach, which was carried out at Junior High School 3 Kediri by involving all 7th grade female students totaling 182 people. The health screening process was conducted thoroughly, including medical history and simple physical examination, followed by measurement of hemoglobin (Hb) levels using the hemoglobinometer method through finger prick blood sampling. Data collected included respondent demographics and Hb test results, which were then analyzed descriptively to determine the prevalence of anemia. All research procedures were carried out with due regard to research ethics, including obtaining permission from the school and parental consent.

3. RESULTS

From a total of 182 female adolescents in 7^{th} grade at Junior High School 3 Kediri, 174 (95.6%) participated in health screening and haemoglobin (Hb) level examination. The results showed that 169 female adolescents had normal Hb levels (>12 g/dL), 4 female adolescents had mild anaemia (11-11.9 g/dL), and 1 female adolescent had moderate anaemia (8-10.9 g/dL). Interestingly, none of the female adolescents had severe anaemia (<8 g/dL). These results suggest that the majority of the female adolescents in the school have a good nutritional status in terms of their haemoglobin levels.

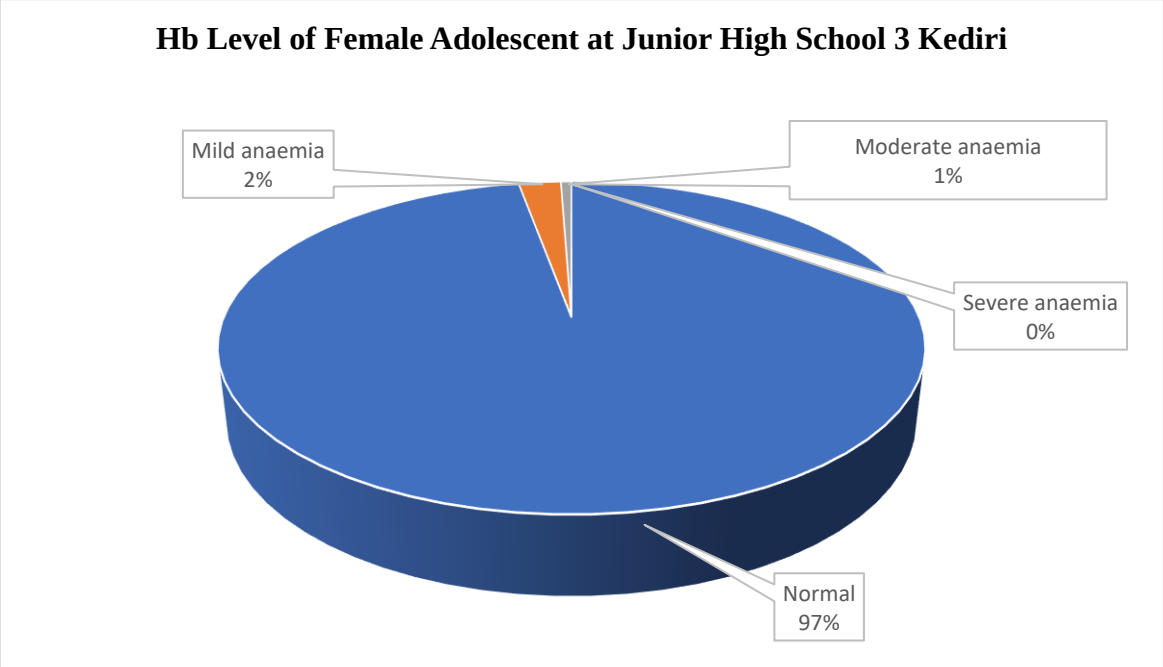

Figure 1. *Hb level of female adolescent at Junior High School 3 Kediri*

The prevalence of anaemia among female adolescents in Junior High School 3 Kediri showed a relatively low rate, with only 2.9% of female adolescents having mild anaemia and 0.6% having moderate anaemia. Research by Nursalam et al. (2021) also found that the prevalence of anaemia among adolescent girls in Indonesia tends to vary, but many regions report higher rates. This shows that efforts to prevent and treat anaemia in the school environment can have a significant positive impact[2].

One of the preventive measures taken at Junior High School 3 Kediri is the provision of iron folic acid supplement tablets to all female adolescents, which is carried out every week. The activity of taking iron folic acid supplement tablets together aims to increase student discipline and awareness of the importance of iron intake. Research by Susanti et al. (2023) revealed that regular administration of iron folic acid supplement tablets can increase haemoglobin levels and reduce the prevalence of anaemia among adolescents[6].

Iron supplements, which generally contain iron, folic acid, and vitamin C, are specifically designed to meet the nutritional needs of adolescent girls at risk of anaemia. Iron functions to increase haemoglobin production in the blood, while folic acid and vitamin C play an important role in iron absorption and red blood cell formation[7] [8]. The average recommended dose is one tablet per week, which is sufficient to increase haemoglobin levels for those with mild to moderate anaemia.

The main benefit of giving iron supplements is the prevention and treatment of anaemia, which is very important for the health of adolescent girls. Anaemia can have a negative impact on physical growth, cognitive development, and productivity at school[6]. Research shows that adolescent girls who routinely consume iron supplements experience a significant increase in haemoglobin levels, thereby reducing the risk of health complications in the future[9].

Table 1: Hb result of female adolescent of Junior High School 3 Kediri

Hb Result

Female Adolescent	Normal		Mild Anaemia		Moderate Anaemia		Severe Anaemia		Total
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage	
7A	15	94%	1	6%	0	0%	0	0%	16
7B	14	93%	1	7%	0	0%	0	0%	15
7C	16	100%	0	0%	0	0%	0	0%	16
7D	16	100%	0	0%	0	0%	0	0%	16
7E	16	100%	0	0%	0	0%	0	0%	16
7F	14	100%	0	0%	0	0%	0	0%	14
7G	18	100%	0	0%	0	0%	0	0%	18
7H	15	100%	0	0%	0	0%	0	0%	15
7I	15	100%	0	0%	0	0%	0	0%	15
7J	16	94%	1	6%	0	0%	0	0%	17
7K	14	88%	1	6%	1	6%	0	0%	16
Total	169	97%	4	2%	1	1%	0	0%	174

However, although iron supplements have many benefits, their use can also cause side effects for some individuals. Common side effects include nausea, constipation, and digestive disorders[10]. Therefore, it is important to provide education to adolescent girls on how to consume these tablets properly, such as consuming them with food to minimize side effects. With a good understanding, it is hoped that blood-boosting tablets can provide maximum benefits without causing additional health problems.This effort is also supported by educational programs related to the importance of nutrition and health. Education about healthy eating patterns and understanding of anaemia is very important to increase student awareness[9]. The results showed that knowledge about nutrition has a positive effect on healthy eating behaviour among adolescents[9].

Although the prevalence of anaemia in Junior High School 3 Kediri is low, it is still important to conduct regular monitoring. Undetected anaemia can potentially develop into more serious health problems in the future, especially when adolescent girls enter the pregnancy phase[5]. Therefore, the screening program should be continued and expanded to cover all female students at various levels of education.

It should also be noted that social and economic factors can affect the nutritional and health status of adolescent girls. Research by Sari et al. (2020) showed that adolescents from low economic backgrounds are more at risk of anaemia. Therefore, more targeted and community-based interventions may be needed to ensure that all adolescent girls have access to adequate nutrition[11].

From these results, it can be concluded that the health screening program and the provision of blood supplement tablets have shown positive results in Junior High School 3 Kediri. However, awareness of the importance of health and nutrition must continue to be improved. The involvement of parents and the community in supporting a healthy diet is needed[1].

In order to support the sustainability of this program, cooperation between schools, parents, and government should be strengthened. Further research is needed to explore the factors that influence the health status of adolescent girls, as well as to evaluate the effectiveness of ongoing intervention programs[12]. Overall, the results of this study provide an optimistic picture of the anaemia status among adolescent girls at Junior High School 3 Kediri, but still require continued attention and action to maintain their health in the future.

4. CONCLUSIONS

From the results of the study at Junior High School 3 Kediri, it can be concluded that the health screening program and the provision of blood supplement tablets successfully showed a low prevalence of anaemia among adolescent girls, with the majority of students having normal haemoglobin levels. Routine administration of blood supplement tablets, along with health education, plays an important role in anaemia prevention and increased awareness of the importance of balanced nutrition. Despite the positive results, ongoing monitoring and interventions are needed to ensure the health of adolescent girls and prevent potential health problems in the future.

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